DEPARTMENT OF

CHEMICAL ENGINEERING

First Row Left To Right

S. S. BHAGWAT
Professor of Chemical Engineering

V. G. GAIKAR
Bharat Petroleum Professor of Chemical Engineering & Head, Department of Chemical Engineering Co-ordinator, UGC National Resource Centre in Chemical Engineering Institute co-ordinator, TEQIP-II

P. R. GOGATE
Assistant Professor of Chemical Engineering

A. M. LALI
Professor of Chemical Engineering & Head, DBT-ICT-Centre for energy Biosciences

MRS. K. V. MARATHE
Associate Professor in Metallurgical Engineering

Second Row Left to Right

A.B. PANDIT
UGC, Research Scientist C (Professor's Grade)

A. V. PATWARDHAN
Professor of Chemical Engineering & Dean, Academic Program

A. W. PATWARDHAN
Associate Professor in Chemical Engineering

V. K. RATHOD
Associate Professor in Chemical Engineering

B. N. THORAT
Professor of Chemical Engineering

Third Row Left to Right

P. D. VAIDYA
K. V. Mariwala Assistant Professor of Chemical Engineering

G. D. YADAV
Vice Chancellor, J.C. Bose National Fellow (DST-Govt of India), and R.T. Mody Distinguished Professor of Chemical Technology

VISHWANATH H. DALVI
R. A. Mashelkar Assistant Professor in Chemical Engineering

PARAG R. NEMADE
DAE-Scientist Grade A (DAE-ICT Centre)

J. B. JOSHI
DAE- Homi Bhabha Chair Professor, Homi Bhabha National Institute,

Fourth Row Left to Right

M. SRIRAM
Adjunct Professor of Chemical Engineering
Honorary Professors of Chemical Engineering

C. S. MATHPATI
Assistant Professor in Chemical Engineering

NEETU JHA
DAE-ICT Scientist A

SUDHIR KUMAR SINGH
DAE-ICT Scientist A

S.M. SONTAKKKE
DAE-ICT Scientist A

O. P. GOYAL
Adjunct Professor of Chemical Engineering

The research productivity of the Department is all time high, with more than 150 research papers, either published or in press, for the period April 2011-March 2012. A total 20 Ph.D.s and 42 Masters completed their degrees. In coming year we expect this number to grow. Considering that the Department has seen retirement of many senior faculty in the last few years, it is an outstanding achievement.

V. G. Gaikar
F.N.A.E., F.M.A.Sc., F.M.O.T.A.I., M.I.I.Ch.E.,
B.Chem. Engg., M. Chem. Engg., Ph.D. (Tech.) Head of the Department

It is my great pleasure to place this annual report in your hands for the year 2011-12 which has seen performance of the Department surpassing the previous numbers. The research productivity of the Department is all time high, with more than 150 research papers, either published or in press, for the period April 2011-March 2012. A total 20 Ph.D.s and 42 Masters completed their degrees. In coming year we expect this number to grow. Considering that the Department has seen retirement of many senior faculty in the last few years, it is an outstanding achievement.

This year, Professor Mahajani retired from his position of DAE-ICT Professor from the Department. I would like to put on record appreciation of the Department for his immense contribution by keeping the Instrumentation Facility trouble free and in working conditions all these years. The Department has also added several new members on the faculty list. With the varied backgrounds of the young group of Dr. (Mrs.) Jha, Dr. Nemade, Dr. Singh, Dr. Dalvi and Dr Sontakke, the Department is now poised to explore new frontier areas of science and engineering. After these new additions, the Department has now 18 regular faculty members and scientists, one emeritus professor, two adjunct professors and three honorary professors. I must also appreciate the efforts put in by these honorary professors who take time from their busy schedule in industry and teach a course in ICT, without expecting any financial remuneration from the Institute.

Professor Yadav received the Jagdish Chandra Bose National Fellowship, from Department of Science and Technology, Govt. of India. He also was selected as Fellow of TWAS, and Fellow of Institution of Chemical Engineers, UK. Professor Pandit has been selected on editorial board of 'Sonochemitstry'. The students also continue to bring laurels to the Department. Mitesh Gangar bagged the prestigious Acharya P C Ray award of IIChE for his final year Design Project while a team of Ms. Mansi Shah, Tej Choksi and Subnis won the N.R. Kamath Quiz Trophy making it three years in row, for the Department. A number of visitors have visited the Department and delivered the lectures under different endowments. Yogesh Shinde won the Outstanding Young Engineer award of IIChE, MRC, this year.

Our Industry collaboration is also on a high note. Pidilite Industries Ltd. has instituted a doctoral fellowship in Chemical Engineering in Honour of Professor Sharma this year. This fellowship is called Professor M M Sharma-Pidilite Industries Ltd Doctoral fellowship with an amount that will be maintained higher than the UGC fellowship. Several industries and Institutions have signed MoUs for research collaboration with us. In March this year, we signed an MoU with RCF Ltd. for institution of the RCF Ltd. Professorship in the Department, in the presence of Hon'able Chief Minister Shri Prithviraj Chavan and Hon'able Minister for Technical and Higher Education, Shri Rajesh Tope. We hope that a few more of such positions, if supported by other Industries, will strengthen the Department immensely. Industries also have a lot to gain by collaboration with us on theme based Centres that can share resources in the department.

The Department also inaugurated the Sophisticated Instrumentation Facility under UGC-Networking Resource Centre in October 2011 that houses now all particle characterization instruments. With commissioning of all these equipments, the Department is now ably equipped to handle research in frontier areas of Nano-science and Nano-technology. The UGC-Networking Centre held five workshops this year where we provided financial assistance and training to engineering teachers and Ph.D. researcher from other colleges for research in frontier areas.

As a Department also, we have evolved significantly in the last few years, contributing to many changes in the Institute and we shall continue to do so with enthusiasm in years to come.

V G Gaikar
(Head of the Department)

S. S. BHAGWAT

B.Chem. Engg., M. Chem. Engg ., Ph.D. (Tech), FMASc., F.M.O.T.A.I., M .I.I.Ch.E.

Professor of Chemical Engineering

& Head Warden, ICT Hostels

Research interests:

Energy Eng-ineering, Interfacial Science & Engineering, Applications of artificial neural networks

Subjects taught:

Chem. Eng. Thermodynamics-I, Chemical Engineering Thermodynamics-II, Interfacial Sci. & Engg

Total number of publications:

40 (h index =7)

Number of citations: 264

Patents:

applied: 05;

granted : 02

Total number of Conference Presentations: 43

completed: Ph.D. : 20

Masters : 59 PDF:1

Current students

Ph.D. : 16 Masters: 05

Number of Current Projects: 06

Professional Activities:

- Vice Chairman, Executive Council, Indian Institute of Chemical Engineers, Mumbai Regional Centre
- Honorary Secretary and Member, Executive Council (National), Indian Society for Surface Science and Technology, Western India Chapter
- Member, Editorial Board, Journal of Surface Science and Technology

Consultant to:

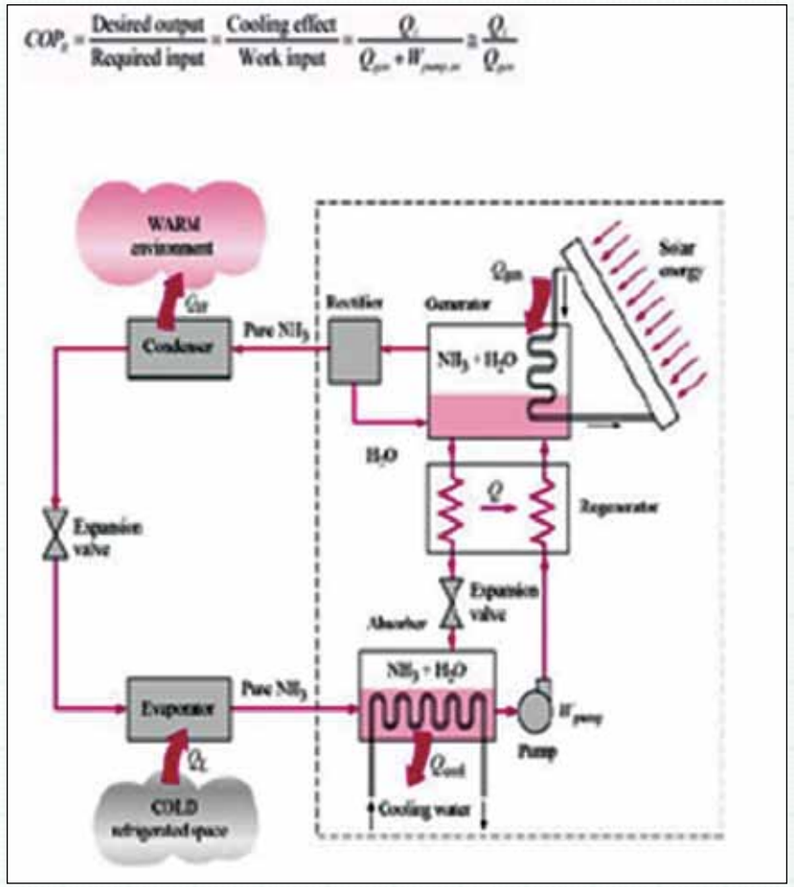
- Galaxy Surfactants Ltd
- Balmer Lawrie & Co Ltd
- Maharashtra State Power Generation Com. Ltd.
- Marico Ltd
- Oxbox Ltd
- Asian Paints Ltd
- IPCA laboratories Ltd

Publications

1. Samant, B.S., Bhagwat, S.S., A novel improvement in ArLPdF catalytic fluorination of aromatic compounds, Applied Catalysis A: General, 394(1-2), 191-194, 2011
2. Samant, B.S., Bhagwat, S.S., Enantioselective cycloetherification in a micellar catalysis system, Chinese Journal of Catalysis, 32(2), 231-234, 2011
3. Sonchal B.P. , Bhagwat, S.S., Droplet exchange kinetics in microemulsions, J. Disp. Sci. Tech., 32, 1404-1407, 2011
4. Manish M, Shinde, Sunil S. Bhagwat, Surfactant assisted aqueous phase Heck reaction, J. Disp. Sci. Tech., 33, 117-122, 2011
5. Manish M. Shinde Sunil S. Bhagwat, Surfactant assisted Pd/C catalyzed Sonogashira reaction in aqueous media, Colloids & Surfaces A, 380, 201-206, 2011
6. Ramesh R.Prajapati and Sunil S. Bhagwat, Effect of Foam Boosters on Krafft Temperature., Journal of Chemical and Engineering Data, 57(3), 869-874, 2012
7. Bhupesh S. Samant, Sunil S. Bhagwat, Selectivity enhancement of aromatic halogenation reactions at the micellar interface: effect of highly ionic media., Monatsh Chem DOI 10.1007/s00706-011-0677-1

Conference Papers

1. "Novel Anionic Gemini surfactants", Gotmukle Sharad and Bhagwat Sunil in 6th Mumbai Pune Soft Matter meeting, NCL Pune, Dec. 03, 2011
2. "Effect of Glucose Based Additives on Cloud Point", Sulakhe Swapnil and Bhagwat Sunil in 6th Mumbai Pune Soft Matter meeting, NCL Pune, Dec. 03, 2011
3. "Droplet Exchange Kinetics in Microemulsions", Sonchal Bhushan and Bhagwat Sunil in 6th Mumbai Pune Soft Matter meeting, NCL Pune, Dec. 03, 2011
4. "Innovative Applications of Surfactant Science and Technology" in International Conference on Soap, Detergents and Cosmetics, Mumbai, Dec.12-13, 2011
5. "Dynamics of Surface Tension: Foaming" at DDU, Gujarat, Dec. 19, 2011
6. "Dissolution kinetics of ZrO2 in HNO3 solutions", Prajapati Ramesh, Srinivasan T.,Chandramouli V. and Bhagwat Sunil in Emerging Trends in Separation Science & Technology (SESTEC 2012), Mumbai, Feb. 27 - March 01, 2012



5 TR PILOT PLANT FOR NH3-WATER ABSORPTION REFRIGERATION

V. G. GAIKAR

F.N.A.E., F.M.A.Sc., F.M.O.T.A.I., M.I.I.Ch.E., B.Chem. Engg., M. Chem. Engg., Ph.D. (Tech.)

Bharat Petroleum Professor of Chemical Engineering &
Head, Department of Chemical Engineering
Co-ordinator, UGC National Resource Centre in Chemical Engineering
Institute co-ordinator, TEQIP-II

Research interests:

Reactive sorption with functionalized polymers, Extraction and Purification of Natural Products, Development of newer chemical engineering applications of surface actives, Clean technology with aqueous solutions based chemistry, Biochemical Separations, Molecular simulation of interfacial and complexation processes

Subjects taught:

Biochemical Engineering, Process Engineering, Advanced Separation Processes

Total number of publications:

114 (h index:21)

Number of citations: 1338

Patents granted: US: 3; Indian: 5

Total number of Conference Presentations: 122

completed: Ph.D. : 31
Masters :71

Ongoing: Ph.D. : 13
Masters :04

Professional Activities:

- Fellow, Indian National Academy of Engineering
- Fellow, Maharashtra Academy of Sciences
- Member, Task-Force (Oil, Gas and Petroleum), Department of Public Enterprises,
- Member, Research Monitoring Committee, ONGC
- Member, Review Committee for SAIL Project, Research in Wastewater Treatment in SAIL, Ministry of Steel, Government of India
- Member, Editorial Board, Indian Journal of Chemical Technology
- Member, Vishwakarma Puraskar Committee, Labour Ministry, GOI
- Member, Indian Institute of Chemical Engineers
- Member, Indian Society for Surface Science and Technology, Western India Chapter
- Member, Oil Technologists Association of India

Consultant to

- Beech Projects Ltd
- IPCA Laboratories Ltd
- Synthite Ltd.

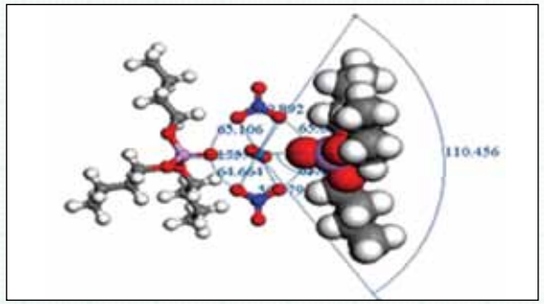
Publications

1. Madyal, R.S., Gaikar, V.G., Steric effects of trialkyl phosphates on the extraction of uranyl cation, Desalination and Water Treatment, 38 (1-3), 166-178
2. K. N. Shobha, Gaikar, V. G., Musharaf Ali, S.K., Designing of ligands for solvent extraction of Cs+ using molecular modeling approach , Desalination and Water Treatment, 38 (1-3), 1-7
3. Devendra, L.P., Gaikar, V.G., Is sodium cinnamate a photoswitchable hydrotrope?, J. Molecular Liquids, 16571-77
4. Devendra, L.P., Gaikar, V.G., Purification of Forskolin by adsorptive separation using functionalized polymer bearing specific ligands designed by molecular simulation, Ind. Eng. Chem. Res., 50 (20), 11667-11676
5. Dicholkar, D.D., Gaikar, V.G., Kumar, S., Studies on steam pyrolysis of amides as a waste solvent management method, Energy Procedia, 7, 534-539
6. Sharma R. A., Gaikar, V.G., Hydrotropic Extraction of Reserpine from Rauwolfia vomitoria Roots, Separation Science and Technology, 47 (6), 827-833
7. Patil A.R., Arora J. S., Gaikar V. G., Purification of Artemisinin from Artemisia annua Extract by Sorption on Different Ligand Loaded Polymeric Adsorbents Designed by Molecular Simulation, Separation Science and Technology, 47 (8), 1–11
8. Dicholkar, D.D., Gaikar, V.G., Kumar, S., Natarajan, R. Modeling and optimizing of steam pyrolysis of dimethyl formamide by using response surface methodology coupled with Box-Behnken design, J. Analy. Appl. Pyrolysis, 96, 6-15
9. Dicholkar, D.D., Patil, L.K., Gaikar, V.G., Kumar, S., Kamachi Mudali, U., Natarajan, R. , Direct determination of tri-n-butyl phosphate by HPLC and GC methods, J. Radioanalytical and Nuclear Chemistry, 291(3), 739-743

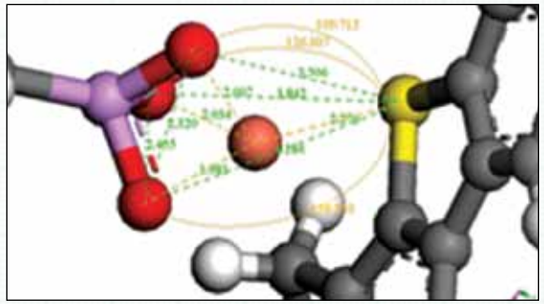
Conference papers

1. Molecular simulation as a tool for improving separations, Conference on Technological Advancements in Chemical and Environmental Engineering (TACEE-2012), March 23 – 24, 2012, BITS, Pilani
2. Role of Molecular Simulation in Chemical Engineering , National Conference on "The Role of Basic Sciences in Emerging Industrial Scenario (RBSEIS-2012)" in association with Indian Society for Technical Education (ISTE) chapter, Shri Ram Meghe College of Technology, Badnera, 7th April 2012
3. Hydrotropes and complex behaviour of their mixtures with surfactants , Pt. Madan Mohan Malviya Lecture series, Centre of Advanced Study, Department of Chemical Engineering, Banaras Hindu University, Varanasi, March 2012
4. Molecular Modelling as a Tool for Improving Adsorptive Separations of Organic and Inorganic Mixtures , 2nd Indo-German Workshop on "Advances in Reaction and Separation Processes" Bad Herrenalb, Germany, 19th February 2012-22nd February 2012
5. Amine Functionalized Polymers For adsorption Separation of CO2 From N2 And CH4, 3rd Indo-Norwegian Seminar on CO2 Capture: Leading High Science to Innovative Technologies 13th -14th February 2012, India Habitat Center, Gulmohar Hall, New Delhi
6. Complex Fluid behavior of mixtures of hydrotropes and surfactants in aqueous solutions, Symposium on Rheology of Complex Fluids, COMPFLU 2012, IIT-Guwahati, 5th-8th Jan. 2012
7. Soft condensed matter: Structure and Dynamics, Chief Guest Address at SOFT-CHEM 2011-, Sinhgad College of Engineering, Pune, 5th July 2011
8. A process for removal of silver from crude Oxaliplatin by adsorptive separation to meet specification as per USP/BP. Kumar P., Ansari K. & Gaikar V. G., 18th International Conference (POST ISCBC-2012), Institute of Advanced Study in Science & Technology (IASST), Assam.
9. Low molecular weight organogels and their application in the synthesis of CdS nanoparticles. Kumar P., Kadam M. M. & Gaikar V. G., 6th Mumbai Pune Soft Matter meeting, NCL, Pune & 18th International Conference (POST ISCBC-2012), IASST, Assam.
10. Pressmud as an alternate resource to hydrocarbon fuels by a novel process of thermal pyrolysis followed by catalysis, Ansari K. & Gaikar V. G., 18th International Conference (POST ISCBC-2012), IASST, Assam
11. Viscoelastic properties of aqueous solutions of surfactant and photoswitchable hydrotrope, Rathi N, Kadam M. M. & Gaikar V. G., 6th Mumbai Pune Soft Matter meeting, NCL, Pune

12. A Density Functional Theory Analysis of Zirconium Isotopic fractionation, Arora J.S. & Gaikar V. G., 6th Mumbai Pune Soft Matter meeting, NCL, Pune
13. A Density Functional Theory Analysis of Zirconium Isotopic fractionation, Arora J.S. & Gaikar V. G DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology, Mumbai, 2012
14. Ligand architecture for Uranyl cation, Madyal R.S. & Gaikar V. G., DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology, Mumbai, 2012
15. Alternative sustainable technologies, UGC-Networking Resource Centre Workshop on "Alternative Sustainable Technologies, ICT, March 14-18, 2012
16. Process Intensification by microwave, UGC Refresher Course, Dr. Babasaheb Ambedkar Technological University, Lonere, March 2012
17. Hydrotropes and their chemical engineering applications, UGC Refresher Course, Dr. Babasaheb Ambedkar Technological University, Lonere, March 2012
18. Low molecular weight organogels and their application in the synthesis of CdS nanoparticles. Kumar P., Kadam M. M. & Gaikar V. G 18th International Conference (POST ISCBC-2012), IASST, Assam
19. Molecular modeling as tool for organic and inorganic mixtures separations , International conference : Vistas in Chemistry 2011, Indira Gandhi Centre for Atomic Research, Kalpakkam-November 2011
20. Demosntration experiments, UGC-Networking Resource Centre Workshop on "Chemical Engineering Laboratory Practice , ICT, September 2011
21. Molecular Modelling as simulation tool for Chemical engineering Applications,, UGC-Networking Resource Centre Workshop on "Molecular Modelling , ICT, January 2012



Complex of Uranylnitrate- Tributyl Phosphate



DiMehtyl di Benzothiophene interaction with Cu-BSR polymer

P. R. GOGATE

B.Chem.Eng., M.Chem.Eng., Ph.D. (Tech.)

Assistant Professor of Chemical Engineering

Research interests:

Cavitation Phenomena, Sonochemistry, Hydrodynamic Cavitation, Process Intensification, Wastewater Treatment

Subjects taught:

Computer Programming Laboratory, Advanced Reaction Engineering, Engg. App. Digital Computers, Material and Energy Balance Computations

Awards:

Anil Kumar Bose Medal of Indian National Science Academy, 2011

Total number of publications:

105 (h index: 26)

Number of citations: 2389

Total number of Conference Presentations: 35

Completed: Ph.D. : NIL

Masters : 9

Ongoing Ph.D. : 7

Masters : 10

Book / Book Chapters

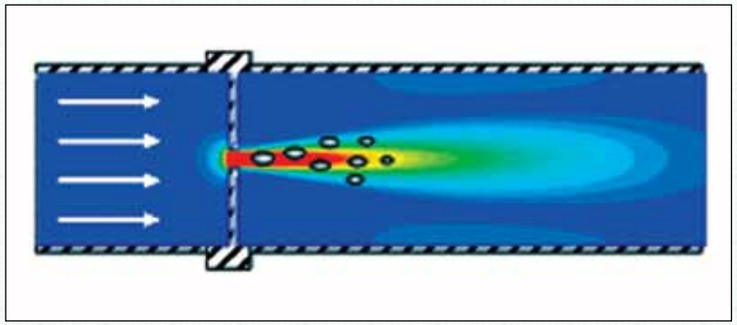
1. "Theory of Cavitation and design aspects of Cavitational reactors" Chapter in book entitled "Theoretical and Experimental Sonochemistry involving inorganic systems" edited by Pankaj, Ashokkumar, Springer, 2011, 31-67
2. "Cavitation generation and usage without ultrasound: Hydrodynamic Cavitation" Chapter in book entitled "Theoretical and Experimental Sonochemistry involving inorganic systems" edited by Pankaj, Ashokkumar, Springer, 2011, 69-106
3. "Application of Hydrodynamic cavitation for food and bioprocessing", Chapter in book entitled "Ultrasound Technologies for Food and Bioprocessing" edited by H. Feng, J. Weiss, G. Barbosa-Cánovas, Springer, New York, USA, 2011, 141-173
4. "Sonocrystallization and its application in food and bioprocessing", Chapter in book entitled "Ultrasound Technologies for Food and Bioprocessing" edited by H. Feng, J. Weiss, G. Barbosa-Cánovas, New York, USA, 2011, 467-494
5. "Matching Chemistry with Chemical Engineering for Optimum Design and Performance of Pharmaceutical Processing" Chapter in book entitled "Pharmaceutical Process Chemistry" edited by Shioiri, T., Izawa, K and Konoike, T, Wiley-VCH Gmbh & Co, Weinheim, 2011, 443-467
6. "P.R. Gogate, "Industrial wastewater treatment using a combination of cavitational reactors and Fenton processes: A review" Chapter in "Advances in Chemistry Research" Volume 9, Edited by James C. Taylor, Nova Science Publishers, 2011, 139-163 (ISBN 978-1-61209-702-2)
7. P.R. Gogate, "Cavitation in Biotechnology" Chapter in "Comprehensive Biotechnology", 2nd Edition, Vol. 2 edited by Murray Moo-Young, Elsevier B.V. 2011, 957-965

Publications

1. S.N. Katekhaye, P.R. Gogate, Intensification of cavitational activity in sonochemical reactors using different additives: Efficacy assessment using a model reaction, Chemical Engineering Processing, 50, 95-103, 2011
2. P.R. Gogate, V.S. Sutkar, A.B. Pandit, Sonochemical reactors: important design and scale up considerations with a special emphasis on heterogeneous systems, Chemical Engineering Journal, 166, 1066-1082, 2011
3. A.V. Mohod, P.R. Gogate, Ultrasonic degradation of polymers: Effect of operating parameters and intensification using additives

for Carboxymethyl Cellulose (CMC) and polyvinyl alcohol (PVA), Ultrasonics Sonochemistry, 18, 727-734, 2011

4. K.P. Mishra, P.R. Gogate, Intensification of sonophotocatalytic degradation of p-nitrophenol at pilot scale capacity. Ultrasonics Sonochemistry,18, 739-744, 2011
5. A.K. Shriwas, P.R. Gogate, Ultrasonic degradation of methyl Parathion in aqueous solutions: Intensification using additives and scale up aspects. Separation & Purification Technology, 79, 1-7, 2011
6. K.P. Mishra, P.R. Gogate, Intensification of degradation of aqueous solutions of rhodamine B using sonochemical reactors at operating capacity of 7 L. Journal of Environmental Management, 92(8), 1972-77, 2011
7. P.R. Gogate, Hydrodynamic Cavitation for food and water processing, Food and Bioprocess Technology, 4(6), 996-1011, 2011
8. I. M. Khokhawala, P.R. Gogate, Intensification of sonochemical degradation of Phenol using additives at pilot scale operation, Water Science & Technology, 63(11), 2547-52, 2011
9. A.K. Shriwas, P.R. Gogate, Intensification of Ultrasound induced degradation of 2, 4, 6 Trichlorophenol: Understanding mechanism and scale up aspects. Industrial Engineering Chemistry Research, 50, 9601-9608, 2011
10. V.P. Chavan and P.R. Gogate, Intensification of synthesis of cumene hydroperoxide using Sonochemical reactors, Industrial Engineering Chemistry Research, 50, 12433-38 2011
11. L. Csoka, S.N. Katekhaye and P.R. Gogate, Comparison of cavitational activity in different configurations of sonochemical reactors using model reaction supported with theoretical simulations, Chemical Engineering Journal, 178, 384-90, 2011
12. B. A. Bhanvase, D. V. Pinjari, P.R. Gogate, S. H. Sonawane and A. B. Pandit, Process intensification of Encapsulation of Functionalized CaCO3 nanoparticles using Ultrasound Assisted Emulsion Polymerization, Chemical Engineering & Processing, 50, 1160-68, 2011
13. B. A. Bhanvase, D. V. Pinjari, S. H. Sonawane, P.R. Gogate and A. B. Pandit, Analysis of Semi-batch Emulsion Polymerization: Role of Ultrasound and Initiator, Ultrasonics Sonochemistry, 19, 97-103, 2012
14. R. K. Joshi, P.R. Gogate, Degradation of Dichlorvos using Hydrodynamic Cavitation based treatment strategies, Ultrasonics Sonochemistry, 19, 532-539, 2012



A. M. LALI

B.Chem.Engg, M.Chem.Engg, Ph. D. (Tech.)

Professor of Chemical Engineering & Head, DBT-ICT-Centre for energy Biosciences

Research interests:

Bioenergy, Biofuels and biomass to other bio/chemicals, purification of proteins, nucleic acids, other biomolecules, natural & synthetic APIs, high value organic/inorganic chemicals, Continuous chromatography, Modeling and Adsorptive Separations, Biocatalysis and Biotransformations, Bioreactor design, Mixing and dynamics of solid-liquid fluidized beds, Dynamics of gas-solid circulating fluidized bed, Process integration and intensification, Process development, characterization and scale-up

Subjects taught:

Chromatography & Adsorptive Separations Separation processes-II

Total number of publications:

41 (h index: 10)

Citations: 421

Patents granted: 6

Number of sponsored projects:

Government- 4 Private- 5

completed Ph.D. :06

Masters :02

Ongoing Ph.D. : 22Masters :04

Professional Activities:

- Member, Apex Committee, Food and Nutritional Safety, DBT, India
- Member, Task Force Committees on Biofuels, and Bioprocesses and Bio-products, DBT, India 2008-till date
- Project Leader for India-Queensland centre for collaborative biofuel research (ICT, Mumbai and Queensland University of Technology, Brisbane, Australia) 2009-till date
- Member of the Scientific Advisory Committee (SAC) on Industrial Biotechnology (Department of Biotechnology-Government of India), 2008-till date
- Member of the Scientific Advisory Committee (SAC) on Biofuels and Bioenergy (Department of Biotechnology-Government of India) 2008-2009
- Member, International Scientific Committee on Biofuels & Industrial Biotechnology, UNIDO, Trieste, Italy/Vienna, 2009-till date
- Member of the Technology Task Force Committees with Department of Biotechnology (DBT) and National Thermal Power Corporation (NTPC)

Consultant to

- Privi Organics Pvt. Ltd.
- Strides Arco Lab Ltd.
- Chemito Technologies Pvt. Ltd.
- Snowtech Equipments Pvt. Ltd.

Publications:

1. Amith D. Naik, Monika Raina, Arvind M. Lali, AbSep-An amino-acid based pseudobioaffinity adsorbent for the purification of immunoglobulin, Article in Press, J. Chromatogr. A, 2011, doi:10.1016/j.chroma.2011.01.083
2. Sushant D. Wadekar, Sachin Patil, Sandeep Kale, Arvind Lali, D. N. Bhowmick and Amit P. Pratap, Structural elucidation and Surfactant properties of rhamnolipids synthesized by Pseudomonas aeruginosa (ATCC 10145) on sweet water as carbon source and stabilization effect on foam produced by Sodium Lauryl Sulfate, Tenside Surfactants Detergents Tenside Surfactants Detergents, 48(4), 286-291, 2011

Conference Presentations:

1. "Current Technology Status of Cellulosic Ethanol in India" held on 5th March 2012 at Faridabad.
2. Landscape Session: "Biorefining, Scale up

Technologies & Fermentation Technologies" at Bioenergy Research Workshop organized by DBT India and BBSRC held from 9th -11th Oct. 2011 at New Delhi.

3. "Current Status of Second Generation Biofuel Conversion Technologies" at "18th Conference of Indian Oil and Gas Review Summit and International Exhibition" held at Bandra, Mumbai on 8th September 2011.
4. National Seminar on Bioenergy solutions held on 28th March 2011 at New Delhi

MRS. K. V. MARATHE

B.E. (Metallurgical engineering)
M. Tech. (Metallurgical Engineering)
Associate Professor in Metallurgical Engineering

Research interests:

Hydrometallurgical Extraction, Effluent treatment, Membrane separations, Corrosion, Metal composite, Development of new materials.

Subjects taught:

Materials Technology – I, Materials Technology-II, Industrial & Engineering Chemistry, Elective-II: Advanced Material Science, Materials Technology

Total number of publications:

18 (international)

Number of citations: 54

Total number of Conference Presentations: 3

PhD. = 2,
R.A. = 1,
Masters = 5

Number of projects: 1

Professional Activities

1. Reviewer for Journal of Membrane Science, Journal of Hazardous Materials, and Indian Journal of Chemical Technology

Recent Publications

1. Nimbalkar, V.M., Rao, B.R.K., Deshmukh V.P., Marathe K.V., Prasad N.E., Development of New Castable Al-Alloy-TiB2 Metal Matrix Composites, Journal of Materials & Metallurgical Engineering, 2 (1), 2012.
2. Nimbalkar, V.M., Rao, B.R.K., Deshmukh V.P., Marathe K.V., Shah A.K., Development reaction synthesis process of novel Al-alloys–TiB2 metal matrix composites by in-situ, Journal of Metallurgy and Materials Science, 53 (2), 197-203, 2011
3. Tadakamalla K., Marathe K.V., Hydrodynamic study and optimization strategy for the surfactant recovery from aqueous solutions, Desalination, 266 (1-3) 98-107, 2011

Conference papers

1. Performance Comparison of Ceramic and Polymeric Membranes in Micellar Enhanced Ultrafiltration.12th International Conference on Inorganic Membranes.
2. Polymer Enhanced Ultrafiltration for Effective Removal of Metal Ions from Waste Water Stream." National conference on "Sustainable Development of Water Resources and Environmental Management." Organized by SBCOET, Jaipur.

A.B. PANDIT

B. Tech. (Chem.), Ph.D. (Tech.)
FNA,FASc, FNASc, FNAE, FMASc
M.I.I.Ch.E, M I S T E
UGC, Research Scientist C (Professor's Grade)

Research interests:

Design of Cavitational Reactors and Cavitation Chemistry, Effluent Treatment, Multiphase Reactors, Ultrasonic atomization, Sono-crystallization, Ultrasound assisted emulsification, Enzyme synthesis / usage, Ballast Water treatment

Subjects taught:

Chemical Project Economics, Multiphase Reactors, Environmental Engineering and Pollution Control, Project Economics

Total number of publications:

261 (h index: 31)

Patents granted: 15

completed: Ph.D. : 28

Masters : 56

Ongoing: Ph.D. : 18

Masters : 5

Awards

Professor R. A. Rajadyaksha Best Teacher award

Professional Activities

- UGC Expert, Selection of Ph.D. (Tech.) Fellows in the

Areas of Engineering and Technology, and Member, Project Appraisal Committee, Major Research Projects, UGC

- Member, Project Appraisal Committee, Department of Science and Technology, Scheme for Women in Science
- Member, Project Appraisal Committee, Department of Science and Technology, Scheme for Chemical Engineering Specialization under the SERC Programme
- Co-ordinator, Department of Atomic Energy – Institute of Chemical Technology (DAE-ICT) Center for Chemical Engineering and Research
- President, Board of Governors, UDCT Alumni Association
- Member of Editorial Board & Associate Editor, Ultrasonics Sonochemistry Journal, Elsevier, Netherlands.
- Member, Editorial Board, Chemical Engineering & Processing
- Member, Editorial Board, Candian Journal of Chemical Engineering
- Member, Editorial Board, Journal of Science Assam
- Member, Editorial Board, Journal of Mustard Research Promotion Council

Consultant to

- Kirloskar Integrated Technologies Ltd.
- Godrej Industries ltd, Mumbai, Debottlenecking and capacity enhancement
- Lele and Associates, Mumbai, Biodiesel Plant design
- Proctor & Gamble Manufacturing Co. Ltd., USA.
- K. M. Patel Group of Industries, Ankaleshawar, India.

Publications

1. Bhatte, K.D., Sawant, D.N., Pinjari, D.V., Pandit, A.B., Bhanage, B.M.One pot green synthesis of nano sized zinc oxide by sonochemical method (2012) Materials Letters, 77, pp. 93-95.
2. Padoley, K.V., Saharan, V.K., Mudliar, S.N., Pandey, R.A., Pandit, A.B. Cavitationally induced biodegradability enhancement of a distillery wastewater(2012) Journal of Hazardous Materials, . Article in Press.
3. Baxi, P.B., Pandit, A.B.Using cavitation for delignification of wood (2012) Bioresource Technology, 110, pp. 697-700.
4. Sonawane, S.H., Bhanvase, B.A., Jamali, A.A., Dubey, S.K., Kale, S.S., Pinjari, D.V., Kulkarni, R.D., Gogate, P.R., Pandit, A.B.Improved active anticorrosion coatings using layer-by-layer assembled ZnO nanocontainers with benzotriazole (2012) Chemical Engineering Journal, . Article in Press.
5. Singhal, R.S., Pandit, A.B., Joshi, J.B., Patel, S.B., Danao, S.P., Shinde, Y.H., Gudekar, A.S., Bineesh, N.P., Tarade, K.M. Development of efficient designs of cooking systems. III. Kinetics of cooking and quality of cooked food, including nutrients, anti-nutrients, taste, and flavor (2012) Industrial and Engineering Chemistry Research, 51 (4), pp. 1923-1937.
6. Joshi, J.B., Pandit, A.B., Patel, S.B., Singhal, R.S., Bhide, G.K., Mariwala, K.V., Devidayal, B.A., Danao, S.P., Ganguli, A.A., Gudekar, A.S., Chavan, P.V., Shinde, Y.H. Development of efficient designs of cooking systems. II. Computational fluid dynamics and optimization (2012) Industrial and Engineering Chemistry Research, 51 (4), pp. 1897-1922.
7. Joshi, J.B., Pandit, A.B., Patel, S.B., Singhal, R.S., Bhide, G.K., Mariwala, K.V., Devidayal, B.A., Danao, S.P., Gudekar, A.S., Shinde, Y.H. Development of efficient designs of cooking systems. I. Experimental (2012) Industrial and Engineering Chemistry Research, 51 (4), pp. 1878-1896.
8. Saharan, V.K., Pandit, A.B., Satish Kumar, P.S., Anandan, S. Hydrodynamic cavitation as an advanced oxidation technique for the degradation of Acid Red 88 dye (2012) Industrial and Engineering Chemistry Research, 51 (4), pp. 1981-1989.
9. Bhanvase, B.A., Pinjari, D.V., Gogate, P.R., Sonawane, S.H., Pandit, A.B. Synthesis of exfoliated poly(styrene-co-methyl methacrylate) montmorillonite nanocomposite using ultrasound assisted in situ emulsion copolymerization (2012) Chemical Engineering Journal, 181-182, pp. 770-778.
10. Bhanvase, B.A., Pinjari, D.V., Sonawane, S.H., Gogate, P.R., Pandit, A.B. Analysis of semibatch emulsion polymerization: Role of ultrasound and initiator (2012) Ultrasonics Sonochemistry, 19 (1), pp. 97-103.
11. Ganguli, A.A., Gudekar, A.S., Pandit, A.B., Joshi, J.B. A novel method to improve the efficiency of a cooking device via thermal insulation (2011) Canadian Journal of Chemical Engineering, . Article in Press.
12. Saharan, V.K., Badve, M.P., Pandit, A.B. Degradation of Reactive Red 120 dye using hydrodynamic cavitation (2011) Chemical Engineering Journal, 178, pp. 100-107.
13. Bashir, T.A., Soni, A.G., Mahulkar, A.V., Pandit, A.B. The CFD driven optimisation of a modified venturi for cavitational activity (2011) Canadian Journal of Chemical Engineering, 89 (6), pp. 1366-1375.
14. Bhanvase, B.A., Pinjari, D.V., Gogate, P.R., Sonawane, S.H., Pandit, A.B. Process intensification of encapsulation of functionalized CaCO 3 nanoparticles using ultrasound assisted emulsion polymerization (2011) Chemical Engineering and Processing: Process Intensification, 50 (11-12), pp. 1160-1168.
15. Balaji, C., Moholkar, V.S., Pandit, A.B., Ashokkumar, M. Mechanistic investigations on sonophotocatalytic degradation of textile dyes with surface active solutes (2011) Industrial and Engineering Chemistry Research, 50 (20), pp. 11485-11494.
16. Ganguli, A.A., Pandit, A.B., Joshi, J.B., Vijayan, P.K. Hydrodynamic and heat transfer characteristics of a centrally heated cylindrical enclosure: CFD simulations and experimental measurements (2011) Chemical Engineering Research and Design, 89 (10), pp. 2024-2037.
17. Prasad, K., Pinjari, D.V., Pandit, A.B., Mhaske, S.T. Synthesis of zirconium dioxide by ultrasound assisted precipitation: Effect of calcination temperature (2011) Ultrasonics Sonochemistry, 18 (5), pp. 1128-1137.
18. Pinjari, D.V., Pandit, A.B. Room temperature synthesis of crystalline CeO2 nanopowder: Advantage of sonochemical method over conventional method (2011) Ultrasonics Sonochemistry, 18 (5), pp. 1118-1123.
19. Nisha, P., Singhal, R.S., Pandit, A.B. Kinetic Modelling of Colour Degradation in Tomato Puree (Lycopersicon esculentum L.) (2011) Food and Bioprocess Technology, 4 (5), pp. 781-787.
20. Dharmadhikari, A.K., Dharmadhikari, J.A., Mahulkar, A.V., Ramanandan, G., Ramachandran, H., Pandit, A.B., Mathur, D. Dynamics of photothermally created vaporous, gaseous, and mixed microbubbles(2011) Journal of Physical Chemistry C, 115 (14), pp. 6611-6617.
21. Quan, K.-M., Avvaru, B., Pandit, A.B. Measurement and interpretation of cavitation noise in a hybrid hydrodynamic cavitating device (2011) AIChE Journal, 57 (4), pp. 861-871.
22. Jarag, K.J., Pinjari, D.V., Pandit, A.B., Shankarling, G.S. Synthesis of chalcone (3-(4-fluorophenyl)-1-(4-

methoxyphenyl)prop-2-en-1-one): Advantage of sonochemical method over conventional method (2011) Ultrasonics Sonochemistry, 18 (2), pp. 617-623.

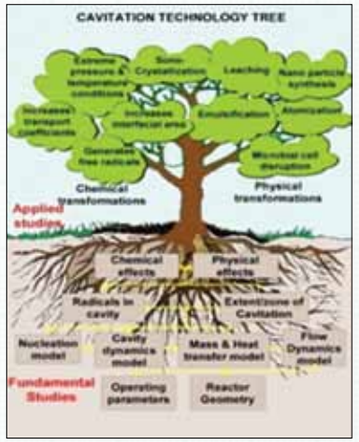
23. Gogate, P.R., Sutkar, V.S., Pandit, A.B. Sonochemical reactors: Important design and scale up considerations with a special emphasis on heterogeneous systems (2011) Chemical Engineering Journal, 166 (3), pp. 1066-1082.
24. Gangar, B.V., Nagarajan, K., Krishnan, R.V., Pandit, A.B. Studies of internal gelation for the production of microspheres: Sonication assisted gelation (2011) Ultrasonics Sonochemistry, 18 (1), pp. 250-257.
25. Bhatte, K.D., Fujita, S.-I., Arai, M., Pandit, A.B., Bhanage, B.M. Ultrasound assisted additive free synthesis of nanocrystalline zinc oxide (2011) Ultrasonics Sonochemistry, 18 (1), pp. 54-58.

Book/ Book Chapters

1. "Sonocrystallization and its application in food and bioprocessing", Chapter in book entitled "Ultrasound Technologies for Food and Bioprocessing" edited by H. Feng, J. Weiss, G. Barbosa-Cánovas, New York, USA, 2011, 467-494
2. "Matching Chemistry with Chemical Engineering for Optimum Design and Performance of Pharmaceutical Processing" Chapter in book entitled "From Milligrams to Tons - Towards Development of Pharmaceutical Process Chemistry" edited by Shioiri, T., Izawa, K. and Konoike, T., Wiley-VCH Gmbh & Co, Weinheim, 2011, 443-467.
3. "Cavitational reactors for Green Chemistry", Chapter in "Process Intensification Technologies for Green Chemistry" edited by Kamelia Boodhoo & Adam Harvey, Wiley-Blackwell, UK, 2011 (In Press)
4. "Synthesis of Nanomaterials using Hydrodynamic Cavitation, Chapter in "Cavitation: A Novel Energy Efficient Technique for the Generation of Nanomaterials" edited by M. Sivakumar & M. Ashokkumar, Pan Stanford, Singapore, 2011 (In Press)

Patents

1. Ultrasound Assisted Process for Synthesis of Chalcone, Indian Patent Application No. 1504/Mum/2011.
2. Synthesis Of Calcium Carbonate Nanoparticles by New Recycle Reactor using Cavitation Technique, Indian Patent Application No. 3546/Mum/2011.
3. Method for the Synthesis of Palladium Nanoparticles using Solar Energy, Indian Patent Application No. 1842/Mum/2011 A.
4. Method for Zinc Oxide Nanoparticle Synthesis using Solar Energy, Indian Patent Application No. 3275/Mum/2011.
5. Method for Magnesium Oxide Nanoparticles Synthesis using Solar Energy, Indian Patent Application No. 3276/Mum/2011.



A. V. PATWARDHAN

B. Chem. Engg. M. Chem. Engg. Ph.D. (Tech.)

Professor of Chemical Engineering & Dean, Academic Program

Research interests:

Heterogeneous Reactions; Green Technology (utilisation of nonedible oils, CO2, and H2S, use of ionic liquids); Steam Reforming of Petroleum Feedstock and Biofuels; Flue Gas Conditioning; Membrane Separation and Membrane Reactors; Non-Conventional Ways of Hydrogen Production and Related Catalyst Development; Solvent Extraction Equipment

Subjects taught:

Transport Phenomena, Chemical Engineering Operations, Chemical Reaction Engineering

Research Guidance:

Doctoral: 6 (+ 8 in progress)
Masters: 33 (+ 4 in progress)

International publications:

37 (h index : 9)

Citations: 253

Professional Activities

- Life Member, Indian Institute of Chemical Engineers
- Member, DSIR Experts' Panel (New Delhi), Accreditation of Research & Development units of various industries
- Vice-Chancellor's nominated member of the Academic Council of Dr. Babasaheb Ambedkar Technological University (BATU), Lonere, Raigad, Maharashtra

Consultant to:

Process industries

Publications

- VP Chavan, AV Patwardhan, PR Gogate, Intensification of Epoxidation of soybean oil using sonochemical reactors, Chemical Engineering & Processing: Process Intensification, 54, 22-28, 201
- NS Kolhe, YH Mirage, AV Patwardhan, VK Rathod, NK Pandey, UK Mudali, R Natarajan, CFD and experimental studies of single phase axial dispersion coefficient in pulsed sieve plate column, Chemical Engineering Research and Design, 89, 1909-1918, 2011
- RA Patil, A Patnaik, S Ganguly, AV Patwardhan, Effect of structural, thermal and flow parameters on steam reforming of methane in catalytic microreactor, Chemical Engineering Research and Design, 89, 2159-2167, 2011

A. W. PATWARDHAN

Ph. D. (Tech.) Chemical Engineering
Associate Professor in Chemical Engineering

Research interests:

Gas - Liquid, Liquid - Liquid multiphase contacting in variety of multiphase contactors. Mathematical modeling and experimental measurements of momentum, heat and mass transfer in multiphase systems, Membrane separation processes

Subjects taught:

Momentum and Mass Transfer, Advanced Momentum Transfer, Material and Energy Balance Computations, Process Modeling and Simulation

Total number of publications:

65 (h index: 12)

Number of citations: 457

Total number of Conference Presentations: 14

completed Ph.D. : 10

Masters : 38

Ongoing Ph.D. : 4

Masters : 4

Consultant to: NOCIL Ltd

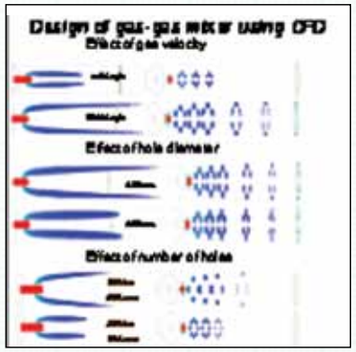
Publications

1. Tiwari A. K., Patkar V. C., Yadav C., Ahamed R., Fani H. Z., Patwardhan A. W., Prasad C. S. R., Singhal A. K., Gantayet L. M., Experimental and Numerical investigation of sub-atmospheric H2-F2 reaction, Combustion Science and Technology, 183, 303 – 320, 2011
2. Naik-Nimbalkar V. S.; Suryawanshi A. D., Patwardhan A. W., Banerjee I.; Padmakumar G.; Vaidyanathan G., Twin jets in cross-flow, Chem. Engg. Sci., 66, 2616 – 2626, 2011
3. Patkar V. C., Patwardhan A. W., Effects of Jet Angle and Orifice Shape in Gas – Gas mixer using CFD, Chem. Eng. Res. Des., 89, 904 – 920, 2011
4. Tiwari A. K., Prasad C. S. R., Patkar V. C., Patwardhan A. W., Gantayet L. M., Influence of Excess Hydrogen and Nitrogen on Temperature Distribution of a Hydrogen-Fluorine Flame Reactor, Combustion Science and Technology, 183, 883 – 896, 2011
5. Khadamkar H. P., Patwardhan A. W., G. Padmakumar, G. Vaidyanathan, Flow Distribution in Inlet Plenum of Steam Generator, Nuclear Eng. Des,. 241, 4165 – 4180, 2011
6. Durve A. A., Patwardhan A. W., Padmakumar G., Vaidyanathan G., Numerical Investigation of Mixing in Parallel Jet,s Nuclear Eng. Des., 242, 78-90, 2012
7. Durve A. P., Patwardhan A. W.,Numerical and Experimental Investigation of Gas Entrainment Phenomenon, Chem. Eng. Sci., 73, 140 – 150, 2012

Conference Papers

1. "Science and Technology" of Mixing at the 5th International Workshop on Mixing, Chromatographic Separations, Filtration, Drying, Mumbai, 14th April 2011

"Batch Versus Continuous Processing" Workshop on Continuous & Intensified Processes, Organized by National Chemical Laboratory (NCL), Dec 19 – 20, 2011



V. K. RATHOD

Ph.D. (Tech.)
Associate Professor in Chemical Engineering

Research interests:

Enzyme-Catalyzed Reactions, Biodiesel Preparation & Separation, Separation Processes, Extraction of Natural Ingredients & Synthesis of Perfumes and Flavours, Separation of Biomolecules, Wastewater Treatment

Subjects taught:

Heat Transfer, Advanced Heat Transfer, Multiphase Reactor Engineering, Advance separation processes, Chemical Reaction Engineering

Total number of publications:

18 (h index: 5)

Number of citations: 108

completed Ph.D. : 1

Masters : 22

Ongoing Ph.D. : 9

Masters : 9

Publications

1. Charpe, T.W., Rathod, V.K., Biodiesel production using waste frying oil, Waste Management, 31(1) 85-90, 2011.
2. Bajoria, S.L., Rathod, V.K., Pandey, N.K., Mudali, U.K., Natarajan, R., Equilibrium study for the system tri-n-butyl phosphate, normal paraffin hydrocarbon, and nitric acid, Journal of Chemical and Engineering Data, 56 (6), 2856-2860, 2011.
3. Navaparaa R. D., Avhada D. N.& Rathod V .K, Application of Response Surface Methodology for Optimization of Bromelain Extraction in Aqueous Two-Phase System, Separation Science and Technology, 46 (11), 1838-1847, 2011.
4. Kolhe N.S., Patwardhan A V., Rathod, V.K*., Pandey, N.K., Mudali, U.K., Natarajan, R, CFD and experimental studies of single phase axial dispersion coefficient in pulsed sieve plate column, Chemical Engineering Research and Design, 89 (10), 1909-1918, 2011.
5. S. Manohar, K.N.Kutty, B.V.Shah, P.K.Wattal, Bajoria S. L., Kolhe N.S., Rathod V K, Removal of dissolved Tri n-butyl phosphate from aqueous streams of reprocessing origin: Engineering scale studies, Desalination & water treatment, 38 (1-3), 146-150, 2012
6. Trupti Charpe, Rathod V K, Extraction of glycyrrhizic acid from licorice root using ultrasound: Process intensification studies, Chemical Engineering and Processing: Process Intensification, 54, 37-41, 2012.

B. N. THORAT

B. Chem. Eng., M. Chem. Eng., Ph. D (Tech) D.H.S.T. (BITS)

Professor of Chemical Engineering

Research interests:

Drying Technology, Process Development, Multiphase Reactors, Industrial Crystallization & Filtration

Subjects taught: Chemical Engineering Operations, Advanced Momentum Transfer

Total number of publications:

53 (h index: 9)

Number of citations: 221

Patents granted: 2

Completed Ph.D. : 10

Masters : 40

Ongoing Ph.D. : 9

Masters : 6

Professional Activities

- Member, Advisory Board, Department of Environment, Ministry of Environment and Forestry, Government of Maharashtra Scientific Advisor on Maharashtra Pollution Control Board (MPCB)
- Member, Editorial Advisory Board, Drying Technology, Taylor & Francis, USA
- Founder & president of World Forum for Crystallization, Filtration and Drying
- Member, Advisory Committee, Asia Pacific Drying Conference
- Member, Advisory Committee, Nordic Drying Conference
- Member, R & D Recognition, DSIR, New Delhi
- Committee Member, 11th UGC Plan, New Delhi
- Committee member, Planning Commission "Working Group on XIIth plan for higher education", Government of India

Consultant to

- Sandoz Pvt. Ltd
- Divya Organics Pvt Ltd
- Cadbury/Kraft Foods India
- PI industries Ltd
- Jubiliant Life sciences Ltd
- Reliance Industries Limited
- SI group India Ltd
- Asian Paints Ltd.
- Astec Pvt. Ltd

Publications

1. Joshi V. S. and Thorat B. N., Formulation and Cost-Effective Drying of Probiotic Yeast, Drying Technology, 29 (7), 749-757, 201
2. D B Jadhav, S D Katekhaye and B N Thorat, Improved RP-HPLC Method for Quantitative Estimation of Stevioside in Stevia Rebaudiana Bertoni. International Journal of Phytopharmacy, 1 (2), 27-34, 2011
3. V A Chaughule, S V Jangam and B N Thorat, Formulation, drying & nutritional evaluation of ready-to-eat Sapota extrudes, International Journal of Food Engineering, 7 (1), Article 13, 2011
4. V A Chaughule and B N Thorat, Microwave vacuum drying of shredded carrots & its nutritional evaluation, International Journal of Food Engineering, 7 (4), Article 8, 2011
5. R S Aware and B N Thorat, Garlic under Various Drying Study and Its Impact on Allicin Retention, Drying Technology, 29 (13), 1510-1518, 2011
6. R G Bait, S B Pawar, A N Banerjee, A S Mujumdar and B N Thorat, Mechanically Agitated Fluidized Bed Drying of Cohesive Particles at Low Air Velocity, Drying Technology, 29 (29), 808-818, 2011
7. S. B. Pawar, A S Mujumdar and B N Thorat, Flow pattern and heat transfer in agitated thin film dryer, Chemical Engineering and Processing: Process Intensification, 50 (7), 687-693, 2011
8. Pawar S. B., Thorat B. N., Infrared drying of alumina-silicate mineral cake. Drying Technology, 29 (7) , 819-824, 2011
9. Pawar S. B., Thorat, B. N., CFD simulation of Taylor-Couette flow in scraped surface heat exchanger Chemical Engineering Research and Design, 90 (3), 313-322, 2012
10. Deulgaonkar S.U., Ramteke L.P., Thorat B.N., Filtration and drying characteristics of casein, Separation and Purification Technology, 92, 50-56, 2012 Article in Press.
11. Mane, S.M., Thorat, B.N., Sawant, M.R., Synthesis and Characterization of Tris (nonyl) Phenyl Phosphite and Interfacial Study with Karanja Oil in Acetonitrile Solution, Journal of Dispersion Science and Technology 33 (3) , 357-361, 2012
12. P. Mestry, A S Mujumdar and B N Thorat, Optimization of Spray Drying of an Innovative Functional Food: Fermented Mixed Juice of Carrot and Watermelon, Drying Technology, 29 (10), 1121-1131, 2011
13. Pawar, S. B., Patil R., Mujumdar A. S. and Thorat, B. N., Mathematical Modeling of Agitated Thin-Film Dryer, Drying Technology, 29 (6), 719-728, 2011

Book / Book Chapters

1. V. A. Chaughule and B N Thorat 2011, Food Extrusion: Emerging Technology for Food Processing in 21st Century", In Drying of Foods, Vegetables and Fruits, Volume 3, (Jangam, S.V., Law, C.L. and Mujumdar, A.S. Ed.), 159-192, ISBN - 978-981-08-6759-3, pg 39-62.
2. V. Tidke, T. J. Gaware and B N Thorat 2011, Drying of Fish and Marine Products, in Drying of Foods, Vegetables and Fruits, Volume 2, Ed. Jangam, S.V., Law, C.L. and Mujumdar, A.S., 2011, ISBN - 978-981-08-7985-3, Published in Singapore, pp. 179-196.
3. V. A. Chaughule and B N Thorat 2011, Microwave drying of Foods, Vegetables & Fruits, accepted for publication in Drying of Foods, Vegetables and Fruits, Volume 4, (Jangam, S.V., Law, C.L. and Mujumdar, A.S. Ed.).

P. D. VAIDYA

K. V. Mariwala Assistant Professor of Chemical Engineering

Research interests:

CO_2 Capture and Utilization, Production of Alternate Fuels, Wastewater Treatment

Subjects taught:

Instrumentation and Process Control, Industrial Catalysts, Advanced Mass Transfer Operations, Transport Phenomena

Total number of publications:

28 (h index = 10)

Total number of citations: 434

Total international conference presentations: 06

Students guided: Masters-09

Current students:

Ph.D.-09,
Masters-09,
JRF-01,
RA-01

Current number of projects: 03

Professional activities

- Alumnus, Alexander von Humboldt Foundation, Germany
- Life Member, Indian Institute of Chemical Engineers

Consultant to

Carbon Clean Solutions Pvt. Ltd.

Publications

1. A. B. Bindwal, P. D. Vaidya, E. Y. Kenig, Kinetics of carbon dioxide removal by aqueous diamines, Chem. Eng. J., 169, 144-150, 2011
2. P. D. Vaidya, R. K. Junghare, Acceleration of the wet oxidation reaction of piperazine by heterogeneous Ru/TiO2 catalyst, Chem. Eng. Commun., 198, 992-1003, 2011
3. G. N. Patil, P. D. Vaidya, E. Y. Kenig, Reaction kinetics of CO2 in aqueous methyl- and

dimethyl-monoethanolamine solutions, Ind. Eng. Chem. Res., 51, 1592-1600.

4. V. R. Dubey, P. D. Vaidya, Kinetics of steam reforming of acetol using a Pt/C catalyst, Chem. Eng. J., 180 (2012) 263-269, 2012
5. A. F. Cunha, Y. J. Wu, F. A. Díaz Alvarado, J. C. Santos, P. D. Vaidya, A. E. Rodrigues, Steam reforming of ethanol on a Ni/Al2O3 catalyst coupled with a hydrotalcite-like sorbent in a multilayer pattern for CO2 uptake, Can. J. Chem. Eng. (2011) DOI: 10.1002/cjce.20662, Article in Press.
6. P. D. Vaidya, E. Y. Kenig, Untersuchung der CO2-Absorptionskinetik in wässrigen Lösungen von N, N-Diethylethanolanmin und N-Ethylethanolamin, Chem. Ing. Technik. (2012) Article in Press (German).
7. P. D. Vaidya, V. K. Dussa, Destruction of chlorinated organics by hydrotreatment using Ru/TiO2 catalyst, Can. J. Chem. Eng. (2012) Article in Press.

Workshops Organized

Workshop on "Alternate Sustainable Processes" under the aegis of UGC-NRC, Department of Chemical Engineering, from March 14-18, 2012.

G. D. YADAV

FNA, FTWAS, FASc.

Vice Chancellor, J.C. Bose National Fellow (DST-Govt of India), and R.T. Mody Distinguished Professor of Chemical Technology

Please refer pages 35 to 61 for the detailed information

VISHWANATH H. DALVI

B.Chem. Engg, M. S. (Twente), Ph. D. (Texas)

R. A. Mashelkar Assistant Professor in Chemical Engineering

Research interests:

Molecular Simulations, Process Simulations, Solar Thermal Systems, Energy Engineering, Environmental Engineering

Subjects taught:

Chemical Engineering Laboratory, Industrial Engineering and Chemistry, Molecular Modeling, Simulation Laboratory

Ongoing Students

Masters: 1 (ongoing)

Research Assosiate: 2

Awards:

Best Teacher Award (2012)

PARAG R. NEMADE

B. Chem. Engg, M.S., Ph.D.

DAE-Scientist Grade A (DAE-ICT Centre

Research interests:

Membrane Separations and Membrane Reactors, Bio-sensors, Process Development

Subjects taught:

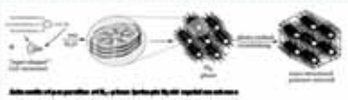
Advanced Separation Processes, Chemical Engineering Laboratory,

Chemical Engineering Operations

Ongoing Students

Masters: 1 (ongoing)

Research Assosiate: 2



J. B. JOSHI

B.Chem.Eng.(1971), Ph.D.(Tech.).(1977), F.N.A., F.A.Sc., FTWAS, Hon Fellow (IIChE), J. C. Bose Fellow (DST, GOI),

DAE- Homi Bhabha Chair Professor, Homi Bhabha National Institute,

Research interests:

Fluid Mechanics, Computational Fluid Dynamics, Design of Multiphase Reactors, Absorption of NOx Gases, Renewable Energy Resources

Subjects taught:

Material and Energy Balance Computations, Instrumentation and Process Control, Mass Transfer Operations, Advanced Process Control, Numerical Methods of Analysis, Analog and Digital Computations, Multiphase Reactor Design, Mass Transfer Equipment Design, Advanced Topics in Mass Transfer, Fluid Mechanics, Transport Phenomena, Pollution Control

Total number of publications:

(h index: 26)

Number of citations: 5461

completed

Ph.D. : 70

Masters : 41

Ongoing Ph.D. : 10

Masters : NIL

Professional Activities

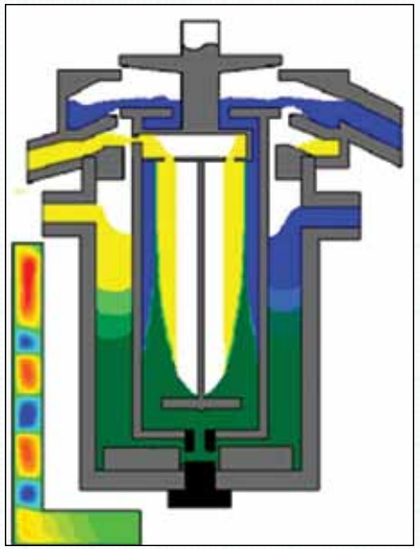
- Member, Editorial Board, Chemical Engineering Research and Design
- Member, Advisory Board, Canadian Journal of Chemical Engineering
- Member, Advisory Board, Reviews in Chemical Engineering
- Chairman, Biotechnology Parks, Department of Biotechnology, Government of India
- Chairman, Research and Innovation, NPIU-TEQIP, Government of India
- Chairman, Extramural Research Programmes, CSIR, Government of India
- Member, Advisory Board, Atomic Energy Regulatory Board, Government of India
- Member, Governing Council, Tata Institute of Fundamental Research, Mumbai
- Member, Research Advisory Committee, NEERI, Nagpur
- Member, Rajeev Gandhi Commission for Science and Technology, Government of Maharashtra
- Member, Governing Board, Rajeev Gandhi Institute of Petroleum
- Member, Scientific Advisory Committee, International Conferences on 'Gas-Liquid and Gas-Liquid-Solid Reactor Engineering'
- Chairman Research Council, IICT, Hyderabad.

Publications

1. Jyestharaj B. Joshi, Nandkishor K. Nere, Chinmay V. Rane, B. N. Murthy, Channamallikarjun S. Mathpati,Ashwin W. Patwardhan and Vivek V. Ranade, CFD simulation of stirred tanks: Comparison of turbulence models (part I: radial flow impellers) Canadian Journal of Chemical Engineering, 89, 23-82, 2011
2. Jyestharaj B. Joshi, Nandkishor K. Nere, Chinmay V. Rane, B. N. Murthy, Channamallikarjun S. Mathpati,Ashwin W. Patwardhan and Vivek V. Ranade, CFD simulation of stirred tanks: Comparison of turbulence models (part II: axial flow impellers, multiple impellers and multiphase dispersions), The Canadian Journal of Chemical Engineering, 89 (4), 754–816, 2011
3. Arijit A. Ganguli, Aniruddha B. Pandit, Jyestharaj B. Joshi and through an Orifice meter: CFD simulation, Chem. Eng. Sci., 71, 300–309, 2012
4. Pallippattu K. Vijayan, Hydrodynamic and heat transfer characteristics of a

centrally heated cylindrical enclosure: CFD (4), 1897–1922, 2012

5. Rekha S Singhal , Aniruddha B Pandit , Jyeshtharaj B. Joshi , Shirish B Patel , Sanjay P Danao , Yogesh H Shinde , Nisha P Bineesh and Kavita M Tarade, Development of Efficient Designs of Cooking Systems. III. Kinetics of Cooking and Quality of Cooked Food, Including Nutrients, Anti-Nutrients, Taste, and Flavor, Ind. Eng. Chem. Res., 51 (4), 1923–1937, 2012
6. Dinesh V Kalaga; Rupesh K Reddy; Jyeshtharaj B. Joshi; Nandakumar K, Liquid Phase Axial Mixing in Solid-Liquid Circulating Multistage Fluidized Bed: CFD modeling and RTD measurements, Chemical Engineering Journal, 191, 475– 490, 2012
7. Anand V Kulkarni and Jyestharaj B. Joshi, Design and selection of sparger for bubble column reactor Part 1: Performance of different spargers, Chemical Engineering Research and Design, 89 (10), 1972-1985, 2011
8. Anand V Kulkarni and Jyestharaj B. Joshi, Design and Selection of Sparger for Bubble Column Reactor Part II: Optimum Sparger Type and Design, Chemical Engineering Research and Design, 89 (10), 1986-1995, 2011
9. Mayurkumar S Gandhi; Mayur J Sathe; Jyeshtharaj B Joshi; Pallippattu K Vijayan, Two phase natural convection: CFD Simulations and PIV measurement, Chemical Engineering Science, 66 (14), 3152-3171, 2011
10. Mayur J. Sathe, Channamallikarjun S. Mathpati, Sagar S. Deshpande, Zoheb Khan, K. Ekambara, Jyeshtharaj.B. Joshi, Investigation of flow structures and transport phenomena in bubble columns using particle image velocimetry and miniature pressure sensors, Chemical Engineering Science, 66, 3087–3107, 2011
11. Kinshuk Dasgupta; J. B. Joshi; Srikumar Banerjee, Fluidized bed synthesis of carbon nanotubes-A review, Chemical Engineering Journal, 171, 841– 869, 2011
12. S.V. Panse, A.S. Jadhav, A.S. Gudekar, J. B. Joshi, Inclined solar chimney for power production, Energy Conversion and Management, 52, 3096-3102, 2011
13. M. R. Bhole, S. V. Ghatage and J. B. Joshi, Comments on the paper "Destabilisation of homogeneous bubbly flow in An annular gap bubble column", The Canadian Journal of Chemical Engineering, 89, 1321–1323, 2011
14. Mayurkumar S. Gandhi, Arijit A. Ganguli, Jyeshtharaj B. Joshi, Pallippattu K. Vijayan, CFD simulation for steam distribution in header and tube assemblies, Chemical Engineering Research and Design, 90, 487–506, 2012
15. Jyeshtharaj B. Joshi , Aniruddha B Pandit , Shirish B Patel , Rekha S Singhal , Govind K Bhide , Kishore V Mariwala , Bhagwat A Devidayal , Sanjay P Danao , Ajit S Gudekar , Prakash V Chavan and Yogesh H Shinde, Development of Efficient Designs of Cooking Systems. I. Experimental, Ind. Eng. Chem. Res., 51 (4), 1878–1896, 2012
16. Jyeshtharaj B. Joshi , Aniruddha B Pandit , Shirish B Patel , Rekha S Singhal , Govind K Bhide , Kishore V Mariwala , Bhagwat A Devidayal , Sanjay P Danao, Arijit A Ganguli, Ajit S Gudekar, Prakash V Chavan and Yogesh H Shinde, Development of Efficient Designs of Cooking Systems. II. Computational Fluid Dynamics and Optimization, Ind. Eng. Chem. Res., 51
17. Swapnil V. Ghatage and Jyeshtharaj B. Joshi, Optimisation of vertical axis wind turbine: CFD simulations and experimental measurements, DOI: 10.1002/cjce.20617
18. T. V. Tamhane, J. B. Joshi, Kamachi Mudali, R. Natarajan, R. N. Patil, Measurement of drop size characteristics in annular centrifugal extractors using phase Doppler particle analyzer(PDPA), doi.org/10.1016/j.cherd.2011.11.007 Arijit A. Ganguli, Ajitkumar S. Gudekar, Aniruddha B. Pandit, Jyeshtharaj B. Joshi, A Novel Method to Improve the Efficiency of a Cooking Device via Thermal Insulation, DOI: 10.1002/cjce.20690
19. J. B. Joshi, N. K. Nere, C. V. Rane, B. N. Murthy, C. S. Mathpati, A. W. Patwardhan and V. V. Ranade, Reply to the "Comments to CFD Simulation of Stirred Tanks: Comparison of Turbulence Models. Part I: Radial Flow Impellers and Part II: Axial Flow Impellers, Multiple Impellers and Multiphase Dispersions", The Canadian Journal of Chemical Engineering, 90, 3–6, 2012
20. Kinshuk Dasgupta, D. Sen, T. Mazumdar, R. K. Lenka, R. Tewari, S. Mazumder, J. B. Joshi and S. Banerjee, Formation of bamboo-shaped carbon nanotubes on carbon black in a fluidized bed, Journal of Nanoparticle Research 14 (3), 728, 2012
21. Manish S. Shah, Jyeshtharaj B. Joshi, Avtar S. Kalsi, C.S.R. Prasad, Daya S. Shukla, Analysis of flow, through an Orifice meter: CFD simulation, Chem. Eng. Sci., 71, 300–309, 2012



Annular Centrifugal extractor

M. SRIRAM

Adjunct Professor of Chemical Engineering
Honorary Professors of Chemical Engineering

Research interests:

Chemical Process Research & Development, Chemical Technology Management, Safety, Health and Environmental Protection Management, Project Management

Subjects taught:

Industrial Safety & Environmental Engineering, Chemical. Process Technology, Industrial Management, Organizational. Behaviour & Project Management

Professional Activities

Contribution as Resource Person during Participation in Seminars Organized by the Indian Institute of Chemical Engineers (Mumbai Regional Centre), Indian Chemical Council

C. S. MATHPATI

Ph. D.(Tech.)
Assistant Professor in Chemical Engineering

Research interests:

Multiphase reactors, Interface heat and mass transfer, Computational fluid dynamics

Subjects taught:

Chemical Engineering Laboratory, Multiphase Reactors, Bioreactor Design and Control, Computational fluid dynamics.

Total number of publications: 11

Number of citations: 56 H index: 5

Patents: NIL

Total number of Conference Presentations: 3

Masters: 3 (completed), 4 (ongoing)

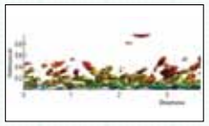
Number of Projects: 1

Consultant to

United Phosphorus Limited

Publications

Hule, P.V., Murthy, B. N. and Mathpati, C. S. Computational fluid dynamics of two-opposed-jet micro-extractor. accepted in International Journal of Chemical Engineering, (2011)



Surface renewing structures at solid liquid interface

NEETU JHA

DAE-ICT Scientist A

Research interests:

Nanomaterials, Fuel cells (proton exchange membrane fuel cell, Direct methanol fuel cell), Nanofluids, Biosensors and Supercapacitors

Teaching Interest:

Advanced Material Science, Statistical Mechanics

Total number of publications: 11

Number of citations: 92

H index: 7

Patents: 3

Publications

1. Neetu Jha, Imran Jafri and S. Ramaprabhu, Study of MWNTs and graphene mixture in different ratios as catalyst support material for DMFC study, International Journal of Hydrogen energy, 36 (2011) 7284-7290.
2. Arava Leela Mohana Reddy, Razack Imran Jafri, Neetu Jha, S. Ramaprabhu and Pulickel M. Ajayan,(2011) Carbon nanocoils for multi-functional energy applications, Journal of Materials Chemistry, 21,16103-16107
3. Neetu Jha & S. Ramaprabhu, MnO2 coated MWNT based Glassy Carbon Electrode for the detection of Organophosphorus compounds, Nanotrends (In press)
4. Neetu Jha, P. Ramesh, Elena Barkyarova, Mikhail E. Itkis and Robert C. Haddon, High energy density supercapacitor based on Hybrid Carbon nanotube and reduced graphite oxide, Advanced Energy Materials (DOI: 10.1002/aenm.201100697).

SUDHIR KUMAR SINGH

DAE-ICT Scientist A
(resigned in May 2012)

Research interests:

Molecular modelling of fluids confined at nanoscale, Porous materials, Renewable energy, Nanoparticles, Surfactants

Teaching Interest:

Separation Processes, Molecular Modeling, Chemical Engg. Laboratory

Total number of publications:

International: 7
National: 2
Book Chapter: 1
Conference : 10

Publications

1. S.K. Singh and J.K. Singh, Effect of pore morphology on vapor-liquid phase transition and crossover behavior of critical properties from 3D to 2D, Fluid Phase Equilibria, 300, 182-187,2011
2. S.K. Singh, J.K. Singh, S.K. Kwak and G. Deo, Phase transition and crossover behavior of colloidal fluids under confinement, Molecular Simulations, 37, 350-360, 2011

S.M. SONTAKKKE

DAE-ICT Scientist A

Research interests:

Photocatalysis, Water treatment

Total number of publications: 4

Number of citations: 1

H index: 1

Conferences: 3

Publications

1. Sontakke, S., Mohan, C., Modak, J., Madras, G. Visible light photocatalytic inactivation of Escherichia coli with combustion synthesized TiO2, Chem. Eng. J., 189-190, pp 101-107, 2012.
2. Sontakke, S., Modak, J., Madras, G. Effect of inorganic ions, H2O2 and pH on the photocatalytic inactivation of Escherichia coli with silver impregnated combustion synthesized TiO2 catalyst, Appl. Catal. B: Environ., 106 (3-4), pp. 453-459, 2011.
3. Sontakke, S., Modak, J., Madras, G. Photocatalytic inactivation of Escherichia coli with LbL fabricated immobilized TiO2 thin films, J. Advanced Oxid. Technol., 14 (1), pp 86-92, 2011.
4. Sontakke, S., Modak, J., Madras, G. Photocatalytic inactivation of Escherischia coli and Pichia pastoris with combustion synthesized titanium dioxide, Chem. Eng. J., 165 (1), pp 225-233.

O. P. GOYAL

Adjunct Professor of Chemical Engineering

Research interests:

Rheology, Heat Integration, S/T Heat Exchanges, Mangement Process

Faculty & Support Staff

Subjects taught:
Industrial Management, Producation Management, Industrial Safety, Environmental Engineering, Chemical Process Technology, Refinery Science & Engineering, Refinery Engineering and Management

Research: 5

Technical Management: 38 Services

Consultant to Carbon Clean Solutions Pvt. Ltd.

Honorary Professors of Chemical Engineering

DR. RAVI MARIWALA,
Managing Director
Scientific Precision Pvt. Ltd.
Mumbai 400 079

SHRI K.V. SHESHADRI, BPCL

MRS. V. LAXMI, Petrofac

PROFESSOR ARUN MUJUMDAR, NUS, Singapore.

Shri D.K. Chaudhari
System Engineer,
M.Sc.

Mr U A Paralkar
Jr. Engineer
M.Sc. (Physics)

Ms. Urmila Sathe
Jr. Engineer
B.Tech. (Electronics)

Dr Sopan Bhamare
Sr. Tech. Asst.
Ph. D. (Physics)(Resigned)

Mr. Mahesh Harkar
Sr. Tech. Asst.
M Sc (Chemistry)

Mr. S A Mane
Sr. Tech . Asst.
M.Sc. (Chemistry)

Mrs R M Pillai
Sr. Grade Stenographer
SSC

Shri P P Bhole
Lab Assistant
SSC

Mr. Vishal Bhambid
Laboratory Assistant
B. Sc.

Mr Rahul Mohite
Laboratory Assistant
B. Sc.

Mr. Lalit Sawant
Laboratory Assistant
B. Sc.

Mr S D Shigwan
Lab attendant
IX Std.

Mr K S Sawant
Lab attendant
IX Std(VRS)

Mr J P Gavahane
Lab attendant
X Std.

Mr Ganesh Masale
Lab attendant
HSC + ITI

Research Degrees Completed

Ph. D.

S.N.	Name of Students	Topics	Guide
1.	Gangar Bijal V.	Preparation of Monodispersed MOX Microspheres	ABP
2.	Nimbalkar Vijay M.	Nano-Crystalline TiB2 Particulate Reinforced Al-Alloy Metal Matrix Composites	KVM
3.	Shaikh Latif J.	Studies in Crystallization Process and Crystal Morphology	ABP
4.	Pawar Balu Vishnu	Organic Transformations in Micellar Media	SSB
5.	Tamhane Tushar V.	Design and Scale of Annular Centrifugal Extractors	JBJ
6.	Ghumare Anant K.	Synthesis, Characterization and Applications of Cationic Gemini Surfactants	SSB
7.	Gandhi Mayurkumar S.	Studies in Heat Transfer with and without Phase change using Advanced Experimental Techniques and Computational Fluid Dynamics	JBJ
8.	Dicholkar Deepak D.	Steam Pyrolysis of Amides and Analysis of Products	VGG
9.	NaikNimbalkar Vishvas	Thermal Hydraulics of Liquid Pools	AWP
10	Varavadekar Jayesh S.	Technology for Products from Lignocellulosic Biomass	AML
11.	Chaughule Vivek A.	Studies in Formulation, Stabilization and Drying of Biological Products	BNT
12.	Gaware Tushar J.	Studies in Dehydration of Food and Biological Products	BNT
13	Bhanwariya Saroj	Biotransformation and Enzymatic Synthesis of Peptides	AML
14.	Mali Nilesh A.	Exergy Based Analysis of Novel Power Cycles	SSB
15	Singh Rajesh Kumar	Studies in Interfacial Science : Dynamic Aspects	SSB
16.	Durve Ameya P.	Mixing in Liquid Pools	AWP
17.	Prajapati Hiral N.	Heat Transfer Equipment Design	AWP
18.	Kolhe Nitin S.	Hydrodynamics of Extraction Systems	VKR
19.	Chokashi Kalpesh P.	Advanced Drying Techniques for Biological Products	BNT
20	Rupa S. Madyal	Design of extractants for actinides and minor actinides	VGG

M. CHEM. ENGG. AND M TECH (BPT)

S.N.	Name	Research supervisor	Title of Research Project	Year
1	Atul Bari	Vaidya P.D.	Studies in CO_2 removal processes	2009-11
2	Bakade Suchit Vasantrao	Thorat B.N.	Hydrodynamic study of agitated fluid bed dryer	2009-11
3	Balaji Ethiraj	Patwardhan A.V.	Ecologically Based Life-Cycle assessment of Solar Electricity	2009-11
4	Bari Atul Harishchandra	Vaidya P.D.	Studies In Process Development	2009-11
5	Baxi Pranav Bhargav	Pandit A.B.	Steam driven hybrid cavitation for cellulose digestion	2009-11
6	Bhadange Yogesh Ashok	Rathod V.K.	Studies Of Extraction From Natural Ingradients	2009-11
7	Chandak Rohankumar Shirish	Bhagwat S.S.	Analysis of Power Cycle Efficiency Employing Multicomponent Working Fluid	2009-11

Research Degrees Completed

S.N.	Name	Research supervisor	Title of Research Project	Year
8	Chavan Vivek Prakash	Gogate P.R.	Intensification of Chemical Synthesis by using Cavitation	2009-11
9	Dabhade Shrihari Dnyandeo	Gaikar V.G.	Biomass Conversion :Thermal Conversion of Bagasse	2009-11
10	Dhumal Vivek Dilip	Bhagwat S.S.	Application Of ANN in Non-linear chemical Process	2009-11
11	Elizabeth Joseph	Vaidya P.D.	Studies in CO_2 removal processes	2010-11
12	Farakte Raosaheb Ananda	Yadav G.D.	Modified Heteropoly Acids on Novel Nano Support	2009-11
13	Gaddamedi Parasuram	Rathod V.K.	Studies in pulsed Sieve plate extraction column	2009-11
14	Ganeshkumar Patil	Vaidya P.D.	Studies in CO_2 capture using novel amines	2010-11
15	Ghayal Dnyaneshwar Appasaheb	Rathod V.K.	Study in biodisel production	2009-11
16	Hatkar Ujwal Nanaji	Gogate P.R.	Ultrasound Enhanced Crystallization	2009-11
17	Hule Pritam Vijay	Mathpati C.S.	Computational study of fluid dynamics by mixing equipments	2009-11
18	Jangle Amit Vidyanand	Pandit A.B.	Understanding and improving the life cycle of multilayer food packets	2009-11
19	Khan Humanaaz Javed	Pandit A.B.	Synthesis of Palladium Nanoparticle for Catalytic Applications	2009-11
20	Koralkar Naval Vishwanath	Mathpati C.S.	Heat transfer of molten salts	2009-11
21	Kulkarni Rahul Kashinath	Pandit A.B.	Catalytic Applications of Palladium Nanoparticles	2009-11
22	Kumbhar Shwetali Mahadeo	Lali A.M.	Conversion of holocellulose to chemicals	2009-11
23	Kunghadkar Akhil Sukiram	Lali A.M.	Conversion of Lignin to Chemicals	2009-11
24	Lakhapati Ravindra Vitthal	Gaikar V.G.	Intensification and Optimization of Process for producing HMF from Fructose	2009-11
25	Malhotra Sneha Rakesh	Patwardhan A.V.	Studies in membrane separation.	2009-11
26	Mohitkar Ganesh Haridas	Patwardhan A.W.	Gas Entrainment In Contactors	2009-11
27	Nagose Nilesh Ramraoji	Patwardhan A.V.	Study of organic reactions in ionic liquid	2009-11
28	Nande Sachin Baliram	Gaikar V.G.	Technical, Economic & Environmental analysis of decentralised & small scale energy system.	2009-11
29	Patankar Saurabh Chandrakant	Yadav G.D.	Development of novel multifunctional catalyst for tandem green synthesis	2009-11
30	Patil Ganeshkumar Narayan	Vaidya P.D.	Study of gas purification	2009-11
31	Patil Vikas Madhukar	Marathe K.V.	Process intensification in ultrafiltration	2009-11

Students Awards

S.N.	Name	Research supervisor	Title of Research Project	Year
32	Pawar Nilesh Atmaram	Gaikar V.G.	Adsorption of CO2 by polymeric resin (chitosen)	2009-11
33	Sangle Jyoti Suresh	Marathe K.V.	Removal of metal ions from wastewater using ultrafitration	2009-11
34	Santosh Shirke	Vaidya P.D.	Studies in wet oxidation	2010-11
35	Shinde Pramod Tatyaba	Patwardhan A.W.	Flow distribution studies in heat exchangers	2009-11
36	Shirke Santosh Nathuram	Vaidya P.D.	Studies in environmental engineering.	2009-11
37	Singh Ashishkumar Anjanikumar	Yadav G.D.	Role of microwaves in cascade engineered catalytic rections	2009-11
38	Suryawanshi Abhijeet Dattatray	Patwardhan A.W.	Mixing with Jets	2009-11
39	Tamgadge Atul Gautam	Mathpati C.S.	Effect of Marangoni Convection on Mass Transfer at Fluid-Fluid Interface.	2009-11
40	Thalange Vinayak Channappa	Thorat B.N.	Numerical & experimental analysis of selected drying systems	2009-11
41	Tidke Vaibhav Baburao	Thorat B.N.	Design & Flow Characterisation of Solar Dryers	2009-11
42	Tushar Meshram	Marathe K.V.	Aqueous waste management of steel industry	2009-11

STUDENTS AWARDS

S.N.	Name	Award
1	Dr. Sathe Mayur Jayant	ICT Golden Jubilee Innovative Ph.D. Thesis Award
2	Dr. Biradar Prashant	Dr. K. H. Gharda Best Thesis Award
3	Dr. Devendra Leena	Ambuja Cement Best Ph.D. (Sci.) Thesis Award
4	Shri Chavan Vivek	O.P. Narula Best M. Chem. Engg. Thesis Award
5	Mr. Joshi Ravi Kira	ICT Alumni Association Prize for Best Student from penultimate year
6	Mr.Agarwal Kshitij Sanjay	Late Dr. (Mrs.) Mahalaxmi Bhagwat Prize for F.Y.B. Chem. Engg. (Sem. II) Students Highest Marks in 'Engineering Applications of Digital Computers
7	Mr. Gangar Mitesh Laxmichand	Professor V. G. Pangarkar Award for Highest Marks "Separation Processes" at final yearB.Chem.Engg. (Sem VII & VIII)
8	Mr. Choksi Tej Salil & Ms. Shete Meera Hemant	Professor R.A. Rajadhyaksha Award for Highest Marks in "Chemical Reaction Engineering" at T.Y. Chem. Engg.
9	Mr. Ahuja Vishal Rajkum	S.B. Pandya Prize for Highest Marks in Home Paper, B.Chem. Engg
10	Mr. Ahuja Vishal Rajkumar	Ambuja Cement Best Home Paper Award
11	Mr. Menon Bharat Kumar & Ms. Moharir Manjiri Arun	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.

12	Ms. Sarode Apoorva Dattatraya	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
13	Mr. Tandon Aman Ramesh	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
14	Mr. Tandon Aman Ramesh	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
15	Ms.Shah Mansi Sanjeev	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
16	Mr. Kamat Pritish Milind	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
17	Mr. Chhoga Hanoz Rohinton	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
18	Mr. Gangar Mitesh Laxmichand	Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg.
19	Mr. Gangar Mitesh Laxmichand	Chimanlal Choksi Memorial Prize, Highest marks in each year, Chem.Engg
20	Mr. Choga Hanoz Rohinton	Chimanlal Choksi Memorial Prize, Second Highest marks in each year
21	Mr. Panyaram Srikanth Krisha & Ms. Tanksale Rohini Girish	Shree Mangalam Drugs & Organics Ltd. Endowment for securing highest marks in M.Chem.Engg
22	Mr. Gangar Mitesh Laxmichand	Manjula Bagmal Parikh Memorial Foundation Prize for standing first in the Final Year B.Chem.Engg.
23	Ms. Jain Deeksha	Professor M.A. Nabar Prize for Students who stand first in Chemistry
24	Mr. Gopal Arjun & Mr. Jayaraman Ashish & Mr. Sampat Spoorva & Mr. Kamat Kartik	Contect-2011-12' Award
25	Mr. Pratik Krishnan	Dr. B.M. Khadilkar Ex- Student and Friends Endowment Fund for First Y.B. Chem. Engg. Student securing Highest Marks in Organic Chemistry
26	Bindwal Ankush & Patil Pankaj	Best PhD student Award, ICT
27	Shri Mithesh Gangar	I. I. Ch. E.'s Acharya P. C. Ray Best Home Paper
28	Shri Kalpesh P. Chokashi	Council of Scientific & Industrial Research HRD Group
29	Tej Chokshi, Mansi Shah, Sankat Sabnis, Ravi joshi	Best Students Award, ICT
30	Shri Bhavin S. Dedhia	Best M. Tech Thesis Award of the Institute
31	Virendra K. Saharan, Rekha B.N., Yogesh H. Shinde, Mandar P. Badve, Aditi D. Rathod	IInd Pize G.E. Edison Challenge 2011
32	Mansi Shah, Tej Choksi, Sanket Sabnis	N.R. Kamath Memorial Trophy, IIChE
33	Saurabh C. Patankar	Award of ISTE-IPCL award for Best M. Chem. Engg. Thesis
34	Yogesh Shinde	Outstanding Young Engineer Award (IIChE)

Ph. D. RESEARCH PROJECTS (ONGOING)

S.N.	Research Scholar	Project	Guide
1	Kharatmol Pramod	Chromatographic separation and purification of biomolecules	ABP
2	Naik Apurva	Cavitation in sodium pumps	ABP
3	Rathod Aditi	Modeling and experimental validation of sodium cold trap	ABP
4	Saharan Virendra	Destruction of pollutants using hydrodynamic cavitation	ABP
5	Parekh Vishal	Fermentative production of sophorolipids from natural lipids	ABP
6	Pandit Ninad	Biotransformation and downstream processing of Industrially useful compounds from natural sources	ABP
7	Shinde Yogesh	Energy optimization studies in heating and cooking devices	ABP
8	Rekha B. N.	Process intensification of anaerobic digestion	ABP
9	Machelwar Shirish	Disinfection of potable water using hydrodynamic cavitations in hand pump	ABP
10	Shingade Sunil	Design and scale up of continuous process and equipments system for MOX	ABP
11	Bari Atul H.	Studies in sono-crystallization kinetics	ABP
12	Nagula Karuna	Process intensification using enzymatic hydrolysis and various process intensification techniques	ABP
13	Abhijit Rathi	Desing and scale-up of enzymatic biotransformations	AML
14	Swapnali S Gujarathi	Purification of inclusion body proteins	AML
15	Lalit Khot	Metabolic engineering of organisms for fermentation products: in silico approach	AML
16	Sunil Sunkara	Strategies for Improvement in Fermentation Productivity	AML
17	Mandrita Chatterjee	Purification of therapeutic proteins	AML
18	Sandip Kadam	Designing of coupled processes for downstream processing of biomolecule	AML
19	Vinod Amritkar	Separation and Purification of natural products using QBD	AML
20	Rajeshwar Valte	Reactor designs for intensifying enzymatic hydrolysis	AML
21	Sachin Birhade	Reaction engineering of enzymatic hydrolysis of Holocellulose	AML
22	Swapnali Gujarathi	Isolation and purification of inclusion body proteins	AML
23	Mukesh Pednekar	Oligosaccharide production and purification	AML
24	Gaurangi Deore	Quality based designing for purification of monoclonal and polyclonal antibody	AML
25	Prashant Kumar	Downstream processing and characterization of proteins	AML
26	Gautam Degwekar	Process Intensification of Alcohol Production	AML
27	Yogesh D. Jagdale	Studies in membrane separation systems	AVP
28	Yogesh H. Mirage	Studies in computational fluid dynamics	AVP
29	Dnyaneshwar Bhand	Extraction and isolation of byproduct from natural resources	AVP
30	Kulkarni Vaishali	Microbial Colorants	AVP
31	Bhalerao Machhindra Sukhadeo	Study of organic reactions and catalysis	AVP

Research Degrees Ongoing

S.N.	Research Scholar	Project	Guide
32	Choughule Yogesh	Studies in ionic liquid with organic reactions	AVP
33	Kulkarni Ajit	Experimental and computational investigation of gas entrainment	AWP
34	Sona C.S.	Thermal hydraulic investigations on various coolants	AWP
35	Vernekar Prasad	Membrane Separation Processes	AWP
36	Gaware Tushar J.	Studies in Dehydration of Food and Biological Products	BNT
37	Chaughule Vivek A.	Studies in Formulation, Stabilization and Drying of Biological Products	BNT
38	Chokashi Kalpesh P.	Advanced Drying Techniques for Biological Products	BNT
39	Shingare Shyamala P.	Studies in Dehydration of Biomass and Cellulosic Materials	BNT
40	Jangle Rahul D.	Downstream Processing of Biopharmaceutical Products	BNT
41	Aware Rahul S.	Drying Technology - Process Development and Value Addition	BNT
42	Deulgaonkar Sushil U.	End Technologies in the Manufacturing of Pharmaceuticals and Biomolecules	BNT
43	Tidke Vaibhav B.	Technocommercial feasibility studies of sustainable technologies	BNT
44	Moreshwar P. Hude	Utilization of Renewable Resources for the Production of Biofuels, Bioenergy and Biopharmaceuticals	GDY
45	Somnath D. Shinde	Chemo and Biocatalysis in Synthesis of Valuable Intermediates and Drugs	GDY
46	Rahul Kumbhar	Self Assembly of Tethered Nanoparticles	GDY
47	D. Saravanan	Selectivity Engineering in Biotransformation of Industrial Relevance	GDY
48	Pooja Ashish Thorat	Novel Approaches in Biopharmaceutical Synthesis & Separations	GDY
49	Prasad Mandade	Evaluating the Life Cycle Environmental and Economic Aspects of Tropical Biofuels	GDY
50	Sandeep Pawar	Selectivity Engineering in Pharmaceutical and API Synthesis using Enzymatic Reactions	GDY
51	Satish Kabra	Valorisation of Biomass through Catalysis and Process Intensification	GDY
52	Manish Tiwari	Process intensification using micromodels & novel catalysts	GDY
53	Patankar Saurabh C.	Novelties in Cascade Engineered Catalytic Reactions	GDY
54	Anmol Thakare	Study of aqueous-phase hydrogenation reactions	GDY
55	Kamble Manoj	Biotransformation using supported catalyst	GDY
56	Rane Chinmay v.	Design of Crystallizers: Prediction of Crystal Morphology Distribution using CFD and Population Balance Modeling.	JBJ
57	Shah Manish s.	Trnsport Phenomena in Gas Jet Reactor: Flow Visualization and CFD Modeling	JBJ
58	Khan Zoheb	Transport Phenomena in Multiparticle Systems: Flow Visualization and CFD Modeling	JBJ
59	dasgupta kinshuk	Characterisation and synthesis and carbon-nano tubes using cvd and nuijed	JBJ

S.N.	Research Scholar	Project	Guide
60	Gauthaman G.	synthesis-property relationship and characterisation and synthesis of polyester based carbon composites	JBJ
61	Vibhandik Amar	Study in Environmental Engineering for treatment of aqueous effluent	KVM
62	Vibhandik Amar	Study in Environmental Engineering for treatment of aqueous effluent	KVM
63	Chavan Karan	Process intensification in Hembrane Separation	KVM
64	Sutar P. N.	Studies in gas purification	PDV
65	Bindwal A. B.	Studies in heterogeneous reactions	PDV
66	Jain Anandkumar	Study of aqueous-phase hydrogenation reactions	PDV
67	Maddekari Ganesh	Oleochemicals from waste vegetable oil	PRG
68	Ramireddy Kirankumar	Intensification of physical processes by ultrasound: atomization, crystallization, emulsification	PRG
69	Gole Vitthal	Process intensification of chemical processing using cavitational reactor	PRG
70	Bagal Manisha V.	Waste water treatment using hybrid treatment schemes based on cavitational reactors	PRG
71	Patil Pankaj	Pesticide degradation using Advanced oxidation processes	PRG
72	Subhedar Preeti	Intensification of enzymatic reactions using sonochemical reactors	PRG
73	Ramteke Lokeshkumar	Improvement in biological wastewater treatment systems	PRG
74	Takalkar Gorakshnath	Simulation & Experimental Study of heat Based Refrigeration System	SSB
75	Sonchal Bhushan	Studies in dynamics of Surfactant aggregation	SSB
76	Tongaonkar Jitendra	Studies in Interfacial Science: Dynamics & Stabilisation of Foam	SSB
77	Dengle Vrushali	Production and Characterisation of Sophorolipids	SSB
78	Meshram Pawan	Studies in Adsorption Kinetics of Surfactant – Modified Clay and Biosorbent	SSB
79	Pakhale Swapnil	Fermentation and purification of biomolecules	SSB
80	Kalsulkar Sudarshan	Bioadsorbent beased on surgarcane bagasse	SSB
81	Joshi Amogh	VLE of HIx (HI+H20+I2) system	VGG
82	Bote Pravin P	Novel Reactor Design for synthesis of different oleochemicals	VGG
83	Thaore Vaishali B.	Investigation of Red oil explosion	VGG
84	Singh Meena B.	Under approval	VGG
85	Heer Parminder Kaur	Engineering Analysis of Renewable Energy and Chemical Resources	VGG
86	Arora Jyotsna	Separation of metal ions using molecular modeling and process intensification of the macrocyclic ligands	VGG
87	Koli Aditya	Production of Valuable Chemicals from carbohydrates	VGG
88	Ansari Khursheed B.	Renewable biofuels from ligno-cellulosic and waste biomass	VGG

Research Degrees Ongoing

S.N.	Research Scholar	Project	Guide
89	Dabir Tasneem Omer	Process Intensification of Biopolymer Derivatization and Studies in Molecular Self-Assembly	VGG
90	Yogeshwar R. Dubhashe	Process intensification for organic synthesis	VGG
91	Labrath Yogita	Isolation and extraction of natural constituents and process intensification	VGG
92	Singh Meena Banshlochan	Molecular Dynamic simulation of metal ions & Synthesis of crown ethers	VGG
93	Vishal Sawant	Design and Synthesis of Aza-Crown Ether for Selective Extraction of Actinide and Lanthanides Ion from Nuclear Waste	VGG
94	Singh Mani Lal	Thermophysicochemical properties of organic extractants	VGG
95	Charpe Trupti W.	Studies in Extraction and Purification of Natural Ingredients	VKR
96	Lade Vikesh	Studies in Liquid-liquid Extraction	VKR
97	Avhad Devchand N.	Studies in production and purification of biomolecule	VKR
98	Vetal Mangesh	Studies in extraction and purification of bioactive	VKR
99	Kamble Pradnya	Studies in Waste Water Treatment	VKR
100	Jadhav Sachin	Studies in water treatment technologies	VKR
101	Gadipelly Chandrakanth Rajanna	Process intensification in defluoridation Technology	VKR
102	Kulkarni Vrushali	Extraction of Active constituents from Natural Sources	VKR
103	Gadalkar Sagar	Process intensification in Drug Synthesis	VKR
104	Waghmare Govind V.	Studies in utilisation of natural to valuable products	VKR
105	Niphadkar Sonali	Preparation and Purification of biomolecule	VKR
106	Sneha R Bansode	Studies in enzyme catalysed reaction	VKR

M.CHEM. ENGG.

S.N.	Name	Research supervisor	Title of Research Project	Year
1	Balki Aniket	Vaidya P.D.	Study of catalytic hydrogenation reaction	2010-12
2	Bhosale Ghanshyam S.	Gogate P.R.	Wastewater treatment by using combination of cavitation and chemical oxidation.	2010-12
3	Chavan Ankush Anand	Bhagwat S.S.	Exergy Analysis of Absorption Cycles	2010-12
4	Dastane Gaurav G.	Pandit A.B.	Design & CFD Simulation of hydrodynamic cavitation using non-circular venturies	2010-12
5	Iyer Shilpa Santosh	Bhagwat S.S.	Application of artificial neural networks in chemical engineering	2010-12
6	Jadhav Santosh Ghanshyam	Vaidya P.D.	CO2 capture by Reactive absorption	2010-12
7	Jawale Rajashree Hiraman	Pandit A.B.	AOP's for biorefractory pollutants	2010-12
8	Khokrale Ashish B.	Mathpati C.S.	Thermodynamic optimization of chemical process using ASPEN	2010-12

S.N.	Name	Research supervisor	Title of Research Project	Year
9	Malhotra Karan	Mathpati C.S.	Simulation of Batch and Continuous Process Plant using ASPEN PLUS	2010-12
10	Meshram Tushar C.	Marathe K.V.	Aqueous waste management of steel industry	2010-12
11	Pakhare Achyut Dnyanoba	Rathod V.K.	Mass Transfer study in pulsed extraction column	2010-12
12	Patil Amar Lahu	Gogate P.R.	Treatment of pharma wastewater by chemical oxidation processes	2010-12
13	Patil Gajanan	Thorat B.N.	Design of industrial solar dryer	2010-12
14	Patle Chetan	Patwardhan A.W.	Thermal mixing	2010-12
15	Pawar Pratik K.	Patwardhan A.V.	Study of reactions in presence of ionic liquids	2010-12
16	Pise Viplav Hari	Yadav G.D.	Selectivity of Nanoengineered Catalyst for Cascade Reaction	2010-12
17	Potdukhe Shraddha Vikas	Yadav G.D.	Conversion of biomass into value added chemicals using catalysis	2010-12
18	Rathi Noopur	Gaikar V.G.	Photoswitchable hydrotropes for crystallization processes	2010-12
19	Shaha Suraj S.	Gogate P.R.	Intensification of cavitation reactions reactions by using gaseous additives	2010-12
20	Shere Inderdip P.	Rathod V.K.	Hydrodynamic in pulse column	2010-12
21	Shettigar Suma	Marathe K.V.	Treatment of aqueous wastewater in stainless steel industry by membrane process	2010-12
22	Shinde Avinash Shankar	Thorat B.N.	Design of Industrial spray dryer	2010-12
23	Shivashanker Shefali	Patwardhan A.W.	Heat Transfer and Flow Distribution in Heat Exchangers	2010-12
24	Sinha Dhruvi	Lali A.M.	Algae growth kinetics and modeling	2010-12
25	Sontakke Pallavi P.	Gaikar V.G.	Synthesis using microwave techniques	2010-12
26	Srikanth P.V.K.	Patwardhan A.W.	Gas entrainment in liquids	2010-12
27	Tanksale Rohini	Patwardhan A.V.	Membrane Seperation and mathematical modelling	2010-12
28	Umale Ritesh	Vaidya P.D.	Study of wet air oxidation	2010-12
29	Wankhede Prashil C.	Rathod V.K.	Study of liquid liquid extracting system	2010-12
30	Sumit Dubey	Singh S. K.	Estimation And Verification Of Critical Point Properties of Nano Confined Fluids From Vapor Liq Eqb. Calculations: Molecular Simulation Approach	2011-13

S.N.	Name	Research supervisor	Title of Research Project	Year
31	Priyank Tiwari	Dalvi V. H.	Applications of Thermoacaustics	2011-13
32	Rahul Paliwal	Mathpati C. S.	Synthesis of Neutrally Buoyant Particles For Flow Visualisation	2011-13
33	Sachin Chavan	Thorat B. N.	Recent Advances In Particle Granulation And Drying Technology	2011-13
34	Sandeep N. Gosavi	Patwardhan A. W.	Membrane Separation Processes	2011-13
35	Naresh Hanchate	Patwardhan A. W.	Solar Steam Generator	2011-13
36	Bhavesh D. Gajbhiye	Mathpati C. S.	Corrosion Studies With Molten Salts At High Temperture	2011-13
37	Swapnali Ramesh Vanjiwale	Thorat B. N.	The Role Of Particle Engineering In Dyestuff And Pigment Technology	2011-13
38	Rohit Kishore Chaudhary	Yadav G. D.	Hydrogenation of glucose to sorbitol using nanocatalyst	2011-13
39	Anuj Salvi	Vaidya P. D.	Study Of Carbon Dioxide Capture By Reactive Absorption	2011-13
40	Madhavi Bende	Marathe K. V.	Development In Membrane Separation Processes	2011-13
41	Snehal Pawar	Marathe K. V.	Modelling And Simulation In Ultrafiltration	2011-13
42	Amogha Vijayadwhaja	Pandit A. B.	Kinetics Of Grain Cooking	2011-13
43	Sanjeev Kumar	Gaikar V. G.	Microwave Assisted Reactions In Homogeneous & Heterogeneous Systems: Hydrocarbon Oligomerisation	2011-13
44	Akash Pagare	Rathod V. K.	Studies in Liquid-Liquid Extraction: Aqeuous two phase separation	2011-13
45	Parag Kulkarni	Gaikar V. G.	Microwave Assisted Reactions In Homogeneous & Heterogeneous Systems; Simulation Of Physical Systems.	2011-13
46	Anand P. Chavan	Gogate P. R.	Intensification Of Chemical Processing Using Cavitational Reactors	2011-13
47	Aditya Pandey	Pandit A. B.	Process Intensification For Biogas Generation	2011-13
48	Yuvaraj Bharamu Patil	Vaidya P. D.	Study Of Catalytic Hydrogenation Reactions	2011-13
49	Avinash Suryakant Mhetre	Gogate P. R.	Mapping Of Cavitational Activity In Large Scale Sonochemical Reactors	2011-13
50	Shrikant Shesherao Mete	Patwardhan A. V.	Studies In Liquid-Liquid Separation	2011-13
51	Swapnil Rameshrao Chaudhari	Patwardhan A. V.		2011-13
52	Rasika Dhamankar	Nemade P. R.	Development Of Inexpensive Sensors For Estimation Of Glucose And Other Molecules	2011-13
53	Rohit Babel	Bhagwat S. S.	Binary Working Fluids For Energy Cycles: Experimental Aspects	2011-13
54	Abhijeet Kshirsagar	Bhagwat S. S.	Binary Working Fluids For Energy Cycles: Simulation Aspects	2011-13
55	Anita Sharma	Yadav G. D.	Hydrogenation of succinic acid to gamma buytrolactone	2011-13
56	Wasique Khan	Rathod V. K.	Process Intensification Studies In Spin Disc Reactor	2011-13
57	Lokesh Selokar	Rathod V. K.	Design Aspect In Liq- Liq Extraction Equipment	2011-13
58	Rahul Patil	Pandit A. B.	Biomass stove experiments	2011-13

M. TECH. (BPT)

S.N.	Student	Research Supervisor	Research project	Year
1	Sharad deshmukh	Lali A. M.	Isolation and purification of biomolecule from natural source	2010-12
2	Sandip Pagar	Lali A. M.	Production and purification of enzymes from yarrowia lipolytica	2010-12
3	Sanket Jadhav	Gogate P. R.	Cell disruption and Intensification of enzymatic reactions using cavitational reactors	2010-12
4	Kishor Galani	Rathod V. K.	Study in isolation and purification of biomolecules	2010-12
5	Nilesh Patil	Yadav G. D.	New Insight in Bioseperation of Racemic Mixture	2010-12
6	Vikram Kadam	Yadav G. D.	Development of novel support for bioprocess intensification	2010-12
7	Aditi Nagardeolekar	Pandit A. B.	Effect of type of shear on deactivation of enzymes.	2010-12
8	Romy Garg	Thorat B. N.	Purification and Drying of Biomolecules	2010-12
9	Revati Chavan	Rathod V. K.	Studies on fermentative production , isolation ,purification and analysis of a biomolecule	2010-12
10	Vijaya chandgude	Bhagwat S. S.	Separation & purification of biomolecule using surfactant	2010-12
11	Kavita Patil	Gogate P. R.	Bio-processing for production of Omega fatty acids	2010-12

12	Dhanashree Panadare	Rathod V. K.	Studies in waste water treatment: Removal of copper from model and industrial waste water using microalgae.	2010-12
13	Pranav Joshi	Yadav G. D.	Biotransformation of Industrial relevances: Chiral alcohols by enzymatic preparation	2011-13
14	Ashwini Purohit	Gogate P. R.	Cavitation based extraction and purification of biomolecules	2011-13
15	Ashish Yadav	Pandit A. B.	Biochar and its applications	2011-13
16	Pramod Sawant	Yadav G. D.	Biotransformation of limonene to alpha terpineol	2011-13
17	Bhushan Mulay	Rathod V. K.	Studies in enzyme applications	2011-13
18	Hanumant Raskar	Rathod V. K.	Studies in downstream processing of biomolecules	2011-13
19	Sharad Ugale	Rathod V. K.	Separation and purification of natural product	2011-13
20	Sweta Shanker	Gogate P. R.	Intensification of enzymatic reaction using ultrasound	2011-13
21	Soban Ahmad Faridi	Gogate P. R.	Improvement of bioreactor	2011-13
22	Siddharth Jain	B.N.Thorat	Separation, purification and drying of biomolecules	2011-13

M. TECH. GREEN TECHNOLOGY

S.N.	Name of Student	Research Supervisor	Research Topics	Year
1	Thakare Dinesh D.	Yadav G.D.	Synthesis of bimetallic nanoparticles and its catalytic applications for selective hydrogenation of organic compounds	2010-12
2	Singh Rohitkumar G.	Yadav G.D.	Synthesis of novel supported mixed metal salt of heteropolyacids and its catalytic application for tetrahydropyranylation of benyl alcohol	2010-12
3	Gharat Nikhil N.	Rathod V.K.	Studies in waste management	2010-12
4	Lanjekar Kavita J.	Rathod V.K.	Studies in enzyme-catalyzed reactions	2010-12
5	Rajput Shailendrasingh	Vaidya P.D.	Studies in catalytic hydrogenation	2010-12
6	Joseph Elizabeth J.	Vaidya P.D.	Studies in CO_2 capture (Three year course)	2010-13
7	Kharbade Sampannakumar D.	Yadav G.D.	Selectivity in hydration and acetoxylation of monoterpenes using UDCaT series of catalysts	2011-13
8	Shejale Ashish D.	Yadav G.D.	Rearrangement of longifolene to isolongifolene and 7-isopropyl-1,1-dimethyl tetralin using novel solid acids	2011-13
9	Adulkar Tejal V.	Rathod V.K.	Enzyme application in wastewater treatment	2011-13
10	Kuperkar Vishakha V.	Rathod V.K.	Enzyme applications (Enzyme catalyzed reactions)	2011-13
11	Mahindrakar Komal V.	Rathod V.K.	Studies in wastewater treatment by using banana peel as an adsorbent	2011-13

12	Khan Azam W.	Vaidya P.D.	Studies in advanced oxidation processes	2011-13
13	Margi Nikhil H.	Vaidya P.D.	Studies in wet air oxidation	2011-13

Seminars

(B CHEM ENGG)

S.N.	Name	Topic	Guide
1	A. Mehra	Construction Chemicals: plasticizer, superplasticizer, and water reducing agents	SSB
2	P. Hiremath	Flow in plate heat exchangers	SSB
3	R. I. Kodapanakkal Rabia	Paper de-inking formulations	SSB
4	S. R. Bhavsar	Starch based polymers	SSB
5	S. S. Kendre	Defoamers: Formulations and applications	SSB
6	T. S. Chokshi	Paraffin wax emulsion: Formulation and applications	SSB
7	A. B. Agrawal	Density functional theory for classical systems	VHD
8	A. N. Shah	Water in CO2 emulsions	VHD
9	A. S. Kale	Free energy perturbation methods	VHD
10	N. G. Bhat	Solar thermal power plants	VHD
11	P. J. Salunkhe	Thermal Storage	VHD
12	P. R. Nair	Scaled particle theory	VHD
13	R. R. Bajaj	Line tension	VHD
14	A. A. Rehlan	Biocolours-A new generation additive for industries	VGG
15	A. R. Gawade	Modern air pollution control Technologies	VGG
16	M. P. Jain	Microstructural modeling of branched-block & linerblock polyolefins	VGG
17	N. K. Kokate	New polymerization Technology for advanced materials	VGG
18	P. P. Patel	Emulsification using microfiltration membranes	VGG
19	R. T. Kaul	Concentrating solar power and solar ponds	VGG
20	S. Lanke	Sustainable Hydrogen production from next generation nuclear plants	VGG
21	A. A. Potdar	Purification techniques for cheaper raw materials such as waste cooking oil for synthesis of biodiesel.	PRG
22	G. L. Raut	Oscillatory baffles reactors for waste water treatment	PRG
23	K. Veerkumar	Intensification of heat transfer using ultrasonic Irradiation	PRG
24	M. D. Yadav	Sonochemical intensification of gas-liquid mass transfer	PRG
25	P. J. Shah	Recent advances in purification of salts containing organic contaminants	PRG
26	P. M. Kamat	Recent advances in treatment schemes for pharmaceutical industry wastewaters	PRG

S.N.	Name	Topic	Guide
27	S. T. Jadhav	Fenton like processes for waste water treatment	PRG
28	A. Daga	Modeling enzymatic depolymerization of biopolymers	AML
29	A. H. Shah	Modeling and simulation of Open channel flow	AML
30	A. T. Sadhale	Quantitative physic-chemical description of Lignocellulosic Biomass	AML
31	B. S. Sule	Modeling of Unsteady state Ultrafiltration	AML
32	P. G. Ramnani	Mathematical Modeling of Growing plant	AML
33	V. V. Pandere	Strategies for transformation of lignin to aromatic building blocks	AML
34	Y. Borse	Development of new measuring elements for effecting process analytical technologies	AML
35	D. D. Sharan	Comparsion of FO & RO for water treatment	KVM
36	M. M. Mancharla	Simulation and modeling of nanophotonics	KVM
37	O. R. Lokare	Production and applications of polysilicons	KVM
38	P. Arak	Advances in NDT methods for quality assurance and performance assessment of materials	KVM
39	S. R. Das	Polymer composites for photocatalysis	KVM
40	M. P. Karandikar	Steel foams	KVM
41	A. Goyal	Sliding mesh methodology for stirred tank simulation	CSM
42	I. Powar	CFD studies of steam Jet Ejector	CSM
43	N. R. Modi	Fuzzy control of Bioreactors	CSM
44	N. S. Patki	Corrosion of molten salts (FLiNak) at high temperature	CSM
45	S. V. Pakhare	Design aspects for bioreactors for shear sensitive applications	CSM
46	V. V. Dhote	Recent advances in volatile organic compounds recovery	CSM
47	S. S. Nehete	Design aspect of raceway pond bioreactor	CSM
48	A. S. More	High temperature oxide superconductors	PRN
49	A. V. Ambulkar	Organic semiconductors	PRN
50	I. A. Fursule	Advances in use of graphene as electrodes as photovoltaics	PRN
51	K. P. Joshi	Thermochemical hydrogen production using copper chloride cycle	PRN
52	P. Bhattacharya	Advances high density electricity storage technologies for mobile applications	PRN
53	R. R. Shah	Use of thorium for generation of Nuclear energy	PRN
54	M. D. Malatpure	Microbial disinfection of ballast water	ABP
55	M. S. Shah	Developments in flow and pressure control devices	ABP
56	P. A. Wagh	Electron beam based polymer curing techniques	ABP
57	P. Chari	Diffused aeration in biological treatment	ABP
58	R. Jacob	Population balance models in crystallizer studies	ABP
59	V. S. Narkhede	Developments in continuous dryers	ABP
60	J. G. Shah	Recent advances in ion Chromatography	AVP

S.N.	Name	Topic	Guide
61	Malani A A	Recent advances in epoxidation of vegetable oils and its applications	AVP
62	N. S. Ghotane	Recent advances in synthesis and applications of ceramic membranes	AVP
63	R. Dosouza	Recent advances in modeling of membrane reactors	AVP
64	R. K. Bhavsar	Recent advances in reverse osmosis	AVP
65	R.B. Parekh	Recent advances in synthesis and applications of ionic liquids	AVP
66	Y. Garg	Recent advances in synthesis and applications of Water-splitting photocatalysis	AVP
67	A. A. Kognole	Synthesis and characterization of zeolite membranes	AWP
68	A. R. Samant	Complexation of TODGA with metal ion	AWP
69	C. M. Shah	Solar Chimney	AWP
70	D. A. Chavan	MOC for high temperature (grater than 1000C) applications	AWP
71	M. M. Bhole	Synthesis of Hollow fibres	AWP
72	N. K. Tukaria	Pervaporation using Zeolite membranes	AWP
73	S. Janardanan	Modeling of Bioreactor for algae production	AWP
74	C. M. Kothari	Purification of biodiesel prepared from oils	VKR
75	D. R. Ingale	Packed pulsed column for liquid-liquid extraction	VKR
76	K. B. Shetty	Shetty Enzymatic hydrolysis of oil	VKR
77	K. G. Panchagalle	Recent developments in heat transfer enhancement techniques	VKR
78	S. P. Thakare	Supercritical fluid for extraction of natural ingradients	VKR
79	S. Pradhan	Bioleaching of heavy metals	VKR
80	A. V. Rathod	Progress and challenges in controlling automotive exhaust gas emissions	PDV
81	M. H. Shete	Dynamic methods for catalytic kinetics	PDV
82	M. P. Mehta	Renewable fuels by catalytic hydrodeoxygenation	PDV
83	N. B. Patil	Development of liquid fed fuel cells	PDV
84	S. S. Shanbhag	Catalytic nitrate removal from water	PDV
85	S. V. Lanka	Catalytic processes in vitamin synthesis	PDV
86	C. R. Shah	Interfacial Reactions vis-a-v-s Bulk Reactions in Liquid–Liquid and Micellar Processes	GDY
87	G. M. Nabar	Relevance of organosilicon in biotechnology	GDY
88	P. D. Sawant	Nanoparticle network for drug delivery	GDY
89	S. N. Bonde	Polyurea based heterogeneous catalysts and their applications	GDY
90	S. R. Nirgide	Reactive polymer flow in porous media	GDY

M CHEM ENGG

S.N.	Student's name	Project-II	Guide
1	Sharma Anita Gopalkrishna	Treatment option of cyanide containing liquid effluent waste	ABP
2	Kulkarni Parag	Slurry viscosity and the particle size distribution; theoretical and experimental studies	ABP
3	Mete Shrikant Shesherao	Multicomponent continuous chromatography	AML
4	Bende Madhavi Pradeep	Quantifying photosynthetic efficiencies	AML
5	Chavan Anand Panditrao	Mathematical modelling of membrane-based separation	AVP
6	Vanjiwale Swapnali Ramesh	Ionic liquid-based separations	AVP
7	Chaudhari Swapnil Rameshrao	Pervaporation using ceramic membranes	AWP
8	Pagare Akash Prakash	Modelling of solar energy based hot water/steam generators	AWP
9	Kshirsagar Abhijeet Bandu	Flow visualisation studies with mass transfer at fluid-fluid interface	CSM
10	Pawar Snehal Kisan	Design aspects of high shear mixers used in food, polymer and pharmaceutical industry	CSM
11	Selokar Lokesh Sahasram	Novel oxidation catalysts for biomass conversion into value added products	GDY
12	Dhamankar Rasika Rajendra	Perspective and prospects of graphene as catalyst supports	GDY
13	Khan Wasique Habib	Functionalised membranes for the waste water treatment	KVM
14	Paliwal Rahul Ramesh	Production and applications of polysilicon	KVM
15	Pandey Aditya Arvind	Methods for hydrogen storage	PDV
16	Chaudhary Rohit Kishore	Direct liquefaction of biomass	PDV
17	Chavan Sachin Ramesh	Thermochemical methods for lignin conversion into value-added products	PDV
18	Tiwari Priyank Abdhhesh Kumar	Ultrasound induced Emulsification: recent advances and applications	PRG
19	Patil Rahul Sadashiv	Combined process intensification using microwave and cavitational reactors	PRG
20	Salvi Anuj Prakash	Modelling membrane transport for protein filtration by artificial neural networks	PRN
21	Amogha Char V V	Design of novel materials for separation & energy storage applications: Molecular modelling as a guiding tool	SKS
22	Hanchate Naresh Dattatray	Overall energy efficiency of biofuel production	SSB
23	Kumar Sanjeev Ram Prakash	Quantitative environmental impact assessment of chemical processes	SSB
24	Babel Rohit Ratan	Prins cyclisation reactions	VGG
25	Gajbhiye Bhavesh Dharmraj	Arsenic removal from aqueous solutions: Role of solution chemistry	VGG
26	Gosavi Sandeep Namdeo	Machines without moving mechanical devices	VHD
27	Patil Yuvaraj Bharamu	Application of enzyme in biodiesel production	VKR
28	Dubey Sumit Maroti	Design aspects of themosiphon reboilers	VKR
29	Mhetre Avinash Suryakant	Biomass for removal of heavy metal from waste water	VKR

(M TECH BPT)

S.N.	Name of Student	Project -II	Guide
1	Vijay Maranholkar	Techniques for preservation of agricultural products	ABP
2	Ashwini Purohit	Biosynthesis of Natural Products	VKR
3	Roger D'souza	Cytochrome P-450 enzymes and its phenotyping	GDY
4	Bhushan Mulay	Effect of ultrasonic radiation on fuel cell	PRG
5	Hanumant Raskar	Enhancement of sludge properties using ultrasonication pretreatment	PRG
6	Sharad Ugale	Intensification of biogas production from agricultural waste by using alternative energy sources	PRG
7	Sweta Shanker	Lipase catalysed synthesis of polymers	VKR
8	Soban Ahmad Faridi	Extraction of valuable algal product	VKR
9	Anuradha Gadkar	Enzymatic immobilization using Novel polymers	GDY

M. TECH. (GREEN TECHNOLOGY)

S.N.	Name of Student	Project -II	Guide
1	Wasnik Ashwinkumar R.	Manganese containing catalysts based on nanoporous silica	GDY
2	Waval Aniket S.	New catalyst materials for ammonia synthesis	GDY
3	Margi Nikhil H.	Biosynthesis of nanoparticles	VKR
4	Parikh Rutu S.	Role of enzymes in treatment of waste	VKR
5	Patil Bhumika P.	Supercritical fluids for synthesis	VKR
6	Shejale Ashish D.	Ethanol from carbon dioxide hydrogenation - opportunities and challenges	PDV
7	Shejwalkar Sagar S.	Hydrogen economy	PDV
8	Khandekar Rajendra V.	Chemical recycling of carbon dioxide	PDV

B. CHEM. ENGG. HOME-PAPER (2011-2012)

S.N.	Name of the student	Topic	Guide
1	A. A. Kognole	Design a plant to manufacture 1 TPD dilauryl dimethyl ammonium chloride	SSB
2	A. A. Potdar	Design a plant to manufacture 100 TPD of Methyl diethanolamine	SSB
3	A. N. Shah	Design a plant to manufacture resorcinol at a suitable scale	SSB
4	P. P. Patel	Design a plant to manufacture dimethyl amino propyl amine at suitable scale	SSB
5	P. R. Nair	Design a plant to manufacture p-chloro-o-nitroaniline at suitable scale	SSB
6	V. V. Pandere	Design a plant to manufacture 10 TPD of dioctyl sulfosuccinate	SSB

S.N.	Name of the student	Topic	Guide
7	A. H. Shah	Design a plant to Manufacture 10 tpd of perfluorooctylmethaacrylate	VDH
8	D. R. Ingale	Design a plant to Manufacture 10 tpd fused quartz	VDH
9	M. D. Yadav	Desing a plant to Manufacture 1 tpd dry basis of napthalene sulphonate formaldehyde condensate (concrete grade)	VDH
10	P. M. Kamat	Design a plant to manufacture 100 tpd Sodium bisulfite	VDH
11	S. S. Nehete	Design a plant to Manufacture 1 tpd monocrystalline Silicon	VDH
12	S. V. Pakhare	Design a plant to Manufacture 10 tpd hydrogen fromsulphur-iodine cycle	VDH
13	A. T. Sadhale	Design a plant to produce ferrous sulphate from scrap iron	VGG
14	B. S. Sule	Design a plant for extraction of silica from burnt paddy husk to process 100 TPD of husk.	VGG
15	D. D. Sharan	Design a plant to recover chtin and proteins from Prawnshell waste (100 TPD) from marine processing plant	VGG
16	G. L. Raut	Design a plant for extraction of (-) hydroxycitric acid, Garcinol and Anthocyanin pigments from Garcinica (10 TPD of feed)	VGG
17	I. S. Powar	Design a plant to manufacture 60 TPA of Glucosamine Hydrochloride and 30 TPA of Glucosamine sulphate	VGG
18	N. B. Patil	Design a plant for recovery of nickel from spent Tansy-Nickel catalyst (5 TPD of waste)	VGG
19	A. A. Malani	Design a plant to manufacture 10 TPD sulfamic acid	PRG
20	A. Daga	Design a plant to manufacture 100 TPD 2,4 Dinitrophenol	PRG
21	A. Goyal	Design a plant to manufacture 10 TPD of dichlorvos	PRG
22	A. S. More	Design a plant to manufacture 50 TPD of Gatifloxacin	PRG
23	M. M. Mancharla	Design a plant to manufacture 100 TPD of Diclofenac Sodium	PRG
24	S. R. Das	Design a plant to manufacture 100 TPD of p-toulene suflonic acid	PRG
25	D'Souza R. L.	Design a plant for recovery of sodium hydroxide from Kraft lignin solution produced at 100 TPD	AML
26	K. P. Joshi	Design a plant for separation and recovery of butanol, actone, and ethanol from their 6:3:1 mixture produced from fermentation at 50 TPD	AML
27	N. R. Modi	Design a plant to manufacture furfural and hyroxymehtyl furfural from 50 TPD of lignocellulosic Biomass	AML
28	O. R. Lokare	Design a plant for extraction of fatty oils from wet oil bearing algal biomass produced at 100 TPD	AML
29	S. R. Bhavsar	Design a plant for production of syn-gas from 100 TPD lignocellulosic biomass to ethanol by fermentation	AML

S.N.	Name of the student	Topic	Guide
30	V. V. Dhote	Design a plant for conversion of 1000 TPD of fatty oil to green diesel	AML
31	A. R. Samant	Design a plant to manufacture 1 TPD acrylamideacrylic acid copolymer	KVM
32	A. V. Ambulkar	Design a plant to manufacture 100 TPA of Erythorbic Acid	KVM
33	K. Verrakumar	Design a plant to manufacture 100 TPA iso propyl alcohol	KVM
34	M. D. Malatpure	Design a plant to manufacture 1 TPD tolytriazole	KVM
35	P. S. Chari	Design a plant to manufacture 500 TPA Cupric sulphate	KVM
36	R. R. Bajaj	Design a plant to manufacture 100 TPA of methyl ethyl Ketoxime	KVM
37	I. A. Fursule	Design a plant to manufacture 100 TPA of Pyridoxine	CSM
38	M. S. Shah	Design a plant to manufacture 300 TPA of Di-pentene	CSM
39	N. K. Kokate	Design a plant to manufacture 400 TPA of phenyl acetic acid	CSM
40	P. Bhattacharya	Design a plant to manufacture 200 TPA of chloromethyl chloroformate	CSM
41	R. Jaocob	Design a plant to manufacture 1000 TPA of Glyoxal	CSM
42	R. T. Kaul	Design a plant to manufacture 100 TPA of nicotinamide	CSM
43	Y. Garg	Design a plant to manufacture 1000 TPA of phydroxycinnamic acid	CSM
44	K. Shetty	Design a plant to manufacture 10 TPA alkaline protease	PRN
45	P. A. Wagh	Design a plant to manufacture 1 tpd Sodium lauryl ether sulfate	PRN
46	P. J. Shah	Design a plant to manufacture 1 tpd 2-ethylhexyl palmitate	PRN
47	R. B. Parekh	Design a plant to manufacture 100000 TPA of ethylene from nonpetrochemical feed stock	PRN
48	S. Janardanan	Design a plant to manufacture 1000 TPA synthetic camphor	PRN
49	S. P. Thakare	Design a plant to manufacture 10 TPD of anatase	PRN
50	S. T. Jadhav	Design a plant to manufacture 10 TPD of chrome oxide	PRN
51	C. M. Kothari	Design a plant to manufacture 10 TPD of Benzoyl peroxide	ABP
52	C. M. Shah	Design a plant to manufacture 5 TPD of Magnetic grade iron oxide	ABP
53	J. G. Shah	Design a plant to manufacture 1 TPD of Tungsten carbide	ABP
54	N. G. Bhat	Design a plant to manufacture 1 TPD of Butemen by air oxidation	ABP
55	N. K. Turakhia	Design a plant to manufacture 1500 TPD calcium Lactate	ABP
56	P. G. Ramnani	Design a plant to manufacture 10 TPD of Novolac Resin	ABP
57	P. J. Salunkhe	Design a plant to manufacture 500 TPA of aluminium hydroxide from waste sludge	ABP
58	D. A. Chavan	Design a plant to manufacture 100 TPA alphamethyl naphthalene	AVP
59	G. Nabar	Design a plant to manufacture 100 TPA pchlorobenzhydryl chloride	AVP
60	M. P. Mehta	Design a plant to manufacture 1000 TPA of picric acid	AVP

S.N.	Name of the student	Topic	Guide
61	N. S. Patki	Design a plant to manufacture 100 TPA n-phenyl piperazine	AVP
62	S. Pradhan	Design a plant to manufacture 1000 TPA of mnitroacetophenone	AVP
63	S. R. Nirgade	Design a plant to manufacture 100 TPA of methyl naphthol	AVP
64	Y. L. Borse	Design a plant to manufacture 100 TPA of Diethyl Ketone	AVP
65	A. V. Rathod	Design a plant to manufacture 10000TPA of lauryl alchohol ethoxylates	AWP
66	C. R. Shah	Design a plant to manufacture 5 TPD of dibenzyl disulfide	AWP
67	K. G. Panchagalle	Design a plant to manufacture 50000 TPA of styrene Oxide	
68	M. H. Shete	Design a plant to manufacture 10000 TPA methyl cinnamaldehyde	
69	M. P. Karandikar	Design a plant to manufacture 50000 TPA of ethylene glycomonoethyl ether	AWP
70	S. S. Kendre	Design a plant to manufacture 10000 TPA of ethyl methaacrylate	AWP
71	S. S. Shanbhag	Design a plant to manufacture 1 TPD of ephedrine	AWP
72	A. B. Agrawal	Design a plant to manufacture 50 TPA of Tetrahydropyrimidine	VKR
73	N. S. Ghotane	Design a plant to manufacture 4,6 dintro-o-Cresol	VKR
74	P. D. Sawant	Design a plant to manufacture p-aminobenzoic acid	VKR
75	P. R. Arak	Design a plant to manufacture 200 TPD of phosphoricacid	VKR
76	S. N. Bonde	Design a plant to manufacture 25 TPA of ammonium benzene sulphonate	VKR
77	S. V. Lanka	Design a plant to manufacture 15 TPA of pamoic acid	VKR
78	A. Mehra	Design a plant to manufacture 5000 TPA of Guaiacol	PDV
79	A. R. Gawade	Design a plant to manufacture 5000 TPA of diphenyl Carbonate	PDV
80	Kodapanakkal R. I.	Design a plant to manufacture 5000 TPA of Glycidol	PDV
81	M. M. Bhole	Design a plant to manufacture 10000 TPA of propane	PDV
82	T. S. Choksi	Design a plant to manufacture 1000 TPA of Lauryl Alcohol	PDV
83	V. S. Narkhede	Design a plant to manufacture 10000 TPA C1-C6 alkanes by aqueous-phase processing of Bio-oil	PDV
84	A. A. Rehlan	Design a plant to manufacture 5 TPD of pmethoxypheylacetic acid of pharmaceutical grade	GDY
85	A. S. Kale	Design a plant to manufacture 5000 TPA of cyclopentane	GDY
86	M. P. Jain	Design a plant to manufacture 10 TPD of R-(2)- ethylhexanol	GDY
87	P. B. Hiremath	Design a plant to manufacture 20 TPD of tetralin	GDY
88	R. K. Bhavsar		

Workshop & Training on Chemical Engineering Labo-ratory

Since the Department of Chemical Engineering at ICT has one of the best equipped laboratories demonstration of various principles of chemical engineering, it was decided to conduct regular workshops cum training sessions for teachers from other universities in Maharashtra and India on how to develop, run and maintain such a facility. The hands-on experience gained in a chemical engineering laboratory course is invaluable in cultivating the physical intuition in students that is essential for success as a chemical engineer and researcher. This was the fifth such workshop organized under the UGC-NRC. The first workshop dealt with Advanced Concepts in Chemical Engineering showcasing the research areas being actively pursued by the faculty of Department of Chemical Engineering at the institute was organized in February 2009. On suggestion of various participants, a three day workshop based on the Chemical Engineering Laboratory was also organized in May 2009. This workshop was very successful and participants appreciated the workshop. However, due to limited seats, we could not accommodate many of the interested faculty members from other institutes. Also a need was felt to increase the duration of the workshop and hence a five day workshop had organized in June 2010. During feedback session, many faculties suggested to repeat this five days workshop every year. Based on the feedback and limitation of seats for each workshop, it was decided to repeat the workshop this year again. The participants of the workshop were teachers from various Chemical Engineering Colleges/Institutes/Universities in Maharashtra and other states. The Workshop conducted for five days comprised of lectures and various hands on experiments sessions conducted by the faculty in-charge of the respective topic. Each and every session was continued over by a Hands on Experiment Session which was conducted in the Laboratory by the faculty himself and the participants were demonstrated with the experiments discussed in the theory sessions. Also, many of the participants enthusiastically took interest in the experiments and performed themselves. The concept of demonstration laboratory was highlighted to the participants and resource materials for the 40 odd demonstration experiments were given to the participants, in addition to lecture notes.

Main Coordinator: Dr. V. K. Rathod (Associate Professor, Dept. of Chemical Engg.)

Duration: 5 days (28th September 2011 to 2nd October 2011)

Number of Participants: 16

Molecular Modelling and Simulation (ICTMM-2012)

UGC has established a Networking Resource center in the Department of Chemical Engineering. This workshop on molecular modeling and simulation, 'ICTMM Workshop 2012' is organized to fulfill one of the objective of the UGC Networking resource centre, by training the faculty and research scholars of various institutes/universities in this emerging and promising field of molecular modeling and simulation. The workshop was meant to enable researchers and students with a background in science and engineering to start careers in the emerging field of molecular simulations. Molecular simulations enable fundamental investigations of a wide range of natural phenomena. Our ability to model physical, chemical and biological processes at the atomic and molecular levels has progressed rapidly over the last three decades due to developments in computer processing speeds, efficient

algorithms and molecular models. The workshop intended to give participants an insight into these developments. The workshop had lecture sessions followed by practice sessions. Participants were introduced to equilibrium and nonequilibrium statistical mechanics, Monte Carlo methods and molecular dynamics techniques by well known experts from academia and industry.

Main Coordinators: Dr. S. K. Singh (DAE-ICT Scientist A, Dept. Chemical Engg.) Dr. V. H. Dalvi (R. A. Mashelkar Assistant Professor, Dept. Chem. Engg.)

Duration: 5 days (28th January 2012 to 1st February 2012)

Number of Participants: 26

Future Manufacturing Co-ncepts for Chemical & Pharmaceutical Industry (FuMaChem)

UGC-Networking Resource Centre, Department of Chemical Engineering and Bayer Technology Services India have jointly organized a workshop on Future Manufacturing Concepts for the Chemical and Pharmaceutical Industry (FuMaChem). The objective was to promote resource-efficient production technologies developed in various countries. These concepts are already under implementation in new chemical industries. Fumachem workshop created awareness about such technologies in various sectors as well as in academics. The speakers were a part of the FuMaChem network funded by the German Ministry of Education and Research (BMBF) under the campaign "Green Production Technologies" as well as eminent scientists working in this area in India. Distinguished speakers with high level of expertise and knowledge from BTS GmbH, INVITE GmbH, Ehrfeld BTS, TU Dortmund University, Institute of Chemical Technology and National Chemical Laboratory shared their experiences. The workshop had a blend of participants from the industry (approximately 30) and the academics (10). Along with the presentations another attraction was the live demo model of the Microreactor system carrying out a neutralization experiment on day one and an emulsification experiment on day two. The technology leaders such as HiTechZang and HNP Microsysteme also displayed their products and interacted with the participants to answer their queries.

Main Coordinators: Dr. C. S. Mathpati (Assistant Professor Dept. Chemical Engg.) Ms. JyotiPawar (Bayer Technological Solutions BTS, India)

Duration: 2 days (3rd February 2012 and 4th February 2012)

Number of Participants: 10 (academia), 30 (industry)

Alternative Sustainable Processes

Since the Department of Chemical Engineering has a number of researchers who have considerable experience in green, sustainable and alternative energy and chemical processes, a workshop introducing several cutting-edge technologies was warranted. Several useful topics (such as green chemistry, sustainable development, effective utilization of our indigenous resources, solar cells, fuel cells, chemical recycling of carbon dioxide, hydrogen from biomass, ionic liquids, nanotechnology, liquid membranes, energy and exergy engineering, sustainability reporting, and effective solid-waste management) were covered during this workshop. The undergraduate chemical engineering laboratory, research laboratories in the department and the DBT-ICT Centre were displayed to the participants. Besides, a brain-storming session was conducted; here the participants were given small assignments on relevant themes.

Main Coordinator: Dr. P. D. Vaidya (V.V. Mariwala Assistant Professor, Dept. of Chemical Engg.)

Professor A. V. Patwardhan (Professor, Dept. Chemical Engg.)

Duration: 5 days (14th March to 18th March 2012)

Number of Participants: 18

Workshop on "Soft Cond-ensed Matter: Structures, characterization & applic-ations."

Soft matter is a concept which covers polymers, liquid crystals, colloids, amphiphilic molecules, glasses, granular and biological materials. One of the fundamental characteristic features of soft matter is that it exhibits various mesoscopic structures originating from a large number of internal degrees of freedom of each molecule. Due to such intermediate structures, soft matter can easily be brought into non-equilibrium states and cause non-linear responses by imposing external fields such as an electric field, a mechanical stress or a shear flow

The growth of interest in this non-traditional area is fed not simply by the inherent interest of such systems but also by their enormous technological importance and the increased stimulation arising from the area's overlap with biological subdisciplines. This workshop is the first of the series on soft matter and aimed to introduce researchers to different aspects of soft condensed matter, from techniques of characterization to engineering applications.

Main Coordinator:
Professor V G Gaikar, Professor & Head, Department of Chemical Engg.)

Other Coordinators: Dr. Parag Nemade and Dr. Neetu Jha (DAE-ICT Scientists, Department of Chemical Engg.)

Duration: 4 days (6th June to 9th June 2012)

List of Lectures delivered by Visitors

Name of Visitor/ Invitee/ Affiliation	Endowment	Visiting Date (S)	Lecture – Title
Professor P. Balaram, Indian institute of Science, Bangalore	Shri B.S. Rajpurohit Visiting Faculty	17th December 2011 at 4.00 p.m	The Richness of Chemistry
Garry L. Rempel, FRSC, FCIC, PhD, (University of British Columbia) University of Waterloo	UGC-CAS visiting Fellow	From 1st January to 5th January 2012	Green Processes
Flora Ng, University of Waterloo	UGC-CAS visiting Fellow	From 1st January to 5th January 2012	Catalytic processes
Professor Arvind Varma	Dr. B.D. Tilak visiting Fellow	14th March, 2012	New Methods of generating hydrogen from Boron and water for Fuel cell applications
Dr. Anand Prakash, Department of Chemical and Biochemical Engineering, The University of Western Ontario London, Ontario, Canada	CAS-SAP visiting fellow	26th March 2012	Biofuels, Design of multiphase reactors: Slurry bubble columns
Dr. Neeraj Agrawal, Post Doc at MIT	-	29th March, 2012	Molecular computational tools for designing and screening of stable antibodies
Dr. Guruswamy Kumaraswamy	Golden Jubilee visiting fellow	25th April, 2012	Using Surfactant Mesophases To Assemble Polymers and Nanoparticles
Professor Shripad Revankar, WCU visiting Professor Pohang University of Science and Technology, South Korea and Professor and Director of Multiphase and Fuel Cell Research Labs, PURDUE UNIVERSITY	UGC-SAP Fellow	19th May 2012	Accident Analysis of Hydrogen Plant Coupled to Nuclear Plant
Dr. Aman Desai, Senior Scientist with Dow Chemicals, USA	UGC-SAP Fellow	14th February 2012	Process Intensification via Reaction Telescoping and A Universal Asymmetric Catalytic Aziridination System
Professor K. Kesava Rao, de-partment of Chemical Engineering, IISc., Bangalore	Professor G. P. Kane Visiting Professor	22nd January 2012 - 28th January 2012	(i)Demonstration experiments in chemical engineering (ii)Chemical engineering and the mitigation of fluorosis (iii)Engineering aspects of living systems
Dr. Shyam B. Khatau, Johns Hopkins University	-	18th January 2012	A distinct phenotypic signature for pancreatic cancer metastasis
Professor Arun S. Mujumdar *Fellow, ASME, CIC, IES, IIChE Department of Mechanical Engineering & Director, Mineral, Metal & Materials Technology CentreNational University of Singapore	-	23rd December, 2011	Perspective on Globalization, Innovation and R & D
Dr Sanjeev Naik	-	12th December, 2011	Sustainability:Chemicals & Materials in the
Dr. Kiran Kolwankar	-	19th October, 2011	Applications of Statistical Mechanics
Professor Anil Kumar, Department of Chemistry, IIT-B	-	30th September 2011	Magical Science'
Dr. Sagar Gadewar, President – CEO, Green Yug, LLC 861 Ward Drive, Santa Barbara ,CA 93111 California, USA	-	5th October, 2011	Rapid Process Development
Professor Deepak Kunzru, Department of Chemical Engineering.IIT, Kanpur	-	29th August, 2011	Monoliths for Multiphase Reactions
Professor K.S. Gandhi, Indian Institute of Science, Bangalore	-	6th June 2012	Introduction to Rheology of Complex Fluids
Dr. Prakash Mehta, Xydex India Ltd	-	6th June 2012	Polymeric Materials and Organosilicon Chemistry
Dr. Janaky Narayanan, IIT, Mumbai	-	6th June 2012	Small angle x-ray scattering technique to study protein crystallization, protein-surfactant complexation and protein polymerization
Dr. V.K. Aswal, BARC, Mumbai	-	6th June 2012	Small-Angle Neutron Scattering from Soft Matter and Biology

List of Lectures delivered by Visitors

Dr. Rochish Thaokar, IIT, Mumbai	-	6th June 2012	Industrial applications of Electrohydrodynamics
Mr. V. Hariharan and Sameer Pai, BlueStar Ltd	-	7th June 2012	Latest technological developments in the field of Scanning Electron Microscopes and Transmission Electron Microscopes and Atomic force microscopes
Dr. Rabibrata Mukherjee, IIT-Kharagpur	-	7th June 2012	Soft Lithography: Some Recent Developments in Beyond the Master Patterning
Dr. Guruswamy Kumarswamy, NCL, Pune	Golden Jubilee visiting fellow	8th June 2012	What is the size of a polymer chain? Introductory concepts in polymer sciencs
Dr. Pankaj Doshi, NCL, Pune	Golden Jubilee visiting fellow	8th June 2012	Computational Modeling of Melt Spray Congeal Process
Dr. Ashish Orpe, NCL, Pune	Golden Jubilee visiting fellow	8th June 2012	Dynamics of flowing dense granular media
Dr. P.A. Hassan, BARC		8th June 2012	Soft Nanotechnology: Present and Future
Professor (Dr) Gehlawat	UGC-CAS Visiting Fellow	16th March, 2011	Safety in Chemical Plant
Professor (Dr) Sarbajit Banerjee, Department of Chemistry, University at Buffalo, The State University of New York Buffalo	UGC-CAS Visiting Fellow	26th June 2012	Materials Chemistry and Nanoscale Electronics

List of ongoing sponsored projects

S.N.	Project Sponsor	Govt/ Pvt	Title	Fund in INR
S S Bhagwat				
1	British Petroleum International	Private	Refrigeration utilizing waste Heat as energy input.	54 lacs
2	Tri-Diagonal Solutions (TDS)	Private	Forming and aeration	8 lacs
3	DST	Govt	Inter droplet Interactions in microemulsions	14 lacs
4	IGCAR	Govt	Alternate methods/solvents for dissolution:(a) Methane sulphonic acid derivatives for dissolution & electrowinning, (b) Sonochemical method for dissolution of ThO2.	25 lacs
5	BRNS	Govt	Development of foam formulation	16 lacs
6	NTPC	Private	Improvement of Turbine Cycle Heat Rate Through Multi-component Ammonia Liquor Absorption Engine (MALAE)	71 lacs
V G Gaikar				
1	Department of Atomic Energy / Knowledge Based Engineering Centre	Govt	Design of solvent and extractant by molecular modeling for heavy metals	84.4 lacs
2	Department of Atomic Energy / Knowledge Based Engineering Centre	Govt	Experimental determination of H2-I2-HI-H2SO4 vapor-liquid equilibria	48.4 lacs
4	Indira Gandhi Centre for Atomic Research (IGCAR)	Govt	Studies in Runaway reactions	24.725 lacs
5	Indira Gandhi Centre for Atomic Research (IGCAR)	Govt	Studies on steam pyrolysis of a CHON Amide as a waste solvent management method	24.725 lacs
6	Indo-European Collaboration, Department of Science and Technology (DST-AMCOS)	Govt	Advanced materials as CO2 removers: A computational study of CO2 sorption Thermodynamics and kinetics	79.88 lacs
P R Gogate				
1	Department of Science and Technology, Govt. of India, New Delhi	Govt	Development of novel treatment strategies for treatment of water containing pesticides	10.35 Lacs
2	University Grants Commission, New Delhi	Govt	Process Intensification of emulsification and atomization	8.25 Lacs
A.M.Lali				
1	Department of Biotechnology	Govt	DBT-ICT centre for energy biosciences	24.80 crores
2	Department of Biotechnology	Govt	Development of Bioscience & Biotechnology for next generation biofuel	1.96 crores
3	Department of Biotechnology	Govt	Patent Cell (Intellectual Property Management & Technology Commercialization Unit under (BIRAP) DBT, Govt. of India)	76.7 lacs

List of ongoing sponsored projects

S.N.	Project Sponsor	Govt/ Pvt	Title	Fund in INR
4	Department of Biotechnology	Govt	Extraction and purification of Sorghum seed protein for delayed delivery of bioactivities	101.32 lacs
5	Bio-Rad laboratories USA	Private	BioRad-MUICT Initiative on Adsorptive and Chromatographic Separations for Biotech and Allied Industry	22.50 lacs
6	Pepsico Inc, USA	Private	Assisted Extraction, Isolation and Scalable Chromatographic Purification & Biotransformation of Active Components from Plants/Herbs	98.17 lacs
7	General Mills	Private	Value Added Products from Milling By-products	$ 45000
8	General Mills	Private	Value added Products from GMI Vegetable Waste streams	$ 45000
9	Chemtrols India Ltd.	Private	Development of process for production of Lactic acid and Poly-lactic Acid	40 lacs
Marathe K.V.				
1	Department of Science and Technology (DST)	Govt	Removal of Fluoride from concentrated stream generated during membrane separation of ground water." Water Technology Initiative program,. 2010-2013	17 lacs
Mathpati C. S.				
1	DAE	Govt	Thermal hydraulic studies related to coolants for new generation reactors	80 lacs
Pandit A.B.				
1	Department of Atomic Energy under the scheme of Knowledge based Engineering	Govt	Characterization of cavitation phenomena and its applications in solid-liquid mass transfer operations	88.9 lacs
2	Jawaharlal Nehru Center for Science Society – UGC	Govt	Development of novel cavitation based treatment schemes for water disinfections	25 lacs
3	Department of Science and Technology under India Australia Fund for Scientific and Technological cooperation	Govt	Advanced oxidation processes for the degradation of organic pollutants in aqueous environment	9 lacs
4	Indira Gandhi Center for Atomic Research (IGCAR)	Govt	Design of Sodium Cold-Trap	23.82 lacs
5	Indira Gandhi Center for Atomic Research (IGCAR)	Govt	Role of Cavitation and its Prevention in Sodium Pump	24.8 lacs
6	Indira Gandhi Center for Atomic Research (IGCAR)	Govt	Preparation of Mono-Disperse MOX Sphere	23.82 lacs
7	Indira Gandhi Center for Atomic Research (IGCAR)	Govt	Scale up of MOX Precipitation	21.25 lacs

S.N.	Project Sponsor	Govt/ Pvt	Title	Fund in INR
8	Department of Science & Technology, Government of India	Govt	Development of nano container for anticorrosive properties of coatings	12.00 lacs
9	DAE-BARC	Govt	Cavitation aided multiphase process: Extraction	
Patwardhan A. V.				
1	DAE (Co-Investigator)	Govt	Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane	72.4 lacs
Patwardhan A.W.				
1	IGCAR/DAE	Govt	Thermal Mixer Design	24.2 lacs
2	BARC/DAE	Govt	Mixing aspects in $UF_6 – H_2$ reaction	86.8 lacs
3	IGCAR/DAE	Govt	Flow Distribution in Inlet Plenum of Steam Generators	24.9 lacs
4	DAE (Co-Investigator)	Govt	Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane	72.4 lacs
V K Rathod				
1	DAE-ICT	Govt	Removal of dissolved TBP from aqueous solutions	
Thorat B. N.				
1	Rajiv Gandhi Commission For Science and Technology, Government of Maharashtra	Govt	Industrial Scale Dehydration of Agricultural and Marine Food Products: Value Addition to Farm Products	197. 39 lacs
2	University Grant Commission (UGC)	Govt	Design and Optimization of Agitated Fluid Bed Drying	8.91 lacs
3	Black Rose	Private	Drying of Monomers and Polymers	3.0 lacs
Vaidya P. D.				
1	DAE-BARC	Govt	Hydrogen – Thermochemical	
2	University Grants Commission (Major Research Project)	Govt	CO_2 capture using novel amines	7.45 Lakhs
3	Carbon Clean Solutions Pvt. Ltd	Private	Novel solvents for CO_2 capture from flue gas	8 lakhs
G D Yadav				
1	Council of Scientific and Industrial Research (CSIR)- NMITLI	Govt	Bio-Glycerol based Chemicals	88 lacs
2	Oil and Natural Gas Corporation (ONGC)	Govt	Preliminary Process Analysis for Cu-Cl Thermochemical	79 lacs
3	Indira Gandhi Centre for Atomic Research (IGCAR)	Govt	Preparation of Inorganic Nano-membranes of various Pore Sizes	25 lacs
4	DAE-BARC	Govt	Self assembly of tethered nanoparticles: 'Macromolecule' for tailored nano-materials	

S.N.	Project Sponsor	Govt/ Pvt	Title	Fund in INR
Joshi J.B.				
1	BRNS	Govt	Development of ACE	159.14 lacs
2	DAE-BARC	Govt	Passive Decay Heat Removal system of AHWR	221.00 lacs
3	DAE-IGCAR	Govt	Fumeless Dissolution in Thermosiphon and Rotary Dissolver	
4	DAE-BARC	Govt	CFD simulation of reactive (combustion) submerged gaseous jet under steady and unsteady state conditions	
5	DAE-BARC	Govt	Studies in Synthesis and Characterization of Carbon Nanotubes by Catalytic Chemical Vapor Deposition	
6	DAE-BARC	Govt	Studies on High Strength Carbon Fibre Composites	

Placement

B. CHEM. ENGG.

S.N.	Name	Company	Package in lakhs
1	Riki B Parekh	UOP	8
2	Chintan Shah	RIL	6
3	Pratik Sawant	BASF	5
4	Swati Das	RIL	6
5	Yavnish Garg	IOCL	8
6	Maulik P.Mehta	RIL	6
7	Rabia I Kodapanakkal	L & T	4.5
8	Manish Jain	RIL	6
9	Rohin T. Jacob	RIL	6
10	Shetty Kaanti.B	RIL	6
11	Nirjara Turakhia	KPG	4.5
12	Amish Mehra	UOP	8
13	Srikanth Lanka	RIL	6
14	Akshay Sadhale	RIL	6
15	Vibhor Dhote	Evalueserve	4.5
16	Anirudh Ambulkar	KPG	4.5
17	Rohit Kaul	RIL	6
18	Parth Shah	BASF	4.5
19	Manasee Karandikar	L & T	4.5
20	Vivek Narkhede	BPCL	9.8
21	Dhanashri R. Ingale	RIL	6
22	Snehal Bonde	TOYO	4
23	Jeet G Shah	RIL	6

24	Panchakshari Hiremath	VVF	3.3
25	Saurabh Nehete	RIL	6
26	Akshay Daga	CADBURY	4.5
27	Neha Ghotane	RIL	6
28	Omkar R Lokare	TOYO	4
29	Sumit V. Pakhare	IOCL	8
30	Pallab Bhattacharya	TOYO	4
31	Indrajit Powar	VVF	3.3
32	Shrikrushna P Thakare	IOCL	8
33	Ryan D'souza	Evalueserve	4.5

M. CHEM. ENGG. (2010-12)

S.N.	Name	company	Package in Lakhs
1	Shivashanker Shefali	L&T	4.11
2	Pise Viplav Hari	L&T	4.11
3	Suraj Shaha	Evalueserve	5.5
4	Rohini Tanksale	Biocon	5
5	Patle Chetan Bhojraj	Aker power gas	3.24
6	Iyer Shilpa Santhosh	Aker power gas	3.24
7	Sinha Dhruvi	Aker power gas	3.24
8	Shinde Avinash Shankar	Galaxy surfactant	5
9	Wankhede Prashil Chandrabhan	Galaxy surfactant	5
10	Karan Malhotra	UOP	8
11	Pakhare Achyut D.	Technoforce	4.5
12	Bhosale Ghanshyam Sarjerao	Technoforce	4.5
13	Chavan Ankush Anant	UPL	5
14	Jadhav santosh Ghanshyam	Gadhia solar	4.5
15	Ashish Khokrale	Gadhia solar	4.5
16	Potdukhe Shraddha Vikas	Praj industries	5

Graduates opting for higher studies

PhD IN CHEMICAL ENGINEERING

Name	University	Location
Mansi Shah	University of Minnesota	Minneapolis
Meera Shete	University of Minnesota	Minneapolis
Shankali Pradhan	Purdue University	West Lafayette
Tej Choksi	Purdue University	West Lafayette
Pritish Kamat	Purdue University	West Lafayette

Praful Nair	University of Pennsylvania	Pittsburgh
Sunder Janardhan	Texas A and M University	College Station, Texas
Kedar Joshi	Lehigh University	Bethlehem
Gauri Nabar	Ohio State University	Columbus
Prasad Patel	University of Pittsburgh	Pittsburgh
Mayur Macharla	University of Connecticut	Storrs
Pankaj Ramnani	University of California	Riverside
Neil Patki	Colorado School of Mines	Golden
Abhishek Kognole	University of Kentucky	Lexington
Ishan Fursule	University of Kentucky	Lexington

MASTERS IN CHEMICAL ENGINEERING

Name	University	Location	Course
Anisha Rehlan	University of Michigan	Ann Arbor	MS (Thesis)
Chirag Kothari	University of California	Berkeley	MS- Product Development
Chaitanya Shah	Carnegie Mellon University	Pittsburgh	MS (Non Thesis)
Anuj Goyal	Cornell University	Ithaca	MEngg (Non Thesis)
Manaswita Malatpure	Carnegie Mellon University	Pittsburgh	MS (Thesis)
Sushil Shanbhag	Cornell University	Ithaca	MEngg (Non Thesis)
Amit Shah	Carnegie Mellon University	Pittsburgh	MS (Non Thesis)
Nimish Patil	Rutgers State University of New Jersey	New Jersey	MS
Bhumika Sule	Univeristy of Florida	Gainsville	MS (Non Thesis), 40% Scholarship

GATE QUALIFIED CANDIDATES FROM THE DEPARTMENT:

Name	All India Rank
Mansi Shah	7
Tej Choksi	11
Chintan Shah	16
Kedar P Joshi	68
Yadav Manish	100
Abhijit Kale	256
Nirjara Turakhia	433
Sagar Nirgide	477
Sanket Bhavsar	990
Omkar Lokare	1444

CAT QUALIFIED CANDIDATES GOING FOR MANAGEMENT STUDIES

Name	Percentile	IIM
Srikant Lanka	99.99	Ahmedabad
Swati Das	98.95	Lucknow

MASTERS IN CHEMICAL ENGINEERING

Name	University	Location	Course
Anisha Rehlan	University of Michigan	Ann Arbor	MS (Thesis)
Chirag Kothari	University of California	Berkeley	MS- Product Development
Chaitanya Shah	Carnegie Mellon University	Pittsburgh	MS (Non Thesis)
Anuj Goyal	Cornell University	Ithaca	MEngg (Non Thesis)
Manaswita Malatpure	Carnegie Mellon University	Pittsburgh	MS (Thesis)
Sushil Shanbhag	Cornell University	Ithaca	MEngg (Non Thesis)
Amit Shah	Carnegie Mellon University	Pittsburgh	MS (Non Thesis)
Nimish Patil	Rutgers State University of New Jersey	New Jersey	MS
Bhumika Sule	Univeristy of Florida	Gainsville	MS (Non Thesis), 40% Scholarship

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Name	Percentile	IIM
Srikant Lanka	99.99	Ahmedabad
Swati Das	98.95	Lucknow

HATTRICK OF WINNING: PROFESSOR N.R. KAMATH QUIZ TROPHY OF IICHE (2012)

Winning Team Of Ict: Ms. Mansi Shah, Tej Chhoksi And Subnis With Quiz Master Professor Bhagwat

Ion Chromatograph

LCMS

Vacuum FTIR

GCMS

Atomic Force Microscope

Scanning Electron Microscope

X-Ray Diffraction

Transmission Electron Microscope

Time Resolved Spectrofluorometer

Facilities

Rheometer

Reaction Calorimeter

Thermogravimetric Analyzer

Supercritical Fluid Extraction

Nano-HPLC

Group Photos

First Row (Left to Right): Bhushan Sonchal, Anant Ghumare,Gorakshnath Takalkar, Ankush Chavan, Pallavi Parab **Second Row (Left to Right):** Swapnil Pakhale, Abhijeet Kshirsagar, Sudarshan Kalsulkar, Balu Pawar, Professor S. S. Bhagwat, Shobha Desai, Kumudini Lokhande, Vijaya Chandgude, Shilpa Iyer **Third Row (Left to Right):** Swapnil Sulakhe, Anik Goswami, Sharad Gotmukle, Ramesh Prajapati, Jitendra Tongaonkar

First Row (Left to Right): Vaishali, Jyotsna, Parmindar, Professor V.G. Gaikar, Neha, Meena, Nupur **Second Row (Left to Right):** Aditya, Pradipta, Khurshid, Shrihari, Nilesh, Tushar, Lalit, Sachin, Anil, Ravi, Amogh, Deepak (D), Mahesh, Kalpesh, Deepak (C), Pravin

Upper Row (Left to Right): Kiran Kumar Ramisetty, Ganesh Maddikeri, Pankaj Patil, SumitDubey, LokeshRamteke
Lower Row (Left to Right): PreetiSubhedar, AshwiniPurohit, ManishaBagal, NamrataGaikwad, SwetaShanker, AvinashMhetre, AnandChavan, SobanFaridi.

Ph.D Students: Amar Vibhandik, Karan Chavan, Chandrakant Gadipelly (RA),
M. Chem. Engg. Students: MadhaviBende, Snehal Pawar, Srivatsa Gopalan, Subodh Gautam

First Row (Left to Right): Professor A.B. Pandit **Second (Left to Right):** Rajashree Jawale, Kiran Ramisetty, Latif Shaikh, Gaurav Dastane, Dipak Pinjari, Yogesh Shinde, Aditya Pande, Apoorva naik, Bijal Gangar, Mandar Badve, Rekha Ganesh Maddikeri,Atul Bari **Third Row (Left to Right):** Aditi Nagardeolekar, Vishal Parekh, Ninad Pandit, Pramod Kharatmol, Deepak Kokate, Amogha, Virendra Saharan, Sunil Shingade

Left to Right: Swapnil Chaudhari (M ChemEng), Yogesh Jagdale (PhD Tech. Chem Eng), Machhindra Bhalerao (PhD Chemistry), Vibhuti Dukhande (PhD Chemistry), Shabdiki Chaurasia (S. Y. B. Chem. Eng.), Vaishali Kulkarni (PhD Tech. BPT), Neha Baradkar (PhD Chemistry), Kruti Shah (S. Y. B. Chem. Eng.), Rohini Tanksale (M Chem Eng), Yogesh Choughule (PhD Chemistry), Pratik Pawar (M Chem Eng), Dnyaneshwar Bhand (PhD Tech. BPT), Yohesh Mirage (PhD Tech. Chem Eng), Shrikant Mete (M Chem Eng)

First Row (Left to Right): Vikesh, Shaila, Aparna, Vrushali, Mangesh, **Second Row (Left to Right):** Hanumant, Sachin, Trupti, Dhanashree, Sonali, Revati, Sharad **Third Row (Left to Right):** Sagar, Kishor, Kavita Tejal, Komal, Chandrakant, Kishor, Devchand, Sachin, Preshil, Achut

First Row (Left to Right): Ms. Gandhi, Professor J.B. Joshi, S.S. Das
Second Row (Left to Right): Z. Khan, V.G. Kankani, T.V. Tamhane

First Row (Left to Right): H. Dadia, E. Joseph, T. Vedak, Dr. P. D. Vaidya, M. Bhattacharya, V. Dubey, D. Pisal.
SecondRow (Left to Right): A. Karemore, P. Sutar, M. Nimkarde, A. Bindwal, A. Jain, N. Margi, S. Jadhav, R. Kanawade, S. Bhavsar, Y. Patil, A. Salvi, R. Sundari

(Left to Right): Ms. Minu Pious, Ms. Divya Raghunandan Dr. C. S. Mathapati, Mr. Rahul Paliwal, Mr. Bhavesh Gajthiye

DBT-ICT-CENTRE FOR ENERGY BIOSCIENCES

INDIA'S FIRST NATIONAL BIOENERGY RESEARCH CENTRE

Dr. Arvind Mallinath Lali
B. Chem, M. Chem, Ph.D Tech. (Chemical Engineering)
Professor (Chemical Engineering)
Head, DBT-ICT-Centre for Energy Biosciences

The DBT-ICT Centre for Energy Biosciences (DBT-ICT-CEB) is a unique place with integrated basic and translational science capabilities for bioprocess development and scale up. Funded by The Department of Biotechnology, Ministry of Science and Technology, India, the Centre was established and formally inaugurated in May 2009. Built at a total cumulative cost equivalent to USD 10 million, the Centre is a part of the Institute of Chemical Technology (ICT) at Matunga, Mumbai, which is a deemed University under Section 3 of UGC Act 1956.The Centre was set up as a result of vision and efforts of Dr. M. K. Bhan, Secretary DBT and Dr. Renu Swarup, Advisor DBT, and functions under the leadership of Dr. G. D. Yadav, Vice Chancellor, ICT. The projects and technical programs at the Centre are coordinated by Dr. Arvind Lali. The Centre is focused primarily at developing biotechnologies for deriving biofuels from renewable resources for reducing India's rising dependence on petroleum fuels and cut down greenhouse gas emissions.

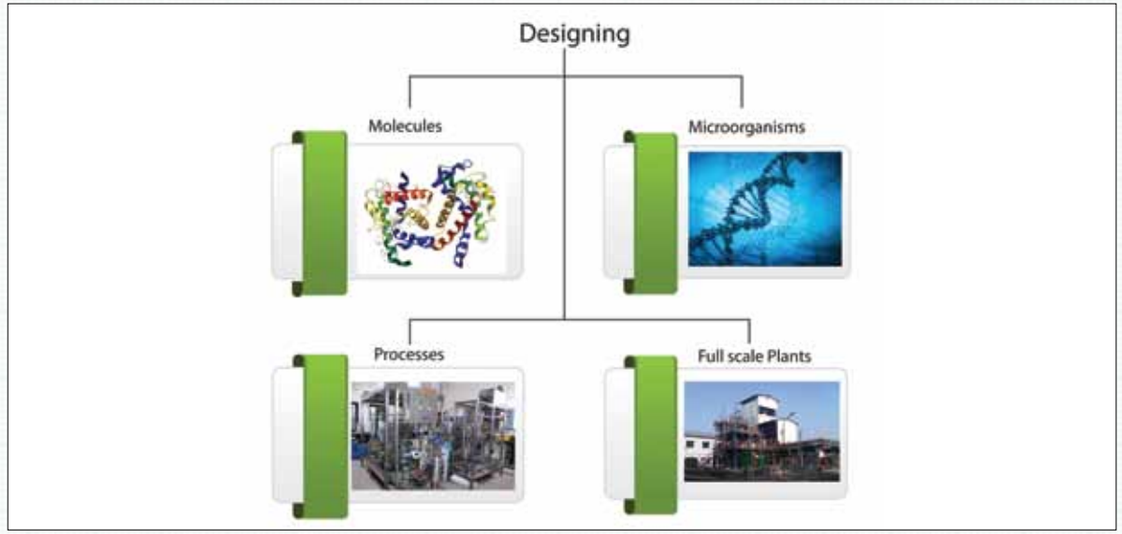
The motto of the Centre, as put by Dr. M. K. Bhan, Secretary, DBT, is "not doing new things, but doing the things in a new way" and indeed the Centre believes in building capacity at an Institute for development of integrated technology package. The Centre, besides being involved in technology development for many Indian and foreign companies, also actively collaborates with a number of industrial and academic partners. These collaborations are in the specific areas of separation sciences, analytical sciences, biomass-to-liquid fuel technologies, biorefinery development, plant biotechnology, enzyme technology, and metabolic engineering. Besides these, several other collaborations are under formation. The breadth and integration of various disciplines at the Centre, and its collaborators makes it an outstanding place which aims at developing cutting edge technologies in a global research scenario. At any given time the Centre has more than 50 Ph.D scholars in various disciplines like chemical engineering, chemistry, bioprocess technology, biotechnology, biochemistry, microbiology, and molecular & synthetic biology.

Comprised today of six working groups, the centre focuses on creating a vibrant bioscience and bioengineering platform for developing and demonstrating viable technologies for bio-alcohols, bio-based products and other advanced biofuels production. In addition to the biofuel program, the Centre also focuses on providing solutions in the areas of Bio-purifications and Bio-transformations for pharmaceuticals, food and other applied sectors of biotechnology.

AIMS

- Envisage the end goals as clearly as possible at all times
- Put all multiple disciplines to work in close co-ordination
- Combine expertise at two ends of the spectrum i.e. molecular biology and engineering sciences
- Scale up and apply evolving principles/ideas progressively alongside development in order to make sure that efforts are time efficient and not wasted and the technology zeroes to viability at a faster rate

CAPABILITIES



BIOFUELS TECHNOLOGY

Objectives

- Developing second and next generation sustainable biofuel technologies
- Development of biorefinery concept through multiproduct processing
- Scaling up and implementing biofuel plants in decentralized manner

Approaches

- Innovative pre-treatment strategies
- Radical intensification for enzyme process
- Intensification of fermentation steps

Achievements

- Technology developed for pre-treatment of low & high lignin biomass
- Production of separate enzyme amenable cellulose and hemicellulose fractions along with lignin
- Novel two step continuous enzyme process with rapid reaction rates and reduction in enzyme dosage and reaction time
- More than 90 % yield of sugars from biomass
- High ethanol tolerant strains for C5 & C6 fermentation
- High cell density column fermentors
- More than 90 % theoretical yield
- Low cost Pervaporation & distillation system

Technology Highlights

- Continuous process throughout; low CAPEX & low plant footprint
- Biomass to ethanol in less than 24 hours
- Ethanol yield > 300 L/Ton biomass
- Technology components patent protected worldwide
- IGL Pilot plant operational from April 2012 and first phase commissioned successfully

ENZYME TECHNOLOGY

Objectives

- To develop viable processes for microbial/ enzyme catalyzed bio-transformations
- Develop stable immobilized biocatalyst preparations
- Production and cost effective purification of expressed biocatalyst
- Bioreactor designs for process scale-up
- Engineer/develop specific enzymes with desired activity profiles
- Develop suitable over-expression systems for selected biocatalysts

Approaches

- In silico biocatalyst structure-function relationship studies
- Reaction/ Biocatalyst engineering
- Integration of processes
- Process scale up
- Reactor engineering

FERMENTATION TECHNOLOGY

Objectives

- Identifying and designing microorganisms
- Lab scale optimization and production
- Large scale production

Approaches

- Modification of growth phases
- Media engineering
- Fermentor design
- Extractive fermentation
- Metabolomics & metabolic flux modeling

ALGAL BIOTECHNOLOGY

Objectives

- Explore algae as a source of biofuel feedstock/biodiesel/ value added products
- Develop knowledge, technology and process strategies for sustainable production of algae as feedstock for fuel & chemicals
- Photo bioreactor/Raceway pond designing for efficient scale up of algae as biofuel feedstock

Approaches

- Screening & selection of algae
- Growth and media engineering, consortia design, CO_2 mitigation
- Strain improvement by genetic modification/ metabolic engineering/ hybridization
- Photo bioreactor/Raceway pond designing
- Harvesting and processing

SYNTHETIC BIOLOGY

Objectives

- Synthesis of drop in biofuels (butanol, biodiesel, biohydrocarbons)
- Large scale bioproduction of amino acids
- Synthesis of furanics from biomass

Approaches

- Pathway analysis for redirecting fluxes towards biofuel production
- Construction of synthetic metabolic pathways for production of high value compounds
- Vector construction for shuttle/transient/integrative cloning and expression of genes
- Recombinational methods for over expression /silencing of genes
- Alleviating product toxicity in biofuel production by directed evolution for tolerant strains

BIOPROCESS TECHNOLOGY

Objectives

- Thermodynamic & hydro-dynamic characterization of various adsorbents for RPC, NPC, HIC, HCIC, IEX, Affinity, IMAC, SEC & mixed mode chromatography
- Design & development of separations of bio-based, natural, synthetic & semi synthetic products using adsorptive & chromatographic separation
- To improve the product purity, productivity and process economics (commercial viability) through designing of selectivity and process engineering
- Designing of membrane (UF, MF and NF) and extractive separation, crystallization and precipitation (use of smart polymers and poly/ electrolytes) and to explore their possible integration with chromatographic separation
- Mechanistic and empirical models for adsorption and separation mechanisms
- Process monitoring through process optimization and product characterization
- Designing, engineering and scale up of chromatographic reactors (Packed bed, EBA, FBA, SMB, FMB, Segmented), skids as well as pilot and production plants

Approaches

- High Throughput Process Development (HTPD)
- Selectivity Engineering
- Process Integration and intensification
- Quality by Design (QbD)
- Reactor design and engineering
- PAT (Process Analytical Technology) and controls
- Design of adsorbents and affinity ligands
- Process and product characterization, Validation and risk analysis
- Computational fluid dynamics

IP MANAGEMENT TECHNOLOGY AND COMMERCIALIZATION UNIT

Objectives

- Capacity building within the centre in IP Management
- IP protection to technologies generated at the centre
- IP Management with regards to technology transfer and licensing

Approaches

- Filing of Indian, PCT's, and foreign patents
- Spreading awareness on IP issues
- Preparing MOUs, CDAs/ NDAs and MTAs

Currently the Centre has following human resource

Faculty	Professor - 1 Associate Professor - 1 Assistant Professor - 2 Research Scientist - 8 Research Associate - 1	13
Ph. D Scholars	PhD Bioprocess Technology PhD Biotechnology PhD Science PhD in Chemical Engineering	49
M. Tech Students	Bioprocess Technology Chemical Engineering	10
Support Staff		12

SUPPORT STAFF

S.N.	Name	Designation
1	Vibha Raut	Instrumentation Engineer (Electrical/Electronics)
2	Geetanjali Andurlekar	Clerk -cum-typist
3	Megha Pujari	Office Assistant
4	Shilpa Tondlekar	Office Assistant
5	Subhash Mandavkar	Project Attendant
6	Nilesh Satve	Project Attendant
7	Krishna Monde	Project Helper
8	Sameer Gawade	Project Attendant
9	Santosh Yadav	Project Attendant
10	Sandeep Gole	Project Attendant
11	Arun Rane	Project Helper
12	Prashant Koli	Laboratory Attendant

MAJOR INSTRUMENTAL FACILITIES

Complete facilities provided to work in areas of rDNA, Microbial Proteomics, Metabolomics and Metabolic Engineering, Downstream Processing & Separation technologies, Enzyme Technology, Fermentation Technology, Bioinformatics and Molecular Modeling.

Name of Equipment	Units
GC with headspace sampler	1
GC with inert XL EI/CI MSD with Triple-Axis Detector	1
HPLC systems with UV, DAD, RI, ELSD and CAD detectors	7
HPLC-MS/MS (Q-TOF; Triple-Quad; Ion Trap)	3
SELDI	1
Preparative HPLC	2
Moisture Analyzer	1
Micro and Analytical balances	4
Karl-Fischer Autotitrator	1
Fluorescence Microscope	1
Infrared Spectrophotometer (FTIR)	1
UV-VIS Spectrophotometers	2
Complete ELISA station	1
Versa Doc and Gel Doc Imaging System	1
PCR and RT-PCR	1
Gel electrophoresis systems & Image analysis	1
Ion Chromatographic system with ECD and BioScan detectors	1
Spectrofluorometer	1
Algal Stirred Photo Bioreactor	4
1000L and 5000L Raceway Ponds	1
Pulse Amplitude Modulated Fluorimeter (PAM)	1
Olympus Microscope Model IX51 with camera and software	1
Continuous Chromatography System. Simulated Moving Bed lab cum pilot scale high pressure Multicolumn System	1
Microwave reactor systems	2
Continuous microwave reactor system	1
3L to 10L Bioreactors	10
Multiple micro-fermenter assembly	1
Off-gas analyzer for the fermentation systems	1
Gradient PCR	2
Thermal Activity Monitor	1
Anaerobic work station	1
Elemental analyser	1
Parr/High pressure reactors	3
Biolog	1
Particle size analyzer	1
Mini-raceway ponds	10

Dr. Arvind M. Lali

B. Chem, M. Chem, Ph.D Tech. (Chemical Engineering)
Professor (Chemical Engineering)
Head, DBT-ICT-Centre for Energy Biosciences

Subjects taught during 2011-2012:

- Downstream Processing in Biotechnology
- Advances in Adsorptive & Chromatographic Separations
- Bioprocess Simulation Modeling & Bioreactor Design, Instrumentation & Process Control, Adsorptive Separations
- Statistical Methods

Research Interests:
Bioenergy, Biofuels & biomass to other chemicals, Purification of Proteins, nucleic acids & other biomolecules, natural & synthetic APIs high value organic/inorganic chemicals, Continuous chromatography, Modeling & Adsorptive separations, Biocatalysis & Bio transformations, Bioreactor design, Mixing & dynamics of solid- liquid fluidized bed, Dynamics of gas-solid circulating fluidized bed, Process integration & intensification, Process development, characterization & scale up.

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech- 13	Ph.D Sci.- 3
M.Tech.-2	M.Chem.Eng.- 1
M. Sc.- NA	Others (if any)- 1

Number of Research Publications:
International- 36 (so far),
1 (in press)

Conference Proceedings:
14(this year)
Book Chapters- 2

Number of patents:
36 (so far)
International- 4 (this year)
National – 9 (this year)

Number of sponsored Projects:
Government - 4
Private - 5

Professional Activities:

1. Member, Core Scientific Advisory Group on Biofuels to the Ministry of New & Renewable Energy (MNRE), Government of India
2. Member, Apex Committee, Food and Nutritional Safety, DBT, India
3. Member, Task Force Committees on Biofuels, and Bioprocesses and Bio-products, DBT, India 2008-till date
4. Member of the Scientific Advisory Committee (SAC) on Industrial Biotechnology (Department of Biotechnology-Government of India), 2008-till date
5. Member of the Scientific Advisory Committee (SAC) on Biofuels and Bioenergy (Department of Biotechnology, Government of India) 2008-2009
6. Member, Research Council Committee, IMTECH, Chandigarh
7. Member, Scientific Advisory Committee, IIT, Indore

Special Awards and Honors: Nil

Dr. Rekha Matlani

B.Sc. Biology, M.Sc. Applied Microbiology, Ph.D Microbiology
Associate Professor

Subjects taught during 2011-2012:
MolecularBiology&Biotechnology
Recombinant DNA Technology

Research Interests:
Metabolic Engineering/ Synthetic Biology for drop in fuels / chemicals

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech- 1	Ph.D Sci.- 3
M.Tech.-1	M.Chem.Eng.- 0
M. Sc.- NA	Others (if any)- 0

Number of Research Publications:
International - 20 (so far)
National - 3(so far)
Conference Proceedings - 8 (so far)
Book Chapter - 1 (so far)

Number of Patents: Nil

Number of Sponsored Projects:
Government - 2

Professional Activities:

1. Life Member of Society of Microbiology (SGM), UK
2. Life Member of American Society of Microbiology (ASM)
3. Life Member of Association of Microbiologist of India (AMI)
4. Life Member of Indian Association of Medical Microbiology (IAMM)
5. Life Member of Biotech Research Society of India (BRSI)

Special Awards and Honors: Nil

Dr. Annamma A. Odaneth

B.Sc. Microbiology, M.Sc. Biotechnology, P.G. Diploma in Bioinformatics, Ph.D. Applied Chemistry
Assistant Professor of Biochemistry

Subjects taught during 2011-2012:
Biological Sciences; Protein and Enzyme; Engineering; Biocatalysis and Enzyme Technology

Research Interests:
Extractive Biotransformations, Design & Engineering of enzymes, Selective Isolation & Capture of Natural Bioactive Molecules, Secondary Agriculture & its products, Process integration & intensification, Process development, characterization & scale up.

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech- 0	Ph.D Sci.- 0
M.Tech.-2	M.Chem.Eng.-Nil
M. Sc.- NA	Others (if any)- Nil

Number of Research Publications:
International - 2 (so far)
1 (in press)
Conference Proceedings - 4
Book Chapters - 0

Number of patents:
International - 1 (so far)
National - 2 (so far)

Number of sponsored Projects:
Government - 2
Private - 4

Professional Activities:

- Member of Indian Society of Chemists and Biology
- Member of Asia Pacific Chemicals, Biologicals & Environmental Engineering Society (APCBEES)

Special Awards and Honors: Nil

Dr. Sandeep B. Kale

B. Pharm., M. Tech. BPT, Ph.D. Tech (Chem. Eng.)
Assistant Professor of Bioprocess Technology

Subjects taught during 2011-2012:
Unit Operations in Bioprocessing Bioanalytical Techniques, Advanced topic in adsorptive & chromatographic separations

Research Interests:
Design and development of downstream processes for biopharmaceuticals, biologicals, natural products and synthetic API (extraction, biotransformation, adsorptive and selective chromatographic separations, filtration, crystallization, lyophilisation, & drying) Protein stabilization, Process characterization, Process integration and intensification, optimization and controls, QbD, Analytical method development and characterization, Validation, Enzyme technology and biocatalysis, Fermentation, Scale-up.

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech- 10	Ph.D Sci.- 3
M.Tech.-4	M.Chem.Eng.-Nil
M. Sc.- NA	Others (if any)-

Number of Research Publications:
International -
15 (so far), 09 (this year)
Conference Proceedings -
55 (so far), 8 (this year)
Book Chapters - 0

Number of patents:
16 (so far); International- 02 (this year)
National - 02 (this year)

Number of sponsored Projects:
Government - 3 Private - 2

Professional Activities:

1. Member, Board of Governor, UDCT Alumni Association (UAA)
2. Chief Investigator for Indo-Australia collaborative project under Australia-India Strategic Research Fund (AISRF)
3. Life member of Indian Pharmaceutical Association (IPA)
4. Life Member of International Association of Computer Science & Information Technology (IACSIT).
5. Member of Scientific Advisory Committee of DBT-ICT-Centre for Energy Biosciences, ICT, Matunga, Mumbai.
6. Core member of ICT-Agilent Technologies (India) initiative on advanced analytical Sciences and ICT-Bio-Rad Laboratories (USA) initiative on chromatographic separations.

Special Awards and Honors: Nil

Dr. Reena Pandit

B.Sc. Zoology, M.Sc. Marine Biology, Ph.D Marine Biotechnology

Research Scientist

Subjects taught during 2011-2012:
Biochemistry, Green Biotechnology

Research Interests:
Algal Biotechnology

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech-	Ph.D Sci.- 3
M.Tech.-	M.Chem.Eng.-Nil
M. Sc.- NA	Others (if any)-

Number of Research Publications:
9 (so far)
Conference Proceedings- 17 (so far)

Number of patents:
National - 1(this year)

Number of sponsored Projects:
Government -1 Private - 0

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Gunjan Prakash

B.Sc. Medical, M.Sc. Plant Biosciences, Ph.D Plant Biotechnology

Research Scientist

Subjects taught during 2011-2012:
General Microbiology

Research Interests:
Genetic manipulation of algal species for increasing the photosynthetic efficiency and development of robust algal strains by manipulation of stress responsive genes, Secondary metabolite production, Industrial Fermentation

Number of Research Students:

PDF-0	R.A- 0
Ph.D Tech- 0	Ph.D Sci.- 0
M.Tech.-1	M.Chem.Eng.-0
M. Sc.- 0	Others (if any)- 0

Number of Research Publications:
International - 9 (so far)
National - 2 (so far)
Conference proceeding - 17 (so far)

Number of patents :
National- 1(this year)

Number of sponsored Projects:
Government -1

Professional Activities: Nil

Special Awards and Honors :

1. Awarded BioVision Nxt. Fellowship by BioVision, the World Science Forum (held in Lyon, France for 27-29th March, 2011)
2. Awarded TWAS (Third World Academy of Science) Travel Grant for 2011 to participate in international conference

Dr. Fatima D'Souza

B.Sc. Life Sciences, M.Sc. Life Sciences, Ph.D Biochemistry

Research Scientist

Subjects taught during 2011-2012:
NA

Research Interests:
Bio-processing, Assay Development, Technology Transfer

Number of Research Students: Nil

Number of Research Publications:
2 (so far)

Number of patents : Nil

Number of sponsored Projects:
Government - 1

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Pooja Joshi

B.Sc. Medical, M.Sc. Biosciences, Ph.D Plant Biotechnology

Research Scientist

Subjects taught during 2011-2012:
Patents and IPR

Research Interests:
Plant Biotechnology, IP Protection & Policy

Number of Research Students: Nil

Number of Research Publications:
International - 3 (so far)
National - 1 (so far)

Number of patents : Nil

Number of sponsored Projects:
Government -1

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Aruna Mahesh

B.Sc. Biochemistry, M.Sc. Biotechnology, Ph.D Chemistry

Research Scientist

Subjects taught during 2011-2012:
NA

Research Interests:
Molecular & synthetic biology applications towards optimizing microbial pathways & synthesis of value added chemicals, Bioseparations

Number of Research Students: Nil

Number of Research Publications:
International - 4 (so far)

Number of patents: Nil

Number of sponsored Projects:
Government -1

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Supriya Ratnaparkhe

B.Sc. Botany, M.Sc. Botany, M. Phil Botany, Ph.D Forest Biotechnology

DBT-Energy Biosciences Overseas Fellow

Subjects taught during 2011-2012:
NA

Research Interests:
Plant cell wall characterization, Biomass degradation, Glycoside Hydrolases, Carbohydrate Binding molecules, Protein Engineering

Number of Research Students: Nil

Number of Research Publications:

International - 4 (so far)

Conference Proceedings - 2 (so far)

Number of patents: Nil

Number of sponsored Projects:
Government - 1

Professional Activities: Nil

Special Awards and Honors:
DBT Energy Biosciences Overseas Fellowship 2011

Dr. Abhishek Mule

M.Sc. Microbiology, Ph.D Microbiology, PDF Industrial Microbiology

Research Scientist

Subjects taught during 2011-2012:
Microbiology, Fermentation Technology

Research Interests:
Microbial fermentations, Xenobiotic Degradation, Enzyme production

Number of Research Students: Nil

Number of Research Publications:
9 (so far)
Conference proceedings - 3 (so far)

Number of patents:
4 (so far)

Number of sponsored Projects:
Government -1 Private- 1

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Shamlan M. S. Reshamwala

B.Sc. Microbiology & Biochemistry, M.Sc Biochemistry, Ph.D Molecular Biology

Research Scientist

Subjects taught during 2011-2012:
Biochemistry III, Biosystems Engineering

Research Interests:
Over expression & secretion of recombinant proteins, Enzyme engineering for improved catalysis and robustness, Utilization of cheap feedstock's for biosynthesis of transportation fuels and fine chemicals

Number of Research Students: Nil

Number of Research Publications:
2 (so far)

Number of patents:
Indian-1 (so far)

Number of sponsored Projects:
Government -1

Professional Activities: Nil

Special Awards and Honors: Nil

Dr. Manju Bishan Sharma

B.Sc. Medical, M.Sc. Microbiology, Ph.D Microbiology

Research Associate

Subjects taught during 2011-2012: NA

Research Interests
Microbial Diversity, Moelcular Biology, Metagenomics, Carbohydrate Binding Molecules, Glycoside Hydrolases, Protein Engineering

Number of Research Students:
Nil

Number of Research Publications:
International - 4 (so far),
2- In press
Book Chapter - 1;
Conference Proceedings: 9 (so far)

Number of patents:
Nil

Number of sponsored Projects:
Government-1

Professional Activities:
Nil

Special Awards and Honors:
Nil

SEMINARS

No.	Name of the Student (Beginning with Last name)	Topic
1	Daga .A	Modeling enzymatic depolymerisation of biopolymers
2	Shah A.H.	Modeling and simulation of open channel flow
3	Sadhale A.T.	Quantitative physico-chemical description of lignocellulosic biomass
4	Sule B.S.	Modeling of unsteady state ultrafiltration
5	Ramnani P.G.	Mathematical modeling of growing plant
6	Pandere V.V.	Strategies for transformation of lignin to aromatic building blocks
7	Borse Y.	Development of new measuring elements for effecting process analytical technologies

PROJECT / HOME PAPER

No.	Name of the Student (Beginning with Last name)	Topics
1	D' Souza R.L.	Design a plant for recovery of sodium hydroxide from Kraft lignin solution produced at 100 TPD
2	Joshi K.P.	Design separation of Butanol, Acetone and Ethanol in the ratio 6:3:1 from ABE process (500 TPD)
3	Modi N.R.	Design a plant to manufacture furfural and hydroxymehtyl furfural from 50 TPD of lignocellulosic biomass
4	Lokare Q.R.	Design a plant for extraction of fatty oils from wet oil bearing algal biomass produced at 100 TPD
5	Bhavsar S.R.	Design a plant for production of syngas from 100 TDD lignocellulosic biomass to ethanol by fermentation
6	Dhote V.V.	Design a plant for conversion of 1000 TPD of fatty oil to green diesel

M. TECH. / M. CHEM. ENG. LIST FOR SEMINARS AND CRITICAL REVIEWS

No.	Name of the Student (Beginning with Last name)	Seminar Topic	Critical Review Topic
1	Vhanmarathi Atul	Design and development of serum free media using protein hydrolysates	Metabolic engineering of E. coli with the help of in-silico simulation and modeling gene knockout technique for overproduction of L-valine
2	D'Souza Rozer	Cytochrome P-450 enzymes and its phenotyping	Factors affecting the separation and loading capacity of proteins in preparative gradient elution high performance liquid chromatography
3	Velhal Vishal	Synthesis of oligosaccharide and their purification	Elementary Mode Analysis: A useful metabolic tool for characterizing cellular metabolism.
4	Chaudhary Innu	Overproduction of amino acids by metabolic engineering of microbes	An improvement of potato pulp hydrolyzation process by the combination of protease enzymes systems.
5	Mohandas Neha	Macroalgae for extraction of valuable products	Recent developments in membrane based separations in biotechnology process: Review
6	Maranholkar Vijay	Enzyme deactivation methods for increasing shelf life and texture of vegetables or agriculture products	Electrochemically controlled surface plasmon resonance immunosensor for the detection of human immunoglobulin G on Poly (3-Aminobenzoic Acid)
7	Tribhuvane Shreyas	Heterotrophic/nitrotropic production of oil using microalgae	A laboratory study of producing docosahexaenoic acid from biodiesel-waste glycerol by microalgal fermentation
8	Agrawal Snehal	Stabilisation of therapeutic proteins and easy drug delivery system	The purification and properties of human plasminogen
9	Talangkar Vishal	Engineering enzyme structure and function	A simple and rapid harvesting method for microalgae by in-situ magnetic separation.
10	Lute Kiran	Nanocellulose synthesis and application	Screening of biocompatible solvent for lipid milking of nanochloropsis SP
11	Yadav Ashish	Purification of hCG and hMG from urine	Biochar addition to agricultural soil increased CH4 uptake and water holding capacity – Results from a short-term pilot field study
12	Revenwar Vishal	Spectroscopic characterization of monoclonal antibody	Quantification of metabolically active biomass using methylene blue dye reduction test: measurement of CFU in two hundred second
13	Jain Siddharth	Design of bioreactors for high yield of algal biomass	A process for manufacturing of whey protein concentrate by continuous ultrafiltration and the parameters involved therein
14	Shafique Shaikh	Conversion technologies for algal biofuels	Antimicrobial and antioxidant properties of chitosan enzymatically functionalized with flavonoids
15	Joshi Pranav	Principle, design and control of SMB Chromatography	Design of biosensor based on 1-(-4- nitrophenyl)-2,5- di- (2-thienyl)- 1H- pyrrole
16	Purohit Ashwini	Biosynthesis of natural products	Rose hip (Rosa canina L.) oil obtained from waste hip seeds by different extraction methods
17	Sakhare Sandip	Plasmonic nannobubbles	Extraction and purification of bioactive compound from non-edible oil
18	Sawant Pramod	Recycling chromatography	Production of aroma ester by immobilized Candida rugosa and porcine pancreatic lipase into calcium alginate gel
19	Mulay Bhushan	Effect of ultrasonic radiation on fuel cell	Purification and characterization of novel alkali stable α- amylase from Chryseobacterium taeanense TKU001and application in antioxidant and prebiotic
20	Raskar Hanumant	Enhancement of sludge properties using ultrasonication pretreatment	Aqueous two phase extraction of protein from fermentation broth using ethanol and sodium acetate system

21	Redkar Gargi	Downstream processing in ionic liquids	Cloning, expression, and characterization of Babesia gibsoni dihydrofolate reductase-thymidylate synthase: inhibitory effect of antifolates on its catalytic activity and parasite proliferation
22	Waingankar Onkar	Acarbose fermentative production and downstream processing	Production of new-to-nature sophorolipids by cultivating the yeast Candida bombicola on unconventional hydrophobic substrates
23	Ugale Sharad	Intensification of biogas production from agricultural waste by using alternative energy sources	Lipase catalyzed synthesis of phytostanyl ester in non aqueous media
24	Koley Shushmita	Glycerol: a source for biotransformation	An eco friendly approach to process rice bran for high quality rice bran oil using super critical carbon dioxide for neutraceuticals applications
25	Shankar Shweta	Lipase catalysed synthesis of polymers	Ultrasound chemistry, microbial inactivation in cloudy apple juice by multi-frequency Dynashock power ultrasound
26	Pathak Bhumika	Effect of ultrasonic radiation on fuel cell	Immobilized purple bacteria for light-driven hydrogen production from starch and potato effluents
27	Faridi Ahmad Soban	Biotransformation of polyphenol- increase in stability of bioavailability	Physical feature of ultrasound assisted enzymatic degradation of recalcitrant organic pollutant
28	Gadkar Anuradha	Enzymatic immobilization using novel polymers	Photoreduction of carbon dioxide with water over $K_2Ti_6O_{13}$ photocatalyst combined with Cu/ZnO catalyst under concentrated sunlight

M. TECH. / M. CHEM. ENG.

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1	Vhanmarathi Atul	KIT's College of Engineering, Kolhapur, Maharashtra	Production and purification of therapeutic protein	Rekha Matlani
2	Innu Chaudhary	University School of Biotechnology, G.G.S Indraprastha University, New Delhi	Integrated process development for the production of hydro-lysates of biopolymers	Dr. S.B. Kale
3	Tribhuvane Shreyas	Singhgad College of Engineering, Pune University	Design & development of segmented column chromato-graphy for purification of biomolecules	Dr. S.B. Kale
4	Agrawal Snehal	D. Y. Patil University, Navi Mumbai	Production of triterpene acids by suspension culture and its purification thereof.	Dr. S.B. Kale
5	Mohandas Neha	K.I.T's College of Engineering, Kolhapur	Development of purification process for biomolecules using Quality By Design	Dr. S.B. Kale
6	Maranholkar Vijay	K.I.T's College of Engineering, Kolhapur	Characterization of chromato-graphic adsorbent for purifica-tion of biomolecules	Dr. S.B. Kale
7	Talangkar Vishal	IPER, Wardha	Development of cost effective harvesting technologies for algal biomass	Dr. Reena Pandit
8	Velhal Vishal	N.D.M.V.P. Samaj's College of Pharmacy, Nashik	Isolation and characterization of arabinoxylan from grain waste	Dr. Annamma Anil
9	D'Souza Roger	T.K.I.E.T., Warananagar	Designer lipid synthesis and purification	Dr. Annamma Anil
10	Pranav Joshi	A.R. College of Pharmacy, Vallabh Vidyanagar, Gujarat	Biotransformation of Industrial relevances: Chiral alcohols by enzymatic preparation	Professor G. D. Yadav
11	Purohit Ashwini	Sinhgad College of Engineering, Pune.	Cavitation based extraction and purification of biomolecules	Dr. Parag Gogate
12	Sakhare Sandip	SSBT College of Engineering and Technology	Extraction, analysis and purification of bioactive compounds from nontriglyceride components of non-edible oil	Dr. Amit Pratap

13	Yadav Ashish	USBT, Guru Gobind Singh Indraprastha University, Delhi	Biochar and its applications	Professor A. B. Pandit
14	Sawant Pramod	MGV's Pharmacy College, Panchavati, Nashik	Biotransformation of limonene to alpha terpineol	Professor G. D. Yadav
15	Shafique Shaikh	Prin. K.M. Kundanani College of Pharmacy, Colaba	Fermentative production of prebiotics	Dr. Laxmi Ananthnarayan
16	Mulay Bhushan	Sharad Chandra Pawar College of Phamacy, Otur, Tq. Junnar, Dist. Pune	Studies in enzyme applications	Dr. V. K. Rathod
17	Raskar Hanumant	AISSMS college of Pharmacy, Pune	Studies in downstream processing of biomolecules	Dr. V. K. Rathod
18	Redkar Gargi	VES college of Pharmacy, Chembur, Mumbai	Isolation and purification of drug target enzyme from infectious microorganism	Professor M. S. Degani
19	Waingankar Onkar	Saraswati vidhya bhavan's college of pharmacy, Dombivli East	Studies in bioactive peptides	Dr. U.S Annapure
20	Ugale Sharad	MGV's Pharmacy College, Panchavati, Nashik	Separation and purification of natural product	Dr. V. K. Rathod
21	Lute Kiran	N.D.M.V.P. Samaj's College of Pharmacy, Nashik	Optimisation of lipid production in algae and secretion by milking	Dr. Gunjan Prakash
22	Koley Shushmita	C.U. Shah College of Pharmacy, SNDT, Juhu	Supercritical fluid extraction	Dr. Vandana Patravale
23	Shankar Shweta	Shastra University, Thanjavur, Tamil Nadu	Intensification of enzymatic reaction using ultrasound	Dr. Parag Gogate
24	Pathak Bhumika	Guru Gobind Singh Indraprastha University, New Delhi	Biotransformation of polyphenol- increase in stability of bioavailability	Professor Rekha Singhal
25	Faridi Ahmad Soban	Integral University, Lucknow	Improvement of bioreactor	Dr. Parag G. Gogate
26	Revenwar Vishal	Shriman Sureshchandra Jain College of Pharmacy, Chandvad (Nashik)	Enzymatic transformation of PUFA	Dr. Uday Annapure
27	Gadkar Anuradha	KITs College of Engineering Kolhapur	Fermentative production and downstreaming processing of melatonin	Professor Rekha Singhal
28	Jain Siddharth	Maharashtra Institute of Technology, Pune	Separation, purification and drying of biomolecules	Professor B. N. Thorat

M.SC. (CHEMISTRY) (BY RESEARCH) = NA

Ph. D (TECH)

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1	Rathi Abhijit	ICT, Mumbai	Design and scale-up of enzymatic biotransformations	Professor A. M. Lali
2	Gujarathi Swapnali	ICT, Mumbai	Purification and recovery of inclusion body proteins	Professor A. M. Lali
3	Khot Lalit	ICT, Mumbai	Flux analysis of metabolic pathways for biochemical system improvisation	Professor A. M. Lali
4	Sunkara Sunil	University of Wisconsin Madison	Design of strategies to improve fermentation productivities: use of single and multiple substrate continuous fermentation systems	Professor A. M. Lali
5	Chatterjee Mandrita	ICT, Mumbai	Designing process for isolation of proteins from urine for therapeutic and diagnostic application	Professor A. M. Lali
6	Kadam Sandip	ICT, Mumbai	Dovetailing of unit processes for downstream processing of biomolecules	Professor A. M. Lali
7	Amritkar Vinod	ICT, Mumbai	Separation and purification of therapeutic natural products using Quality by Design approach	Professor A. M. Lali
8	Valte Rajeshwar	ICT, Mumbai	Kinetics and engineering of enzymatic cellulose hydrolysis	Professor A. M. Lali
9	Birhade Sachinkumar	ICT, Mumbai	Reaction engineering of enzymatic hydrolysis of Holocellulose	Professor A. M. Lali
10	Pednekar Mukesh	ICT, Mumbai	Controlled chemo-enzymatic hydrolysis of polysaccharides	Professor A. M. Lali
11	Deore Gaurangi	ICT, Mumbai	Quality based designing for purification of monoclonal and polyclonal antibody	Professor A. M. Lali
12	Prashant Kumar	ICT, Mumbai	Downstream processing and character-ization of proteins	Professor A. M. Lali
13	Degwekar Gautam	D. Y. Patil Univer-sity Navi Mumbai	Design of immobilized of cell systems	Professor A. M. Lali

14	Rao Suruchi	Macquarie University, Sydney	Cloning and expression of cellulose specific CBM's	Professor A. M. Lali
16	Chavan Manoj	ICT, Mumbai	Valorization of agro-industrial wastes	Dr. S.B. Kale
17	Gupta Anand	ICT, Mumbai	Designing purification of structurally related compounds	Dr. S.B. Kale
18	Pappachan Febin	ICT, Mumbai	Production of natural protein hydrolysates for supplements	Dr. S.B. Kale
19	Narnaware Sharad	ICT, Mumbai	Isolation and purification of value added products from natural sources	Dr. S.B. Kale
20	Bajwa Singh Arjun	ICT, Mumbai	Microbial production and purification of amino acids	Dr. Rekha Matlani
21	Agrawal Snehal	D. Y. Patil University, Mumbai	Production of antioxidants and sesquiterpene acids by PTC	Dr. S. B. Kale

Ph.D (SCIENCE)

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1	Wadekar Prathamesh	Ramnarain Ruia College, Matunga, Mumbai	Recovery and downstream chemistry of lignocellulosic lignin	Professor A. M. Lali
2	Sawdekar Parikshit	Institute of Science, Mumbai	Improved process designs for fermentative production of lactic acid/acetic acids	Professor A. M. Lali
3	Shukla Hiral	M. S. University of Baroda	Intensification for butanol production	Professor A. M. Lali
4	Pawar Hitesh	Pratap College, Amalner	Synthesis of bio-based chemicals	Professor A. M. Lali
5	Vadgama Rajesh	Mithibai College, Mumbai	Designing lipases for hydrolysis and synthesis	Professor A. M. Lali
6	Gangal Swanand	Mumbai University	Designing strategies to improve microalgal lipid production for biofuels	Professor A. M. Lali
7	Patil Mallikarjun	Solapur university Sholapur	Lignin characterization for study of structural changes in biomass	Professor A. M. Lali
8	Yadav Manish	Mumbai University, Santacruz (E)	Enzyme mediated transformation of fatty acids	Professor A. M. Lali
9	Sivadasan Anil	College of Agriculture, O.U.A.T. Bhubaneswar	Hemicellulase engineering	Dr. Rekha Matlani
10	Kanoongo Anjali	Delhi University, North Campus, New Delhi	Development of system for the production of essential amino acid(s)	Dr. Rekha Matlani
11	Badgujar Swati	Pune University R.Y.K. College	Strain improvement for higher butanol production	Dr. Rekha Matlani
12	Warke Mrunal	University Of Pune	Biotransformations of ricinoleic acid into value added products	Dr. Rekha Matlani
13	Iyer Padmini	Madras University S.R.M. College	Purification and controlled enzymatic hydrolysis of proteins	Dr. Rekha Matlani
14	Vira Chaitali	Mumbai University	Growth engineering of algae for biomass production	Dr. Rekha Matlani
15	Victoria Juliet	Mumbai University	Saccharification and fermentation of holocellulose	Dr. Rekha Matlani
16	Rathod Jayant	Mumbai University	Molecular cloning, over expression and characterization of stress responsive genes for its functional analysis in green algae	Dr. Rekha Matlani
17	Sawant Sneha	Mumbai University	Strategies of reducing glucose intolerance in β-glucosidases	Dr. Rekha Matlani
18	Pillai Vijita	Mumbai University	Engineering Propionibacterium for acid production	Dr. Rekha Matlani
19	Krishnan Archana R.	G.N. Khalsa College of Arts, Sci. Commerce	Biological production of terpenoids & biochemicals	Dr. Rekha Matlani
20	Palkar Juilee	Mumbai University	Strategies to improve algal feedstock	Dr. Rekha Matlani
21	Nainan Lucy	St. Xaviers, Fort	Strategies of overproduction of free fatty acid in E. coli	Dr. Rekha Matlani
22	Vaze Rutuja	Birla College, Kalyan	Isolation of monosaccharides from agricultural waste	Dr. Rekha Matlani
23	Maurya Ritu	University Dept. of Chemistry, Kalina	Synthesis of biopolymer by chemical catalysis	Dr. Rekha Matlani
24	Sawant Sonal	Birla College, Kalyan	Microbial production of aromatic volatiles	Dr. Rekha Matlani
25	Patil Smita	Ramnarain Ruia College Matunga Mumbai	Enhancement of value added products in algae	Dr. Rekha Matlani
26	Gaikwad Sujata	Birla College, Kalyan	Development of algal system for overproduction of lipids	Dr. Rekha Matlani
27	Daware Sachdeo	Ahmednagar College of Arts, Science & Commerce, Ahmednagar	Computer aided design and synthesis of derivatives of natural products	Dr. S.B. Kale

28	Tiwari Richa	Ahmednagar Co-llege of Arts, Science & Commerce, Ahmednagar	Synthesis, separation & mechanism of protein-drug bio- conjugates	Dr. S.B. Kale

DETAILS OF SPONSORED PROJECTS – GOVERNMENT AND PRIVATE (NAME OF SPONSOR, TITLE OF PROJECT, DURATION, GRANT, PRINCIPAL INVESTIGATOR/CO-INVESTIGATORS, NAMES OF RESEARCH FELLOWS)

1. GOVERNMENT AGENCIES

S.N.	Sponsor	Title	Duration	Amount in Lakhs	Principal Investigator	Research Fellows
1	DBT	DBT-ICT Centre for Energy Biosciences	2008-2012	2480.00	Professor A. M. Lali	20
2	DBT	Development of Bioscience and Biotechnology for next generation biofuel	2010-2012	196.00	Professor A. M. Lali	5
3	DBT	Patent Cell (Intellectual Property Management & Technology Commercialization Unit under (BIRAP)DBT, Govt. of India)	2010-2012	76.70	Professor A. M. Lali	1
4	DBT	Extraction and purification of sorghum seed protein for delayed delivery of bioactivities	2010-2012	101.32	Dr. S.B. Kale	2
5	SBRI	Extraction, purification, stabilization and biological studies of natural gonadotropins and other uroproteins	2011-2014	22.00	Dr. S.B. Kale	1

2. PRIVATE AGENCIES:

Sr. No	Sponsor	Title	Duration	Amount in lakhs	Principal Investigator	Research Fellows
1	Chemtrols India Ltd.	Development of process for production of lactic acid and poly-lactic Acid	2010-2012	40.00	Professor A. M. Lali	2
2	General Mills	Enhanced solid fat content profiles via enzymatic inter-esterification	2012-2013	16.50	Professor A. M. Lali	2
3	General Mills	Value added products from GMI vegetable waste streams	2012-2013	11.00	Professor A. M. Lali	2
4	Bio-Rad Laboratories, India	Advances in adsorptive and chromatographic separations	2012-2015	18.74	Professor A. M. Lali	3

ACADEMIC

S.N.	Area of Joint Development Work	Institute
1	Next Generation Biofuel/Bioproducts Research	International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi
2	Next Generation Biofuel/Bioproducts Research	Queensland University of Technology, Brisbane, Australia
3	Metabolic Engineering	School of Chemical Engineering, Purdue University, LO, USA
4	Next generation Biofuels: Protein Engineering	International Centre for High Technology and Science (ICS), UNIDO, Trieste, Italy
5	Chemical biomass Treatment	Dept. of Chemical Engineering, College of Engineering, University of Saskatchewan, Canada
6	Protein Purification from natural sources	Dept. of Chemical Engineering, Curtin University of Technology, Perth, Australia
7	Biomass Deconstruction	University of Nottingham
8	Biofuels	Centre for Advanced Research on Bioenergy, Indian Oil Corporation Limited, India

INDUSTRIAL

S.N.	Area of Joint Development Work	Industry
1	Chromatographic Separations	Biorad Laboratories, India
2	Advanced Analytical Sciences	Agilent Technologies, India
3	Enzyme Engineering and Applications	Advanced Enzyme Technologies Limited, India
4	Bio-ethanol from Lignocellulosic Biomass	India Glycols limited, India
5	Biorefinery for Bio-chemicals	Privi Organics Limited, India
6	Instrumentation and Plant Design (Engineering Package)	Snowtech Equipments Private limited, India

Publications

S.N.	Title And Authors	Journal	Vol. No.	Page	Year
1	Study of olopatadine hydrochloride under ICH recommended stress conditions by LC, LC-MS/TOF for identification and characterization of degradation products Anand Mahajan, Anil Thaker, Sandeep Kale and Krishnapriya Mohanraj	Journal of Liquid Chromatography & Related Technologies	In press		2012
2	LC, LC-MS/MS studies for identification and characterization of degradation products of lamotrigine and establishment of mechanistic approach towards degradation, Anand Avinash Mahajan, Anil Keshavlal Thaker, Sandeep Kale and Krishnapriya Mohanraj,	Journal of Liquid Chromatography & Related Technologies	In Press		2012
3	Jatropha oil and karanja oil as carbon sources for production of sophorolipids Sushant D. Wadekar, Sandeep B. Kale, Arvind M. Lali, Dipti Narayan Bhowmick and Amit P. Pratap	Eur. J. Lipid Sci. Technol.	114	823-832	2012
4	Microbial synthesis of rhamnolipids By Pseudomonas aeruginosa (ATCC 10145) on waste frying oil as low cost carbon source S. D. Wadekar, S. B. Kale, A. M. Lali, D. N. Bhowmick & A. P. Pratap	Preparative Biochemistry and Biotechnology	43(3)	249-266	2012
5	Characterization of super porous cellulose matrix for high throughput adsorptive purification of lysozyme, Sandeep Kale and Arvind Lali	Biotechnology Progress	27(4)	1078-1090	2011
6	Utilization of sweet water as a cost effective carbon source for sophorolipids production by Starmerella bombicola (ATCC 22214) Sushant D. Wadekar, Sandeep Kale, Arvind Lali, D. N. Bhowmick and Amit P. Pratap	Preparative Biochemistry & Biotechnology	42(2)	125-142	2012
7	Non traditional oils as newer feedstock for rhamnolipids production by Pseudomonas aeruginosa (ATCC 10145) Sushant D. Wadekar, Sandeep Kale, D. N. Bhowmick and Amit P. Pratap	Journal of American Oil Chemical Society	88	1935-1943	2011
8	Effect of glycerol and soybean oil as a carbon source on the production of mannosylerythritol lipids by Pseudozyma antarctica (ATCC 32657) S. V. Patil, S. D. Wadekar, S. B. Kale, A. M. Lali, D. N. Bhowmick and A. P. Pratap	Journal of Lipid Science and Technology	43(1)	16-20	2011
9	Structural elucidation and surfactant properties of rhamnolipids synthesized by Pseudomonas aeruginosa (ATCC 10145) on sweet water as carbon source and stabilization effect on foam produced by Sodium Lauryl Sulfate Sushant D. Wadekar, Sachin Patil, Sandeep Kale, Arvind Lali, D. N. Bhowmick and Amit P. Pratap	Tenside Surfactant and Detergents	48(4)	1-7	2011
10	An amino-acid based pseudobioaffinity adsorbent for the purification of immunoglobulin Amith D. Naik; Monika Raina; Arvind M. Lali	Journal of Chromatography A doi:10.1016/j. chroma.2011.01.083			2011

Patents

S.N.	Inventors	Title	Country	Funding Agency
1	Arvind Mallinath Lali Amith Dattatray, Naik , Monika Raina, Sandeep Bhaskar Kale	A process for purification of immunoglobulins using a pseudobioaffinity adsorbent"	Indian Granted Patent No. 248707 US Application No. 12/597,136	DBT
2	Lali, Arvind Mallinath; Kale Sandeep B, Pakhale, Vinod D., Thakare Yogeshwar N.	Continuous counter current Fluidized Moving Bed (FMB) and/or Expanded Moving Bed (EMB)	India, China, S Korea, USA, EPO, Canada	DBT

3	Lali, Arvind Mallinath; Nagwekar, Pooja Devidas; Varavadekar, Jayesh Suman; Wadekar, Prathamesh Chandrashekher; Gujarathi, Swapnali Subhash; Valte, Rajeshwar Dattatray; Birhade, Sachinkumar Hiraman; Odaneth, Annamma Anil.	Method for preparation of fermentable sugars from biomass	India, Pakistan, Bangladesh, Thailand, Uruguay, Paraguay, Venezuela, Argentina, USA, EPO, Canada, Australia, New Zealand, Singapore, Malaysia, South Korea, China, Japan, Brazil, South Africa, Vietnam, Philippines	DBT
4	Lali, Arvind Mallinath; Varavadekar, Jayesh Suman; Wadekar, Prathamesh Chandrashekher	Process for fractionation of biomass;	India, Pakistan, Bangladesh, Thailand, Uruguay, Paraguay, Venezuela, Argentina	DBT
5	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Iyer, Padmini Raju; Ghosh, Bidisha; T. D. Anupama; Rathi, Abhijit; Deshmukh, Sharad	A process for isolation of natural and bioactive proteins and other minor components from defatted oil seed material	Indian Application Number: 3577/ MUM/2011	Biotechnology Industry Research Assistance Council (BIRAC, DBT)
6	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Vadgama, Rajesh; Warke, Mrunal; Bhat, Anuradha	Process for hydrolysis of oils to produce free fatty acids and mono acyl glycerols	Indian provisional application number: 278/MUM/ 2012	BIRAC (DBT)
7	Lali, Arvind Mallinath; Kale, Sandeep; Kadam, Sandip	A process for recovery of xylitol with high yield and purity	Indian Application No. : 421/MUM/2012	BIRAC (DBT)
8	Lali, Arvind Mallinath; Kale, Sandeep; Singh, Bhaskar; Prashant Kumar; Mane, Sharmilee	Process for production of purified hydrophobic/ plastifiable protein/s, their hydrolysate/s and applications thereof	Indian Application Number: 420/ MUM/2012	DBT
9	Lali Arvind , Pandit Reena , Prakash Gunjan, Mathpati Channamallikarjun , Gangal Swanand, Vira Chaitali , Palkar Juilee, , Patil Smita, Gaikwad Sujata	Apparatus for increased prod-uction of algal biomass	Indian Application No: 1705/MUM/2012	BIRAC

BOOK: NA

BOOK CHAPTER

No.	Author(s)	Title of the chapter	Editor	Publisher	Place	Year	Page
1.	Arvind M Lali	Research & prospective of next generation biofuel in India	Fornasiero Paolo and Graziani Mauro	CRC Press, Taylor & Francis Group	Boca Raton, London New York	2012	359-372

GENERAL PUBLICATIONS: NA

Membership of In-house Committees

PROFESSOR ARVIND M. LALI

- Head, DBT-ICT Centre for Energy Biosciences
- Chairman, TEQIP Industry Institute Interaction Cell
- Chairperson : Research Recognition Committee (Bioprocess Technology)
- Chairperson: Research Recognition Committee (Biological Sciences)

ACADEMIC		
S.N.	Committee	Members
1	Admissions Committee (M. Tech. BPT and Ph. D Tech. and Ph.D Science)	Dr. Annamma Anil Dr. Manju Sharma Dr. Abhishek Mule Dr. Sandeep Kale
2	Fellowships	Dr. Annamma Anil
3	Placements	Dr. Sandeep Kale
4	Committee Meetings	Dr. Gunjan Prakash Dr. Pooja Joshi
5	Thesis and Viva Matters	Dr. Annamma Anil
6	Project Reports, Surveys, Yearly Reports	Dr. Manju Sharma Dr. Pooja Joshi
7	Collaborations and Proposals	Dr. Manju Sharma
8	Technology Transfer, IP Management	Dr. Fatima D' Souza Dr. Pooja Joshi
CENTRE MANAGEMENT		
9	Instruments & Maintenance	Mrs. Vibha Raut
10	Lab Upkeep + Safety + Disposal	Dr. Fatima D'Souza
11	Non-Teaching Staff	Dr Reena Pandit
12	Accounts & UC's & Claim bills	Dr. Reena Pandit
13	Orders & Tenders	Dr. Reena Pandit
14	Expansion	Dr. Reena Pandit
15	Coordinating external visitors	Dr. Gunjan Prakash Dr. Aruna Mahesh

Seminars/Lectures/Conferences/Symposia/Workshops/Summer or Winter Training Schools attended/Oral OR Poster Presentations

FACULTY

PROFESSOR A. M. LALI

1. Delivered lecture during the seminar on 16th July 2011 at Indian Institute of Chemical Engineers, New Delhi.
2. Delivered a talk on the "Current Status of Second Generation biofuel conversion technologies" at 18th Conference of Indian Oil and Gas Review Summit and International Exhibition held at Mumbai on 8th September 2011.
3. Attended Workshop organized by DBT India and BBBRC UK in Bioenergy Research Talk: Landscape session: Biorefining, scale-up technologies, fermentation technologies at New Delhi from 9th -11th October 2011.
4. Attended 3rd National Workshop on Research and Development in Food Processing Sector at Hotel ITC Maratha, Mumbai on 17th November 2011.
5. Delivered lecture on "Fostering Academia-Industry Collaboration through SBIRI" at one day road show organized by DBT on "Small Business Innovation Research Initiative" at The Ambassador, Mumbai on 2nd December, 2011.
6. Attended workshop on Energy Research for Global Sustainability, held at IIT Bombay on December 8th -9th, 2011.
7. Delivered a talk on the "Current technology status of cellulosic ethanol in India" at IOCL, Faridabad 121007, Haryana on 5th March 2012.
8. Attended Conference on Secondary Agriculture: Building Agro-based Industries (presentation in the Session II: "Commercialization of Technologies by Indian Organizations") at FICCI, New Delhi on 9th and 10th April 2012.
9. Attended "ACHEMA Industrial Equipment and Process Exhibition" at Frankfurt, Germany from 19th June to 24th June 2012.
10. Participated in an academic workshop entitled "Composition and Deconstruction of Plant Biomass" organised by University of Nottingham held at Yew Lodge Hotel, Kegworth, United Kingdom during 7th - 8th June 2012.

DR. SANDEEP KALE

11. Delivered lecture on "Secondary agriculture for cotton" 21st October 2011, at CIRCOT, Mumbai.
12. Key note speaker "Screening, concept of adsorbent, process design and quality of the product" at 6th National workshop on Preparative and Process Chromatography, 24th to 26th August 2011, ICT, Mumbai.
13. Keynote speaker "Engineering chromatographic separation science and its integration for industrial (Purification) Applications" at 5th International workshop on crystallization, filtration and drying, 2011, Mumbai.
14. Keynote speaker "Development of pseudoaffinity adsorbent for the purification of immunoglobulins (IgG's)" at Symposium on Next Steps in Bioprocess Technology, 2011, GE Healthcare's Research Centre, Bangalore.
15. Presented a poster on "Development of Large Scale Extraction of Biopolymers (Prolamines) used for Drug Delivery Applications, at 63rd Indian Pharmaceutical Congress, 15th to 17th December 2011, Bangalore.
16. Presented a poster on "Kafirin Based Microspheres for Controlled Release of Doxorubicin", at 63rd Indian Pharmaceutical Congress, 15th - 17th December 2011, Bangalore.
17. Presented a poster on "Extraction of Bioactive Molecules from Apple Pomase: Screening of Solvents and Kinetics", at 63rd Indian Pharmaceutical Congress, 15th - 17th December 2011, Bangalore.
18. Presented a poster on "Novel continuous counter current multistage fluidized moving bed system for purification of bio/chemicals", at continuous and intensified processes for specialty chemicals, 19th - 20th December 2011, NCL, Pune.
19. Presented a poster on "Continuous Liquid Solid Circulating Fluidized Bed, poster presentation at Continuous & Intensified processes for Specialty Chemicals, 19th - 20th December 2011, NCL, Pune.
20. Presented a poster on "Tandem column chromatographic processes for isolation of multiple products from single feedstocks at continuous and intensified processes for specialty chemicals, 19th - 20th December 2011, NCL, Pune.
21. Keynote speaker "Biotech product purification and polishing" on 14th June 2012, at SCOE, Pune.

DR. ANNAMMA ANIL

1. Attended Workshop organized by DBT India and BBBRC UK in Bioenergy Research Talk: Landscape session: Biorefining, scale-up technologies, fermentation technologies at New Delhi from 9th - 11th October 2011.
2. Participated in an academic workshop entitled "Composition and Deconstruction of Plant Biomass" organised by University of Nottingham held at Yew Lodge Hotel, Kegworth, United Kingdom during 7th - 8th June 2012.

DR. REENA PANDIT

1. Attended Workshop organized by DBT India and BBBRC UK in Bioenergy Research Talk: Landscape session: Biorefining, scale-up technologies, fermentation technologies at New Delhi from 9th - 11th October 2011.
2. Presented poster entitled "Modified Algal Raceway Pond Design for Enhanced Algal Production" at 2ND International conference on Algal Biomass, Biofuels & Bioproducts held during 10-13th June 2012 at Westin San Diego, USA.

DR. GUNJAN PRAKASH

1. Dr. Gunjan Prakash attended the World Science Forum by Biovision, 27-29th March, 2011 held in Lyon, France.
2. Presented poster entitled "Agrobacterium mediated Transformation of marine Chlorella Sp." at 2ND International conference on Algal Biomass, Biofuels & Bioproducts held during 10-13th June 2012 at Westin San Diego, USA.
3. Participated in Hands-on "Workshop on Molecular Biotechnology and Bioinformatics; School of Biotechnology", I2IT, Pune; 9th -13th July 2012.

DR. POOJA JOSHI

1. Presented a poster on "DBT-ICT Lignocellulose Ethanol Technology" at IKMC 2011: Global Innovation Exchange" held at HICC, Hyderabad, India from 16th -17th November 2011.

DR. TEJSHREE KULKARNI

1. Attended Workshops on IP Management / Licensing at Academic Institutions and Best Practices in IP Management and Strategy, held at IIT Bombay on February 2, 2012.

DR. SHAMLAN RESHAMWALA

1. Participated in Workshop on Energy Research for Global Sustainability, held at IIT Bombay on December 8th -9th , 2011.
2. Participated in Workshops on IP Management and Licensing at Academic Institutions and Best Practices in IP Management and Strategy, held at IIT Bombay on February 2nd, 2012.
3. Participated in a workshop on Collaborative Undergraduate Research and Education held at the Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, Mumbai on June 29th -July 1st 2012.

DR. MANJU SHARMA

1. Presented a poster on "DBT-ICT Lignocellulose Ethanol Technology" at IKMC 2011: Global Innovation Exchange" held at HICC, Hyderabad, India from 16th -17th November 2011.
2. Dr. Manju Sharma participated in a one day Research Meet in "Biotechnology, Environmental Science and Phytochemicals" organized by Jai Hind College, Mumbai, India, on 10th December 2011.

STUDENTS

1. Rajesh Vadgama. Comparative Kinetic Study on Enzyme Mediated Hydrolysis of Oil. International Conference on Fat and Oil, Indian Institute of Chemical Technology, Hyderabad, 7th -19th November, 2011.
2. Anil Sivadasan attended a one day Research Meet in Biotechnology, Environmental Science and Phytochemicals, organised by Jai Hind College in collaboration with Konark Group, Mumbai, India on 10th December 2011.
3. Chaitali Vira. Algal Biotechnology: Challenges and Possibilities. Poster presentation at a one day Research Meet in Biotechnology, Environmental Science and Phytochemicals, organised by Jai Hind College in collaboration with Konark Group, Mumbai, India on 10th December 2011.
4. Mrunal Warke. Microbial conversion of Ricinoleic acid into γ-decalactone using immobilized Yarrowia lipolytica. International Conference on Yeast Biology, Indian Institute of Technology, Mumbai, 10th -13th December, 2011.
5. Sneha Sawant attended a conference on "International Conference on Yeast Biology" held at Indian Institute of Technology, Mumbai, from 10th -13th December, 2011.
6. Anand Gupta, Prashant Kumar, Sharmilee Mane. Continuous liquid Solid Circulating Fluidized Bed. Workshop on Continuous & Intensified Process for specialty chemicals, NCL Pune, 19th -20th December 2011.
7. Prashant Kumar. Kafirin Based Microspheres for Controlled Release of Doxorubicin. 63rd Indian Pharmaceutical Congress, Bangalore, 16th -18th December 2011.
8. Sharmilee Mane. Development of Large Scale Extraction of Biopolymers (Prolamines) used for Drug Delivery Applications Doxorubicin. 63rd Indian Pharmaceutical Congress, Bangalore, 16th -18th December 2011.
9. Vinod Amritkar. Extraction of Bioactive Molecules from Apple Pomase: Screening of Solvents and Kinetics. 63rd Indian Pharmaceutical Congress, Bangalore 16th-18th December 2011.
10. Manoj P. Chavan, Febin Pappachan. Tandem Column Chromatographic Process for Isolation of Multiple Products from Single Feedstock. Workshop on Continuous & Intensified Process for specialty chemicals, NCL Pune, 19th -20th December 2011.
11. Sandip N. Kadam. Novel Continuous Counter Current Multistage Fluidized Moving Bed System for Purification of Biochemical's. Workshop on Continuous & Intensified Process for Specialty Chemicals, NCL Pune, 19th -20th December 2011.
12. Swati R. Badgujar participated in "National Symposium on Modern Research Trends and Applications in Life Sciences" held at Jai Hind College, Mumbai, India on 7th January 2012.
13. Gautam Degwekar. An efficient way of immobilizing yeast cells. National Symposium on Modern Research Trends and Applications in Life Sciences held at Elphinstone College Mumbai, India on 7th January, 2012.
14. Swanand Gangal. Algal Biotechnology: Towards development of next generation Biofuels. National Symposium on Modern Research Trends and Applications in Life Sciences held at Elphinstone College Mumbai, India on 7th January, 2012.
15. Suruchi Rao. Comparative Analysis of Large Scale Tandem Mass Spectrometry Database Searching Algorithms. Accelerating Biology 2012: "Computing to Decipher", CDAC, Pune, 15th -17th February 2012.
16. Abhijit Rathi. Gluconic Acid Production in Continuous Bioreactor Using Soluble and Immobilized Glucose Oxidase. Technical Advancements in Chemical and Environmental Engineering, BITS Pilani, Rajasthan, 23rd -24th March, 2012.
17. Lalit Khot. Modeling Metabolic Networks of Microorganisms through the Incorporation of Regulation to Structured Models. Technical Advancements in Chemical and Environmental Engineering, BITS Pilani, Rajasthan, 23rd -24th March, 2012.
18. Suruchi Rao attended International Conference on Advances in Biological Sciences, held at Kannur University, Kerala from 15th -17th March 2012.
19. Anil Sivadasan. Cloning of beta-xylosidase gene from Bacillus subtilis strain 168 and its expression in Escherichia coli. International Conference on Regulatory Network Architecture in Bacteria (RNAB–2012), Shastra University, Thanjavur, Tamil Nadu, 9th - 11th March 2012.
20. Swati R Badgujar. Mutagenic Approach Generated Propionic Acid Producing Mutants from Clostridium acetobutylicum. International Conference on Regulatory Network Architecture in Bacteria (RNAB–2012), Shastra University, Thanjavur, Tamil Nadu, 9th -11th March 2012.
21. Anjali Kanoongo. Over-expression of ilv Operon in E. coli for Improved L-valine Producing Strain. International Conference on Regulatory Network Architecture in Bacteria (RNAB–2012), at Shastra University, Thanjavur, Tamil Nadu, 9th -11th March 2012.
22. Anisha Kashyap attended a workshop on "Hands on Research in Complex Systems" held at Advanced Study Institute, Shanghai Jiao Tong University Sponsored by Abdus Salam International Centre for Theoretical Physics (ICTP) and Shanghai Jiao Tong University, China from 17th -29th June 2012.

EVENTS ORGANIZED:

1. World Intellectual Property Day (26th April 2011)
2. BD Flower program organized by BD Biosciences (18th July 2011)
3. BIA separation seminar (21st July 2011)
4. 2nd National Workshop on Proteomics (24th -26th August 2011)
5. 6th National workshop on Preparative and Process Chromatography, 24th to 26th August 2011 at ICT, Mumbai
6. Intellectual Property Workshop at ICT (27th February 2012)
7. Science day Celebration (28th February 2012)

Industrial Consultancy

a)	Purification of Hormone Proteins	Uni-Sankyo, Hyderabad
b)	Metal Capture and Product Purification	ATUL Ltd, Valsad
c)	Purification of Antibiotics	Strides-Acrolabs, Bangalore
d)	Enzymatic and Microbial Biotransformations and bio-based chemicals	Privi Organics Pvt Ltd, Navi Mumbai
e)	Lignocellulosic Ethanol	India Glycols Ltd. Kashipur
f)	Separation and Purification of Fermentation Products	Tata Chemicals, Pune
g)	Purification of APIs	Tata Chemicals, Ahmedabad
h)	Multi-Technology Lignocellulosic Ethanol Plant	Tata Chemicals, Pune
i)	Adsorbent Characterization & Validation of Chromatographic Skid	Bio-Rad Labratories, USA
j)	Biotransformations and Purifications of Fatty Acids	Acme Synthetic Chemicals

Details of Post-graduate/Ph.D. students who passed out (name, course, title of project)

POST-GRADUATE

S.N.	Name	Course	Title of Project	Supervisor
1	Kunghadkar Akhil	M. Chem Engg.	Conversion of lignin to chemicals	Professor A. M.Lali
2	Kumbhar Shwetali	M. Chem Engg.	Conversion of Holocellulose to Chemicals	Professor A. M.Lali
3	Karkare Rutuparna	M. Tech. (Bioprocess Technology)	Adsorptive chromatography for isolation of biomolecules	Dr. S.B. Kale
4	Joshi Pooja	M. Tech. (Bioprocess Technology)	Designing extraction and purification of natural antioxidants	Dr. S.B. Kale
5	Singh Bhaskar	M. Tech. (Bioprocess Technology)	Separation and enzymatic transformation of natural products	Dr. S.B. Kale
6	Sonawane Rahul	M. Tech. (Bioprocess Technology)	Downstream processing for recovery of multiple products from natural sources	Dr. S.B. Kale

Ph. D

S.N.	Name	Course	Title of Project	Supervisor
1	Nagwekar Pooja	Ph. D (Tech.)	Biotransformations and purification in carbohydrates	Professor A. M.Lali
2	Mishra Yogesh	Ph. D (Tech.)	Design of high resolution chromatographic purification processes for biopharmaceuticals and sugar based compounds	Professor A. M.Lali
3	Tandale Jagdishkumar	Ph. D (Tech.)	Modeling and experimental validation in process chromatography	Professor A. M.Lali
4	Mannambeth Amritraj	Ph. D (Science)	Biocatalytic synthesis and resolution of chiral compounds	Professor A. M.Lali
5	Konde Pravin	Ph. D (Science)	Design and development of enzyme biocatalyst for organic transformations	Professor A. M.Lali
6	Ghosh Bidisha	Ph. D (Science)	Biotransformation and purification of peptides	Professor A. M.Lali
7	Bhanwariya Saroj	Ph. D (Science) Thesis submitted	Biotransformation and enzymatic synthesis of peptides	Professor A. M.Lali
8	Khatri Rachana	Ph. D (Science) Thesis submitted	Strategies for downstream processing of natural products	Professor A. M.Lali

9	Das Chaitali	Ph. D (Science) Thesis submitted	Metabolic analysis of bioethanol fermentation	Professor A. M.Lali
10	Varavadekar Jayesh	Ph. D (Science) Thesis submitted	Technologies for products from lignocellulosic biomass	Professor A. M.Lali
11	Kanjwani Deepak	Ph. D (Tech.) Thesis submitted	Design of preparative scale tandem column chromatographic purification of biomolecules	Professor A. M.Lali
12	Chaya Abhishek	Ph.D.(Sci) Thesis submitted	Process development for the production of biofuels using fermentation technology	Dr. Rekha Matlani

Major Accomplishments

1. Phase I of DBT-ICT-Lignocellulose Ethanol Technology commissioned successfully.
2. Designed process for extraction of prolamins i.e. kafirin and pennisetin from sorghum and pearl millet.
3. Designed new microspheres for controlled drug delivery of drugs (doxorubicin, curcumin, duloxitine etc.) using proteins a biopolymers.
4. Designed novel affinity adsorbents and process for purification of monoclonal and polyclonal antibodies (IgG).
5. Purification and stabilization of hCG and HMG (FSH and LH) from human urine.
6. Developed process for purification of vancomycin (EP grade) from fermentation broth.
7. Extraction and purification of natural second generation antioxidant, Sulforaphane from broccoli waste for cancer treatment.
8. Extraction and purification of natural anti-diabetic (ursolic acid and corosolic acid) and anticancer (garcinol) principles.
9. Designing extraction, purification and crystallization of natural sweeteners, anthocyanins, and carbohydrate based sweeteners (xylitol) from fermentation broth.
10. Development of large scale production of natural sweeteners from stevia.
11. Isolation of potato proteins and whey proteins.
12. Mechanism of retention and its characterization in chromatography using various physic-chemical descriptors and Quantitative Structure Retention Relationship (QSRR).
13. The Centre has been granted Indian patent for invention tilted "A Process for Purification of Immunoglobulins using a Pseudobioaffinity Adsorbent", Granted Patent No: 248707
14. Filed national phase application in USA, EPO, Canada, Australia, New Zealand, Singapore, Malaysia, South Korea, China, Japan, Brazil, South Africa, Vietnam, Philippines (15 countries) for the invention titled "Method for production of fermentable sugars from biomass", WIPO Application No. WO 2010/137039 A2.
15. Filed national phase application in China, S Korea, USA, EPO, Canada for "Continuous Counter Current Fluidized Moving Bed (FMB) and/or Expanded Moving Bed (EMB)" WIPO Application No. WO2010/103541 A2.
16. Filed national phase application in USA for the invention titled "A Process for Purification of Immunoglobulins using a Pseudobioaffinity Adsorbent", PCT No. WO/2009/007993
17. Received BBSRC India Partnering Awards, entitled "Towards process development of bacterial strains able to convert renewables into biofuels and other useful chemical commodities" (Ref: BB/J020427/1) of £2700.

18. Received grant of 20000 USD for Research Project entitled "Value added products from vegetable waste streams" from General Mills Inc. Minneapolis, USA.
19. Received grant of 30000 USD for Research Project entitled "Enhanced solid fat content profiles via enzymatic inter-esterification" from General Mills Inc. Minneapolis, USA.
20. Swati Badgujar received 1st Prize in Poster Presentation "Mutagenic approach generated propionic acid producing mutants from Clostridium acetobutylicum at "International Conference on Regulatory Network Architecture in Bacteria (RNAB–2012)" held at Shastra University, Thanjavur, Tamil Nadu from 9th-11th March 2012.
21. Anjali Kanoongo received 3rd Prize in Poster Presentation "Over-Expression of ilv operon in E. coli for improved L-valine producing strain" at "International Conference on Regulatory Network Architecture in Bacteria (RNAB–2012)" held at Shastra University, Thanjavur, Tamil Nadu from 9th -11th March 2012.

Salient Features of Research Work

PROFESSOR ARVIND M. LALI

Deconstruction of biomass to sugars: Breakdown of lignocellulosic biomass to its basic components namely sugars and phenolics, has been topic of intense research all over the world. My work in my laboratory at ICT currently focuses on generating sugars cheaply from a variety of biomass like agricultural residues, forest waste, and one or the other energy crops like elephant grass.

Biotransformation of sugars to diverse metabolites: Sugars like glucose and xylose are the building blocks for most chemicals in future. However, technologies for conversion of sugars to a variety of chemicals are not yet matured to be commercially viable. My current work focuses on developing scalable technologies for production of a variety of basic chemicals from sugars that have been derived from non-food renewables like lignocellulosic biomass.

Renewable energy and Biofuels: Global warming and carbon dioxide emissions have been topic of hot discussion and research over last 3-5 years. One of the major thrust to reduce carbon emissions has been to replace energy production and fuels from fossil sources. Renewable energy and fuels have become current leading areas for research funding. I have been now involved in conducting research in the following related areas: (a) liquid biofuels like alcohols from agricultural wastes; (b) bio-CNG production from biomass; (c) algal biotechnology for biofuel and energy production.

DR. REKHA MATLANI

The increase in demand of petroleum products has also increased the concern for environmental issues like green house effect and depletion of fossil fuels. To meet the future demand of fuels, renewable energy sources and bio-fuels are explored as an alternative. Current research area includes targeted and purposeful alteration of metabolic pathways found in an organism to utilize cellular pathways for chemical transformation, designing tools for engineering microbes and analyze the metabolic flux for production of biofuels and biochemicals. Research also encompasses enzyme engineering toward increased pH, temperature tolerance and substrate inhibition for industrial applications.

DR. ANNAMMA ANIL ODANETH

The search for better enzymes for targeted activities and integration of processes to harness its potential is the scope of our research. The area of research for my group is divided into two main segments, namely; Enzyme Engineering and Process Engineering. These two approaches help integrate a rather unique approach in the field of Enzyme Technology, wherein, biotransformation is planned at the atomic scale, developed at the molecular scale and integrated at the laboratory and pilot scale. The enzyme engineering module works on in- silico enzyme design followed by applying tools from protein engineering. The work is primarily directed towards the

development of enzymes with better physico-chemical properties and for targeted biotransformation problems. The Process Engineering module focuses on reaction engineering, reactor design and process integration and intensification. This unique combination of basic science and engineering principles has helped develop enzyme technologies with better efficiencies and end-product qualities.

We are currently working on projects that employ enzymes for different fuel, food and pharma applications. The work entails processing agricultural residues and by-products of the agro-industry for valorization. The projects we handle include development of chemical and enzymatic methods and reactor systems for hydrolysing polysaccharides to sugars for fermentation and for neutraceuticals, proteins to bioactive peptides and oils to fatty acids that can be further derivatized for specific applications in food, pharma and lubricant industries. Major achievements of the year have been working out processing platforms for three industrial partners for each of the projects we have been working on. These are in the different phases of execution at the pilot plant level.

DR. SANDEEP KALE

The research work has mainly concentrated on design and development of integrated and intensified processes through innovative ideas and strategic approach of Quality by Design (QbD). Another important segment is design of affinity ligands using molecular simulation/modeling (virtual screening) for purification and characterization of porous, polymeric adsorbents. Third area of work involves design of bio-nano/microparticles for novel drug delivery system (NDDS) based on natural polymers and synthesis of bioconjugates as well as derivatives of natural products using computer simulations (i.e. Computer aided drug design, CAD). Fourth area of work involves fermentation and biocatalysis.

In the case of design of purification processes, innovative processes for purification of biopharmaceuticals, enzymes, antibiotics, vitamins, natural products, synthetic API, intermediates, impurities and value added products agricultural wastes/products leading to secondary agriculture concept is developed. Systematic approach to thermodynamic and hydrodynamic characterization of chromatographic adsorbents, processes and products has been developed. Different strategies for stabilization of product during and after the purification are also developed. In certain cases, removal of specific impurities or endotoxins was achieved using selectivity engineering in the processes through critical attributes based process design. Integration of chromatographic processes with membrane filtration, crystallization and precipitation was done through design of hybrid approach to benefit overall manufacture. Further, designing of chromatographic reactors/systems (LSCFB, FMB, MCCC) for large scale continuous or batch operations has been accomplished.

Using above mentioned approaches novel processes for purification of therapeutic grade IgG (monoclonal and polyclonal), antibiotics (vancomycin, penicillin, rifamycin B, adipoyl-7ADCA), vitamins (Vitamin B12), hormones (hCG, HMG, FSH, LH), Natural products (anthocyanins, garcinol, ursolic acid, oleanolic acid, scopoletin, artemisinin, hydroxy citric acid), synthetic API (dutasteride, rizatriptan, rosiglitazone, diclofenac dimer), sweetners (sucralose, xylitol), other proteins (Kafirin, pennisetin) etc. has been developed and some of them are commercialized.

Molecular simulation using software's and combining them with wet lab studies has resulted into new adsorbent for affinity purification of antibodies with high specificity. Similarly a controlled pore size based adsorbents were exploited for hydrophobic size exclusion chromatography of proteins for polishing step in downstream processing. Such strategies were also exploited for designing of new high capacity IMAC adsorbents, and adsorbents based on dendrimers for enhanced capacity and selectivity.

Selective precipitation by complexation followed by membrane filtration and chromatography for purification and endotoxin removal has been investigated and found successful for various products making this technology as unique technology to address endotoxin removal issues in pharma/biopharma industries.

In case of NDDS, novel bio-nanoparticles were prepared using hydrophobic proteins and characterized for their delayed release pattern as well as for their effect on stabilization of drug candidates from stress conditions like pH and oxidation was investigated. Recently, the derivatization of natural product and designing of bioconjugates of drug with specific proteins is being investigated to increased potency, efficacy, safety and bioavailability. Further, conversion of natural proteins into valuable supplements through enzymatic hydrolysis and converting them into surfactants is currently being investigated. Current research activities are aimed at exploring and exploiting science underpinning the bio-processing for useful inventions through understanding of mechanisms in each process (developed or adopted) and use of QbD, MVDA for design of robust and economical processes.

DR. REENA PANDIT

Currently actively participating in Department Biotechnology (DBT), Govt. of India funded project entitled "Development of Biosciences and Biotechnologies for next generation biofuels". With the team of Ph. D. and M. Tech. students my research activity involves investigating a diverse array of biological/technological interventions to address relevant problems in fields of algal biofuel. Aims of current projects include investigating microalgae as a feedstock for biofuels, improving the algal feedstock yield by media engineering/consortia development, investigating photosynthetic efficiencies of promising algal species. Quite a few cyanobacteria and algal species have been identified as potential candidates as feed stocks for biofuel with respect to their low doubling time and low nutrient requirements. Efforts have been initiated to bring in better understanding and expertise for further manipulation of these species to improve their prospectus as biofuel.

The group is also involved in modification of algal production system wherein raceway ponds are being designed that provides the growing algal cells with the required dynamic light environment; power efficient mixing and achieves higher surface productivities than the best reported figures. The modified design uses a light dilution principle wherein every cell is exposed to intermittent but sufficient light and dark cycles and improves photosynthetic efficiencies and overall enhances sustainability of algal production and improve economic competitiveness.

DR. GUNJAN PRAKASH

Current research work is focused on development of algal genetic manipulation tools and genetic engineering of model as well as non conventional algal species for biofuel. The aim of genetic engineering is to increase the photosynthetic efficiency of algal cells by improving the efficiency of Carbon Concentration Mechanism (CCM) and overcoming the enzymatic limitation of Calvin Cycle to increase the overall biomass productivity. Another aspect is development of more robust algal strain by engineering of stress responsive genes.

Industrial production of acids is being investigated by study of Propionibacterium using medium engineering, fermentative and genetic engineering approach.

DR. ARUNA MAHESH

Biotechnological processes with the help of microorganisms can be used for synthesis of platform chemicals. With increasing trend towards "green process" to reduce green house gases (GHG), biomass derived sugars can be used as starting material to produce important chemicals. Present extensive information available for metabolic pathways of microbial, animal or plant system, makes it easier to toggle the genes to express product of interest in a suitable host microorganism forming the basis of Synthetic Biology.

Ongoing projects emphasizing the above mentioned aspects have been devised to synthesize aroma and flavour chemicals of industrial importance. Research focuses on optimizing relevant pathways and incorporating

new genes from other sources of biological origin in host Pseudomonas putida. This microbe has been chosen as it has the ability to grow and tolerate xenobiotics as carbon source and gives it an upper edge to address various toxicity issues related to synthesis of chemicals by fermentation. P. putida is amenable to microbiological and molecular biology based manipulations.

DR. SUPRIYA RATNAPARKHE

The research focuses mainly on characterization and deconstruction of lignocellulosic biomass. The biomasses used as source of feedstock for bioethanol industry differ from each other considerably in their composition, for example biomass coming from woody sources is richer in lignin content compared to that from grasses. The separation of the components of biomass from each other in a pure form as far as possible has its benefits as each component has a potential to produce commercially viable metabolites. The structural and biochemical changes incorporated in the cellulose and hemicelluloses components of the biomass due to the pre-treatments will be carried out using various methods including microscopic analysis of cellulose microfiber structure by Atomic Force Microscopy or Fluorescence Microscopy with or without the use of probes such as Carbohydrate binding modules. This data will determine the structure of cellulose microfibrils derived from various LBMs and the changes incorporated in them due to the pre-treatment methodology applied. Besides this, X-ray diffraction studies will be conducted to obtain the crystallization degree of cellulose. Characterization of lignin will be carried out using methods described for cellulose characterization. Besides those, experiments have been designed for characterization of lignin for various parameters such as G:S:H ratio by DFRC method and the changes incorporated by various pre-treatments will also be studied using NMR and NIR spectroscopy. High throughput technologies are being designed for characterization of various biomass types. Glycome profiling for sugars in the hemicelluloses obtained from various LBMs will be carried out using monoclonal antibodies available against soluble sugars. A part of my research also involves generation of chimeric enzymes and concoctions of enzymes for efficient and cost-effective hydrolysis of lignocellulosic biomass. Various combinations of glycoside hydrolases and Carbohydrate binding modules will be used for evaluation of biomass deconstruction efficiency.

DR. ABHISHEK MULE

Fermentation technology is the blend of art, science and experience. We are targeting fermentation to understand the 'science' of the process. The work is primarily focused on ethanol fermentation, in which we are understanding glucose and xylose fermentation in yeast species. Detailed butanol fermentation is also being carried out using various Clostridium species; in the process special attention is being given to controlling various factors affecting sporulation. Various approaches like fed batch, continuous fermentation are being evaluated for ethanol and butanol fermentation. Various immobilization matrices are being evaluated for continuous fermentation. Lignin a major biopolymer formed in the nature is being targeted to bio-degradation by which it can be converted to useful intermediates using suitable biocatalysts.

DR. SHAMLAN RESHAMWALA

My research focuses on the use of abundant, renewable feedstocks for synthesis of fuels and speciality chemicals. For this purpose, a number of molecular and synthetic biology tools are employed, including genetic manipulation of microorganisms, metabolic engineering of novel pathways and enzyme modification for enhanced catalysis and robustness.

Any other relevant additional information

FACULTY MEMBER	EMAIL
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Dr. Shamlan Reshamwala	ss.reshamwala@ictmumbai.edu.in

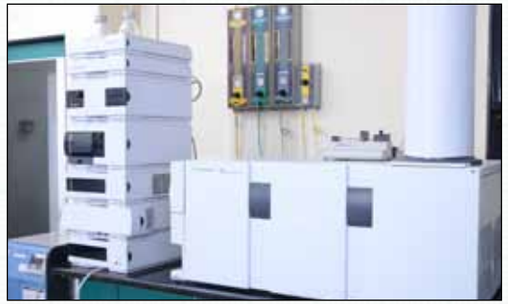
Photographs

Algae Environmental Chamber

Photographs

Raceway Ponds

Mass Spectrometry Lab



Molecular Biology Lab

GC-MS

Purification Lab

Pilot Plant

Fermentation Lab

Enzyme Lab

HPLC Room

Photographs

DBT-ICT-CEB Faculty, support staff and students

Faculty and Support Staff

Support Staff

Group Photographs with Research Students

Biofuel Technology Group

Separation & Bioprocess Technology Group

Algal Biotechnology Group

Enzyme Technology Group

Fermentation Technology Group

Synthetic Biology Group

DEPARTMENT OF

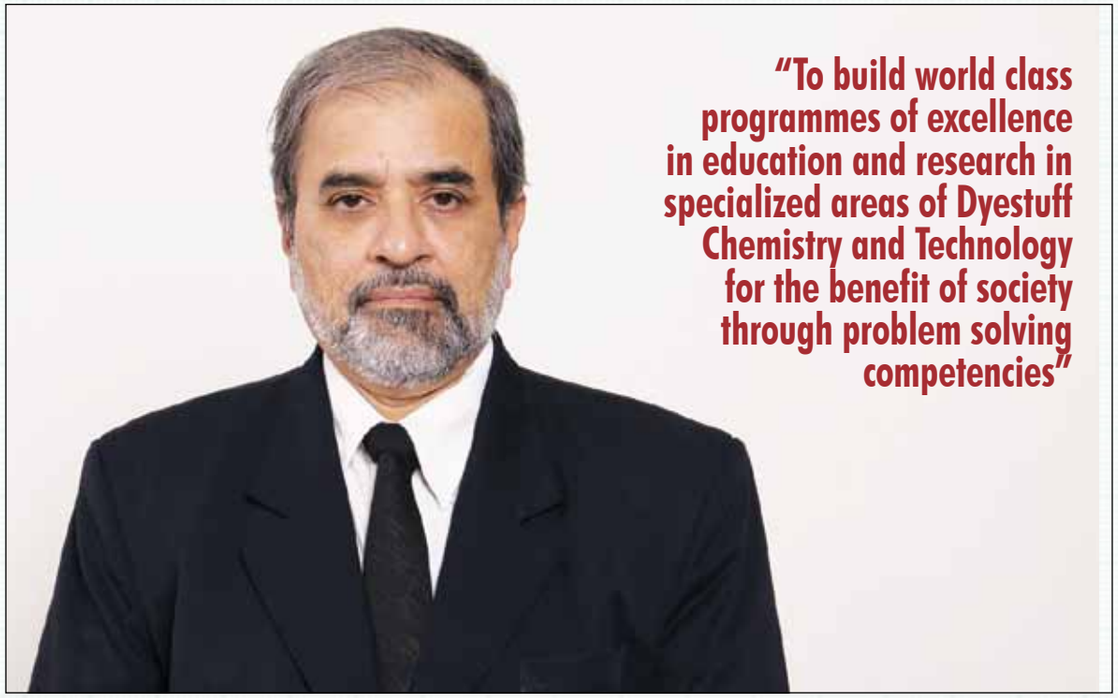
DYESTUFF TECHNOLOGY

From Left to Right

Ganapati Subray Shankarling
B. Sc. (Hon), B. Sc (Tech), M. Sc (Tech),Ph.D. (Tech).
Associate Professor of Dyestuff Technology

Prakash M Bhate
B.Sc. (Tech.), Ph.D.
Professor

N. SEKAR
B.Sc (Hon), B.Sc (Tech), Ph.D (Tech),
B. A (Music), M.A (German)
Professor



Prakash M. Bhate
Bsc. (Tech.), Ph.D.
Head of the Department

Department of Dyestuff Technology was established in 1944 under the stewardship of Professor K. Venkataraman, the then director of Institute of Chemical Technology (ICT, formerly known as UDCT), University of Mumbai.The quality of training in chemistry and engineering imparted to the students is reflected in the progress they make in their individual careers in industry or academia, locally or globally. The Department not only pursues high quality research but also maintains a healthy academia-industry interaction by organizing an international conference "Convention on Colorants" (COC) along with Dyestuff Manufacturers Association of India (DMAI) every alternateyear. The Department of Dyestuff Technology at Institute of Chemical Technology is a unique department providing Bachelor's, Master's and Doctoral degree in Dyestuff Technology.

The Department participates in interdisciplinary M. Tech. as well as Doctoral programs in Perfumery & Flavor Technology and Bioprocess Technology. The Department also offers a Doctoral degree programme in Science. Currently there are 3 recognized guides for doctoral programs. As many as 72 research fellows, significantly more than the number (47) last year,are currently working on various projects – colorants for hi-tech applications, fluorescent dyes, lasers, ink jet printing, optical recording devices, solar cells, high performance pigments, green technology, carbohydrate chemistry, synthesis of natural products, etc.

The Department is energeticallyparticipating for the welfare of the society by organizing various programmes like "Workshop on Science Awareness" for school children. Research students of the Department also deliver lectures every year in collaboration with Marathi Vidyan Parishad in various rural part of Maharashtra for popularizing science.

Under the successive leadership of highly experienced, talented and hard-working scientists and scholars such as Professors B. D. Tilak, S. V. Sunthankar, S. Seshadri, D. W. Rangnekar and V R Kanetkar the Department has trained more than 1000 undergraduate students and over 450 postgraduate students.

Mission Statement:

"To build world class programmes of excellence in education and research in specialized areas of Dyestuff Chemistry and Technology for the benefit of society through problem solving competencies"

Department of Dyestuff Technology – Vision 2020

The Department aspires to be one of the world's top ten colour chemistry departments by 2020. It will do so by:

- Providing knowledge and skill based training at the undergraduate level by designing, teaching and periodically upgrading a colour chemistry and technology syllabus in line with current and anticipated trends in industry and academia
- Pursuing world-class research in the colourants and related areas – basic textile and leather coloration, functional colourants, organic process technology and specialty chemicals
- Proactively developing and maintaining close interaction with national and international research laboratories, universities and chemical industries

Our leaders:

Professor K. Venkataraman (1944-1958) : The first Head of the Department did pioneering work in synthetic dyestuff chemistry, natural colorants, structural elucidation and spectral studies. His volumes on "The Chemistry of Synthetic Dyes" are still widely read and treated as the bible for dyestuff chemists and technologists worldwide. These have been translated into more than 14 languages.

Professor B. D. Tilak (1958-1966) : Worked extensively in the field of anthraquinone and naphthaquinone vat dyes, and on azide chemistry.

Professor S. V. Sunthankar (1966-1979) : In addition to dyestuff chemistry he initiated work in the highly challenging field ofsteroid chemistry. He also worked in the field of pesticides and silicon compounds.

Professor S. Seshadri (1979-1996) : His contribution in Vielsmeier-Haack reaction and coumarin chemistry is very well recognized worldwide.

Professor D. W. Rangnekar (1996-2000) : He has published many research publications in the area of heterocyclic chemistry and was involved in initiating BRNS-BARC sponsored projects on the synthesis of laser dyes & solid state lasers

Professor V. R. Kanetkar (2000-2008) : The projects initiated by Professor Rangnekar, which became vital for the country post Pokhran-II, were successfully executed and completed by him. He initiated a shift in research from conventional colorants for textiles and leather to functional colorants. He also extensively modernized and refurbished DRL (Dyes Research Laboratory). He was awarded "The Best Teacher award" by Government of Maharashtra.

Professor P. M. Bhate (2008 – till date): Actively working on development of new reactive systems for dyeing cellulose and development of new vat dyes. Initiated work in the Department on the use of carbohydrates for chiral synthesis and synthesis of natural products.Under his leadership, the Department is continuing the journey of modernization and upgradation with installation of new fume hoods and procurement of instruments and laboratory equipment.

Present Scenario:

Currently the Department has the following human resource:

No. of Students

Post Doctoral - 1, Doctorate- 55, Masters- 16, Undergraduate - 76

Total Number of Faculty (current): 03

(02 Professors, 01 Reader)

Prakash M Bhate

B.Sc. (Tech.), Ph.D.

Professor

Fellowships/ Memberships of Professional Bodies :

Fellow, Society of Dyers and Colourists; Member, Society of Dyers and Colourists; Member, American Chemical Society

Highlights of research work done and its impact (maximum two single-spaced pages with figures/diagrams etc.):

Chiral synthesis of solistatin and solistatinol from D-glucose is under investigation.

A study of intramolecular Diels-Alder reaction of carbohydrate and amino-acid derived trienes is in progress.

Total synthesis of some natural products is in progress.

Publications, Patents Etc.:

a. Total No. of Publications (peer reviewed) so far : 4
b. Total No. of Patents : Nil
c. Total No. Conference proceedings/papers : Nil
d. Total No. of Seminars/Lectures/ Orations delivered : 11
e. Total No. of Ph.D.s Awarded as single/ Co-Guide : Nil
f. Total No. of Masters Awarded as single/ Co-Guide : Nil

Subjects taught during 2011-12:

Chemistry and Technology of Natural Dyes – M. Tech. and Ph.D.
Mechanism of Organic Reactions – M. Tech. and Ph.D.
Technology of Intermediates and Colorants – IV – Final Year B. Tech.
Chemistry and Technology of Disperse
Dyes and Optical Brighteners – T. Y. B. Tech.
Technology of Organic Processes – T. Y. B. Tech.
Chemistry and Technology of Naphthalene
Intermediates – S. Y. B. Tech.
Chemistry and Technology of Anthraquinone Intermediates – S. Y. B. Tech.

Research interests:

Fibre reactive dyes, vat dyes, carbohydrate chemistry, natural product synthesis

Number of research students currently working :

Ph.D.(Sc) - 7
M.Tech. - 2

Number of sponsored projects:

Government - 3

Special Awards/Honours:

Elected Fellow of Society of Dyers and Colourists

N. SEKAR

B.Sc (Hon), B.Sc (Tech), Ph.D (Tech), B. A (Music), M.A (German)

Professor

Fellowships/ Memberships of Professional Bodies:

Fellow of Society of Dyers and Colourists, (UK)

Highlights of research work done and its impart (maximum two single-spaced pages with figures/diagrams etc.):

The present research activities include synthesis of multistep heterocyclic fluorescent compounds for biosensor, medicinal diagnostics and sensor for security applications. Process development of commercially important intermediates. The synthesis involves molecular design of fused heterocyclic compounds with the features of extended Styryl system giving NIR absorption and Fluorescence. We are also working on synthesis of nanomaterials for high-tech application and dyes for solar cell. Working on greener methods for heterocyclic systems, perfumes and flavors technology.Computational study for synthesized molecules.

Publications, Patents Etc.:

a. Total No. of Publications (peer reviewed) so far : 51
b. Total No. of Patents: 05 Filed
c. Total No. Conference proceedings/papers :91
d. Total No. of Seminars/Lectures/ Orations delivered : 21
e. Total No. of Ph.D.s Awarded as single/ Co-Guide : 02
f. Total No. of Masters Awarded as single/ Co-Guide :16
g. Total No of articles Expository articles : 260
h. Index :

No. of Citations : 07

Subjects taught during 2011-12:

a) **Ph. D./M. Tech. (Course Work):**
Fluorescent Colorants in Bio-imaging
Chemistry and Technology of Agrochemicals
Chemistry and Technology of High Performance Pigments
Chemistry and Technology of Functional Dyes
Chemistry of fluorescent Dyes

b) **B. Tech.:**
Mechanisms of Organic Reactions
Chemistry of Substrates
Color Chemistry: an Introduction
Chemistry of Heterocyclic Compounds
Chemistry and Technology of Direct, Acid, and Sulphur Dyes
Use of analytical instruments in synthetic organic chemistry

Research interests:

Synthesis of multistep Heterocyclic and Fused Heterocyclic compounds, Process development of intermediates, Fluorescent compounds for bio- sensors, medical diagnostics and security sensing, Laser Dyes, NIR absorbing, fluorescing and reflecting colorants, Tinctorially strong disperse dyes, Extended Styryl dyes, Metal complex dyes for photovoltaics, Greener Methods for fluorescent compounds, Synthesis and formulation of perfumes and flavors, Computational Chemistry.

Number of research students currently working :

P.D.F. - 01 Ph.D. (Tech.) - 01
Ph.D. (Sc) - 30 M.Tech. - 06

Number of research publications:

International - 18
Peer-reviewed- 18
Conference proceeding- 21
Books chapter - 02

Number of patents:

Indian – 05 Filed

Number of sponsored projects:

Government- 06 Private- 01

Professional Activities (Membership of important Committees) :

1. Co-ordinator for the Centre for Physico-Chemical Aspects in Textiles, Fibres, Dyes and Polymers (UGC-SAP).
2. Expert member of a team of delegates from India for "Joint Indo-Russia Workshop on Immunoassay for clinical/ environmental monitoring" held at Russia in September 2009.
3. Appointed as an expert committee member by DST, Govt. of India to look into the pollution problems of colorants Industry in Ankleshwar.
4. Member, peer reviewing Committee, Dyes & Pigments (Elsevier)
5. Member, Editorial Board, Current Chemistry Letter.
6. Editorial Advisor to Colourage, Colour Publications
7. Life member – UDCT Alumni Association
8. Fellow of Society of Dyers and Colourists, (UK)
9. Fellow of Association of Chemical Technologists, India
10. Associate member of Institution of Chemical Engineers
11. Fellow of Indian Chemical Society
12. Fellow of Society for the Advancement of Electro-chemical Science and Technology
13. Fellow of Indian Membrane Society
14. Fellow of Indian Mathematical Society
15. Member of Board of Studies PG Department of Chemistry AVVMSP college (Bharathidasan University)
16. Examiner For Ph.D. in Industrial Chemistry (Industrial chemistry Department, Alagappa University) (3 Thesis examined)
17. Examiner (Paper Setter) for M.Tech. (Textile Technology) on Advanced Dyestuff Chemistry (Textile Technology Department, Anna University).
18. Examiner for Ph.D. Thesis for Bio-Technology in CFTRI, Mysore, CSIR Laboratory. (one Thesis examined)
19. Examiner for Ph. D. Thesis for Physical Chemistry in Madras University.

20. Examiner for Ph. D. Thesis for Organic Chemistry in Amritsar University.
21. Examiner for Ph. D. Thesis for Inorganic Chemistry in Bharidasan University.
22. Reviewer: Dyes and Pigments, Journal of Fluorescence, Journal of Saudi Chemical Society, Coloration Technology, Pigment and Resin Technology.
23. Expert Member from AICTE for accreditation of Engineering Colleges with in India.
24. Appointed as Expert member on UGC-CAS in JNDU University, Amritsar (March 2011 onwords)

Special Awards/ Honours:

1. Dr. Vikas Padalkar awarded Dr. Ram Sabnis best thesis award of year 2011-2012.
2. Dr. Vikas Padalkarawarded best paper presentation award in National Conference on Recent Trends in Nano-Technology, Organized by Birla College Kalyan, March 1-2, 2011.
3. Mr. Vinod Gupta awarded with 5th UGC-TEC Consortium Agreement to visit University of Mauritius for a period of 28th Nov 2011- 24th Feb 2012 for research collaboration.
4. Professor N. Sekarawarded with 5th UGC-TEC Consortium Agreement to visit University of Mauritius for a period of 4th Jan- 31st Jan 2012 for research collaboration.
5. Mr. Sachin Marger has been awarded with 5th UGC-TEC Consortium Agreement to visit University of Mauritius.
6. Professor N. Sekar, became a member of editorial board of Chemistry Current Letter Journal.

Ganapati Subray Shankarling

B. Sc. (Hon), B. Sc (Tech), M. Sc (Tech),Ph.D. (Tech).

Associate Professor of Dyestuff Technology

Subjects taught:

Chemistry of Intermediates and Colorants -1, Technology of Intermediates and Colorants-1, Analysis of Intermediates and Dyes, Technology of Intermediates and Colorants-III, Technology of Intermediates and Colorants-IV, Chemistry of Intermediates, Colorants-V, Chemistry and technology of Natural dyes, Chemistry of Perfumes and Flavours, Advanced Dyestuff Chemistry II, Synthetic Perfume and Flavour Chemistry

Research interests:

Functional colorants for Dye Sensitized Solar Cell (DSSC),Colorants for Non-Linear Optics (NLO),Colorants for Thermochromic and photochromic, laser, Security application, Colorants for biological and medicinal fields, Synthesis of Fluorescent Dyes and Process Chemistry, Flavor and Perfumery Chemistry, Green Chemistry and Technology mainly development of environmentally benign synthetic procedure for organic synthesis. High Performance Pigments Preparation and application of ionic liquids for organic synthesis Carbon dioxide fixation into valuable chemicals

Number of research students :

Ph.D. (Sci) - 18

M. Tech. - 07

Number of research publications :

International- 18
National- 02
Peer-reviewed- 20

Number of patents :

International - 05
Indian – 09

Number of sponsored projects :

Government - 02
Private - 02

Professional Activities :

Administrative Co-ordinator for Perfumery and Flavours Trustee, National Kannada Education Society, Wadala (West) Trustee, Society of Dyers and Colourists, India. Secretary, International Convention on Colorants 2011 Life Member, Association of Colour Chemists and Technologists Life member, IIChE Life Member -UDCT Alumni Association

Special Awards/Honours :

Ms. Poonam M. Pawar, was awarded with Dr. S.R.Purao Endowment Best Research Publication Prize for the publication in Green Chemistry, 2011, Vol 13, 2130

Mr. H. R. Fegade
Instrument Mechanic

Mr. S. B. Sonawane
Senior Laboratory Assistant

Mr. Anand Patil
Laboratory Assistant

Mr. A. R. Rawool
Laboratory Assistant

Mr. S. B. Magdum
Laboratory Assistant

Mr. Y. S. Chandiwade
Laboratory Attendant

Mr. P. R. Dalvi
Laboratory Attendant

Mr. P. B. Rana
Laboratory Attendant

Undergraduate students' seminars/projects/home papers:

SEMINARS

No.	Name of the Student	Topic	Research Guide
1	Gupta Priya	Overview of filtering media used in chemical plants	Professor P.M. Bhate
2	Joshi Madhur	Dispersing agents - chemistry and applications	Professor P.M. Bhate
3	Mulay Prajakatta	Handling ethylene oxide in chemical plants	Professor P.M. Bhate
4	Sancheti Sonam	Black dyes for cotton	Professor P.M. Bhate
5	Shaikh Ahmedraza	Security colorants	Professor P.M. Bhate
6	Shivdas Prerana	Natural mordants for dyeing of cotton and wool	Professor P.M. Bhate
7	Pawar Shashank	Use of Sandmeyer reaction in colour chemistry	Professor P.M. Bhate
8	Vartak Varun	Overview of vacuum generating systems in chemical plants	Professor P.M. Bhate

PROJECT / HOME PAPER

No.	Name of the Student	Topic
1	Gupta Deeveesha	2-Nitro-p-cresyl methyl ether
2	Joglekar Amruta	o-Nitrocinnamic acid
3	Joshi Madhur	3,4-Diaminobenzoic acid
4	Prasad Priyaa	4-Aminobenzamide
5	Sarode Santosh	1-Naphthylamine-2,4-disulphonic acid
6	Shaikh Ahmedraza	2,4-Dichloronitrobenzene
7	Shivdas Prerana	3-Nitro-p-anisic acid
8	Vartak Varun	p-Toluidine-3-sulphonic acid

Post graduate students' seminars/projects

SEMINARS

No.	Name of the Student	Topic	Previous Institute	Research Guide
1.	Deshmukh Pratik	Colour production in digital cameras		Professor P.M. Bhate
2.	Ms. Pallavi Jalkote	Synthesis of Musk odorants	Marathwada Agricultural University, Parbhani	Professor N. Sekar
3.	Mr. R. V. Khandekar	Greener methods for the preparation of fluorescent dyes	UDCT, Mumbai.	Professor N. Sekar
4.	Ankush Chinchane	Studies in Perfumery comp-ounds	Marathwada Agricultural University, Parbhani	Professor N. Sekar
5.	Yogita Bhatiya	Synthesis of Fluorescent Dyesand their applications	Mumbai University	Professor N. Sekar
6.	Supriya Patil	Greener ways of making fluorescent colorants	UDCT, Ja lagaon	Professor N. Sekar
7.	Ashwin Wasnik	NIR Active Colorants and their Synthesis	Swami Ramanand Teerth Marathwada University	Professor N. Sekar

RESEARCH PROJECTS

Ph.D. (TECH)

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Mande Prashant	Institute of Chemical Technology	To be Decided	Professor N. Sekar

Ph.D. (SCIENCE)

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Kalmode Hanuman	Nowrosjee Wadia College, Pune	Chiral Synthesis from Carbo-hydrate Precursors	Professor P M Bhate
2	Vadagaonkar Kamlesh	H. P. T. Arts and R. Y. K. Science College, Nashik	Studies in Colorants	Professor P M Bhate
3	Nazim Aleem	Shri Shivaji College of Arts, Commerce & Science, Akola	Synthesis of Natural Products	Professor P M Bhate
4	Rokade Sunil	Ahmednagar College Ahmednagar	Synthesis of Natural Products	Professor P M Bhate
5	Garande Ashok	Ahmednagar College Ahmednagar	Synthesis of Natural Products	Professor P M Bhate
6	Dugane Rajaram	Department of Chemistry, Dr. BAMU, Aurangabad	Studies in Chiral Synthesis	Professor P M Bhate
7	Vijilatadevi Rajkumari	Ahmednagar College Ahmednagar	Synthesis of Natural Products	Professor P M Bhate
1	Umape Prashant	Poona College, Pune	Synthesis of functional colorants	Professor N. Sekar
2	Gupta Vinod	KET's V. G. Vaze College. Mulund, Mumbai.	Synthesis of functional colorants with large hyperpolarisability and improved heat stability	Professor N. Sekar
3	Phatangare Kiran	Abasaheb Garware College Pune	Synthesis of fused heterocyclic colorants for its functional applications	Professor N. Sekar
4	Satam Manjaree	Patkar College, Goregaon(W), Mumbai.	Synthesis of Fused Heterocyclic Colorants for Functional applications	Professor N. Sekar
5	Choudhary Amol	Vidyabharti Mahavidyalaya, Amravati.	Synthesis and Powder Handling of Pigments	Professor N. Sekar
6	Margar Sachin	Abasaheb Garware College, Pune.	Synthesis o Novel Coumarin Derivatives and Colorants Based on Fulvenes	Professor N. Sekar
7	Deshmukh Mininath	New Art's, Commerce & Science College, Ahmednagar.	Synthesis of Fluorescent Colorants for Functional Applications	Professor N. Sekar
8	Tathe Abhinav	New Art's, Commerce & Science College, Ahmednagar.	Synthesis of red emitting coumarin colorants	Professor N. Sekar
9	Thorat Kishor	Abasaheb Garware College, Pune.	Synthesis of Novel Fluorescent Organo-Boron and Acridine Derivatives for Biological Applications	Professor N. Sekar
10	Telore Rahul	Department of Chemistry, University of Pune.	Synthesis of Near Infrared Absorbing and Emitting Colorants for Biological Applications	Professor N. Sekar
11	Jadhav Manoj	KET's V. G. Vaze College. Mulund, Mumbai.	Synthesis of Novel Colorants for Dyes Sensitized Solar Cells	Professor N. Sekar
12	Lanke Sandip	B. J. S. College, Wagholi, Pune.	Synthesis of Near-Infrared active fluorescent Colorants for Biological applications	Professor N. Sekar
13	Chemate Santosh	B. J. S. College, Wagholi, Pune.	Synthesis of Fluorescent Fused Pyrrole Derivatives for Biological Applications	Professor N. Sekar

14	Tayade Rajratna	Shri Shivaji Science College, Amravati	Synthesis & Application of Fluorescent Colorants Containing Phosphonic Acid Residue	Professor N. Sekar
15	Patil Sharad	North Maharashtra University, Jalgaon.	Greener Routes for Heterocyclic Intermediate in synthesis of Fluorescent Colorants.	Professor N. Sekar
16	Kothavale Shantaram	Abasaheb Garware College, Pune.	Synthesis of Fluorescent Colorants for their Biological Applications	Professor N. Sekar
17	Agale Pramod	Fergusson College, Pune.	Synthesis of flourescent colorants and their biological applications	Professor N. Sekar
18	Shreykar Milind	KET's V. G. Vaze College. Mulund, Mumbai.	Synthesis of novel red emitting coumarins and ESIPT dyes for functional applications.	Professor N. Sekar
19	Thakare Shrikant	Vidyabharti Mahavidyalaya Amaravati	Synthesis of High Performance Fluorescent Colorants with Enhanced Photo physical properties	Professor N. Sekar
20	Ghorpade Seema	Shivaji University Kolhapur	Synthesis high performance fluorescent colorants and their biological applications	Professor N. Sekar
21	More Ankush	S.S.G.M. College, Kopargon	Design and synthesis of efficient fluorescent dyes with enhanced photophysical properties	Professor N. Sekar
22	Kataria Santosh	Ahmednagar College	Synthesis of fused heterocycles with high hyperpolarisability	Professor N. Sekar
23	Borade Nandkumar	New Arts, Science and Commerce College Ahmednagar	Greener methods for the synthesis of fluorescent fused heterocycles	Professor N. Sekar
24	Jadhav Siddheshwar	Shivaji University	Synthesis of fused heterocyclic fluorophores with non linear optical properties	Professor N. Sekar
25	Warde Umesh	Ahmednagar College	Synthesis of Novel High Performances Functional Colorants	Professor N. Sekar
26	Mallah Ramnath	Birala College Kalyan	Synthesis of Highly Fluorescent Fused Heterocyclic Compounds	Professor N. Sekar
27	Gawale Yogesh	B.N.N College, Bhiwindi, Thane	Synthesis and photophysical properties of functional molecules	Professor N. Sekar
28	Earande Yogesh	S.S.G.M. College, Kopargon	Greener Methods for Synthesis of Heterocyclic Compounds	Professor N. Sekar
29	Archana Bhagwat	New Arts, Science & Commerce College Ahmednagar		Professor N. Sekar
30	Patil Pradip	North Maharashtra University Jalgon.	Synthesis and Photophysical Properties of Novel Fluorescent Fused Heterocycles	Professor N. Sekar
1.	Preetam Moolya	RPG Life Sciences	Synthesis of High performance colorants	Dr. G. S. Shankarling
2.	Poonam Pawar	Cipla Pharma	Synthetic utility of Anhydrides and Ionic liquids	Dr. G.S. Shankarling
3.	Sunanda Phadtare	Merck Pharma	Synthesis of Novel colorants and Synthetic Utility of Ionic Liquid	Dr. G.S. Shankarling
4.	Balvant Singh	Institute of Science	Synthesis of Novel colorants and Utility of Ionic Liquid in Synthesis	Dr. G.S. Shankarling
5.	Hyacintha Lobo	Institute of Science	Synthesis of Novel colorants for High- Tech applications	Dr. G.S. Shankarling
6.	Urmiladevi Yadav	Mumbai University, Dept.of Chemistry	Design and synthesis of novel colorants	Dr. G.S. Shankarling
7.	Shailesh Vajekar	Ruparel College, Mumbai	Study and synthesis of novel colorant for High-tech application	Dr. G.S. Shankarling
8.	Anita Ghuge	Syngenta Biosciences Pvt. Ltd.	Environmentally benign metho-ds for synthesis of colorants & heterocycles for High-Tech applications	Dr. G.S. Shankarling
9.	Vilas Patil	Technova Imaging System Pvt. Ltd.	Synthesis of Novel Hair colorants and Synthetic Utility of Ionic Liquid.	Dr. G.S. Shankarling

10.	Haribhau Kumbhar	Arch Pharma Labs.	Synthesis of novel heterocyclic colorants for functional applications.	Dr. G.S. Shankarling
11.	Pranila Thale	Ruia college Mumbai.	Carbon dioxide Feedstock and Green methods for organic synthesis.	Dr. G.S. Shankarling
12.	Balu Gadilohar	Acoris Research Ltd. Pune.	Synthetic Utility of Micro emulsions and Green Media	Dr. G.S. Shankarling
13.	Deepak Boraste	Acoris Research Ltd. Pune	Studies in synthesis and application of pyromethene derivative and cucurbitol host molecules	Dr. G.S. Shankarling
14.	Saurabh Despande	USV Ltd .(Govandi)	-	Dr. G.S. Shankarling
15.	Pravin Borase	Aditya Birla science and Tech comp Ltd. Mumbai	-	Dr. G.S. Shankarling
16.	Eknath Gayakwad	Vidyabharti College Amaravati	-	Dr. G.S. Shankarling
17.	Vijay Tarate	Calyx Chemicals and pharmaceuticals Ltd	-	Dr. G.S. Shankarling
18.	Dilip Anuse	Shivaji University (Kolhapur)	-	Dr. G.S. Shankarling

M. Tech. / M.Chem. Eng.

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1	Bapat Deepak	Institute of Chemical Technology, Mumbai	Synthesis of novel vat dyes	Professor P M Bhate
2	Patil Priyanka	Shivajirao S. Jonduale College of Engg. Mumbai	Studies in sulphonation	Professor P M Bhate

M. Tech. M. Tech. (Perfumery & Flavour Technology)

No.	RESEARCH SCHOLAR	Previous Institution	PROJECT	Supervisor
1.	Vani Joshi	Institute of Chemical Technology Mumbai	Studies in floral odorants.	Dr. G.S. Shankarling
2.	Priyankaben Patil	University of chemical technology (Jalgaon)	Greener route for synthesis of Aroma compounds.	Dr. G.S. Shankarling

M. Tech. (Green Technology)

No.	RESEARCH SCHOLAR	Previous Institution	PROJECT	Supervisor
1.	Priyanka More	MET Institude of pharmacy Mumbai	Green route for the synthesis of pharmaceutical important nitrogen heterocycles.	Dr. G.S. Shankarling
2.	Nivedita Uphade	C.U.SHAH College of pharmacy Mumbai	A simple, efficient and commercially viable green procedure for transesterification.	Dr. G.S. Shankarling
3.	Aditti Barge	Bharti vidyapeeth college of engineering	Organic synthesis in functional solvents and micro emulsion.	Dr. G.S. Shankarling
4.	Glen Gonsalves	Thadomal Shahani college of engineering	Organic synthesis using enzymes.	Dr. G.S. Shankarling

M. Tech. (Dyes)

No.	RESEARCH SCHOLAR	Previous Institution	PROJECT	Supervisor
1.	Pratik Deshmukh	Datta Meghe college of engineering	Process intensification in azo dyes.	Dr. G.S. Shankarling

Postdoctoral/Ph.D. students' research projects

(name of students, previous institute, title) :

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Dr. Padalkar Vikas Sudam	Institute of Chemical Technology	Stand-off detection of explosives based on Immun-ochemical techniques	Project Co-ordinator: Professor G. D. Yadav Principal In-vestigator: Professor N. Sekar

Details of sponsored projects

(name of sponsor, title of project, duration, grant, principal investigator/co-investigators, names of research fellows)

GOVERNMENT AGENCIES:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
UGC	Chiral synthesis from carbo-hydrate precursors – Synthesis of solistatin and solistatinol	3 years	Rs 822,800/-	Prakash Bhate	
CSIR	Study of intramolecular Diels-Alder reactions of carbohydrate derived trienes	3 years	Rs 18.3 lacs	Prakash Bhate	None

Principal Scientific Advisor to GOI,	Stand-off detection of explosives based on immunochemical Techniques	3 year	Rs. 3,73,26,000	Professor N. Sekar	Dr. Vikas S. Padalkar (Post Doctoral Fellow) Mr. Santosh B. Chemate (Junior Research Fellow)
BRNS	Advanced laser dyes with high quantum yield and high photostability	3 Year	21, 00,000	Professor N. Sekar	Mr. Ankush More (Junior Research Fellow) Mr. Shrikant Thakare (Junior Research Fellow)
DST	Colored fluorescent conducting polymers for photovoltaic applications – feasibility phase	2 Year	10, 94,400	Professor N. Sekar	Mr. Manoj Jadhav (Junior Research Fellow)
AICTE	NIR Fluorescent Colorants for Biological Imaging in biomedical diagnostics	1 Year	19,70,000	Professor N. Sekar	----
UGC	Synthesis of red emitting coumarin laser colorants	3 Year	9, 00,000	Professor N. Sekar	Mr. Abhinav Tathe (Project Assistant)
BRNS	Synthesis of Pyrromethene 567, 597 and Cucurbit [7] Uril	2 year	17,22,600/-	Dr. G.S. Shankarling	Deepak Boraste
UGC	Photochromic and Thermochromic colorants for functional application	2 year	9,50,000/-	Dr. G.S. Shankarling	Saurabh Despande

PRIVATE AGENCIES:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Cavincare	Synthesis of Hair Dyes	1 Year	5,00,000	Professor N. Sekar	Mr. Prashant Mande
Cavin Kare Pvt. Ltd.	Studies in Hair Colorants	1 year	5,00,000/-	Dr. G.S. Shankarling	Vilas Patil
Reliance Industries Ltd	Synthesis of Thermochromic and high stoke shift flourophores	1 year	10,00,000/-	--	Dr. G.S. Shankarling
Essilor International Pvt.Ltd.	Polycarbonate Tinting	3 year	18,67,250/-	Dr. G.S. Shankarling	Pravin Borase

Details of National and International collaborations

Professor N. Sekar

National Collaborations

1. Dr. C. R. Suri (IMTech, Chandigarh),
2. Dr. A.K. Paul (CSIO, Chandigarh).
3. Dr. S. Panda (IIT, Kanpur).

International Collaborations

1. Dr. P. Ramasawmi (Mauritius University, Mauritius)

Dr. G.S. Shankarling

i) Collaboration of the research with other departments of ICT

ii) Collaboration of research or availing the testing facilities or getting expert advice from other Indian academic institutes like TIFR, IIT's, RRL, NCL, Hoffkins Institute, Tata Cancer Research Institute, etc.

iii) Research collaboration with foreign Academic Institues like Leeds University, North Carolina University, Ludwig Maximillian University (LMU) Munchen, Germany, University of Regensburg.

PUBLICATIONS

No.	Title and authors	Journal	Vol. No.	Pages	Year
PROFESSOR N. SEKAR					
1	Intrinsic catalytic activity of an acidic ionic liquid as a solvent for quinazoline synthesis. **Vikas Patil, Vikas Padalkar, N.Sekar**	Catalysis Science and technology	DOI: 10.1039/c2cy20160g		
2	Synthesis and antimicrobial activity of novel 2 -[substituted-1H-pyrazol-4-yl] benzothiazoles, benzoxazoles & benzim -idazoles. **Vikas Padalkar, Bhushan Borase, Vikas Patil, Gupta Vinod, N. Sekar**	J. of Heterocyclic Chemistry	DOI 10.1002/jhet.1506		
3	Synthesis of novel fluorescent 1,3,5-trisubstituted triazine derivatives and Photophysical property evaluation of fluorophores and its BSA conjugates.**Vikas Padalkar, Rahul Telore, Vikas Patil, N.Sekar**	J of Heterocyclic Communications	Accepted		
4	Synthesis of novel fluorescent 2-{4-[1-(pyridine-2-yl)-1H- pyrazol-3-yl] phenyl}-2H-naphtho [1,2-d] [1,2,3] triazolyl derivatives and evaluation of their thermal , photophysical properties. **Vikas Padalkar, Kiran Phatangare, N.Sekar**	J. of Heterocyclic Chemistry	Accepted		
5	Synthesis of triazine based dialdehyde Schiff's base-new templates for molecular imprinting and study of their structural and photophysical properties. **Vikas Padalkar, Abhinav Tathe, N.Sekar**	Arabian J of Chemistry	Accepted		

6	Synthesis and antimicrobial activity of novel 2-substituted benzimidazole, benzoxazole and benzothiazole derivatives. **Vikas Padalkar, N.Sekar**	Arabian J of Chemistry	DOI:10.1016/j. arabjc.2011.12.006		
7	Synthesis of novel dipodal-benzimidazole, benzoxazole and benzothiazole from cyanuric chloride: Structural, photophysical and antimicrobial studies. **Vikas Padalkar, Gupta, V.D., Phatangare, K.R., Patil, V.S., Umape, P.G., Sekar, N**	Journal of Saudi Chemical Society	DOI:10.1016/j. jscs.2011.07.001		
8	Indion 190 resin: Efficient, environmentally friendly and reusable catalyst for synthesis of benzimidazoles, benzoxazoles and benzo-thiazoles. **Vikas Padalkar, Vinod Gupta, Vikas Patil, Prashant Umape, N. Sekar**	Green Chemistry Letter and Review	5 (2) ,	139-145	2012
9	Synthesis and photo-physical characteristics of ESIPT inspired 2-substituted benzimidazole, benzoxazole and benzothiazole fluorescent derivatives. **Vikas Padalkar, Vinod Gupta, Vikas Patil, Kiran R. Phatangare, Abhinav Tathe, N. Sekar**	J of Fluorescence	1	311-322	2012
10	Synthesis and characterization of novel 4-(1-(4-(4-(4-aminophenyl)-1H-pyrazol-1-yl)-6-(4-(diethylamino)phenyl)-1,3,5-triazin-2-yl)-1H-pyrazol-4-yl)benzenamine fluorescent dye for protein binding. **Vikas Padalkar, N.Sekar**	Current Chemistry Letter	1	1-12	2012
11	Synthesis of new ESIPT-fluorescein: photophysics of pH sensitivity and fluorescence. **Vikas Patil, Vikas Padalkar, Vinod Gupta, Kiran Phatangare, N.Sekar**	J. of. Physical Chemistry: A,	116, (1)	536-545	2012
12	Synthesis, photophysical properties of novel fluorescent metal complexes from 3-(1,3-benzoxazol-2-yl)naphthalen-2-ol, and their antimicrobial activity. **Kiran Phatangare, Vikas Padalkar, Vikas Patil, Vinod Gupta, N.Sekar**	Current Chemistry Letter	1	47-58	2012
13	Phosphomolybdic acid: An efficient and recyclable solid acid catalystfor the synthesis of 4,4'-(arylmethylene) bis(1H-pyrazol-5-ols). **Kiran Phatangare, Vikas Padalkar, Vikas Patil, Vinod Gupta, Prashant Umape, N. Sekar**	Synthetic Communications	42 (9) ,	1349-1358	2012
14	Synthesis and biological evaluation of novel 6-Aryl-2,4-disubstituted Schiff's base 1,3,5-triazine derivatives as antimicrobial agents **Vikas Padalkar,Phatangare, K.R., Gupta, V.D., Patil, V.S., Umape, P.G.Sekar, N.,**	Research Journal of Pharmaceutical, Biological and Chemical Sciences	2 (3) ,	908-917	2011
15	Synthesis, characterization, thermal properties, and antimicrobial activities of 5-(diethylamino)-2-(5-nitro-1 h -benzimidazol-2-yl) phenol and its transition metal complexes. **Vikas S., Padalkar; Vikas S., Patil; Vinod D., Gupta; Kiran R., Phatangare; Prashant G., Umape**	ISRN Organic Chemistry,	1	1-7	2011
16	Synthesis and photo-physical properties of fluorescent 1,3,5-triazine styryl derivatives. **Vikas Padalkar, Vikas Patil, N. Sekar**	Chemistry Central Journal	5(1)	77	2011
17	Synthesis and characterization of novel 2, 2'-bipyrimidine fluorescent derivative for protein binding. **Vikas Padalkar, Vikas Patil, N. Sekar**	Chemistry Central Journal	5(1)	72	2011
18	The synthesis and photo-physical properties of extended styryl fluorescent derivatives of N-ethyl carbazole. **Vinod Gupta, Vikas Padalkar, Kiran Phatangare, Vikas Patil, Prashant Umape, N. Sekar**	Dyes and Pigments	88 (3)	378-384	2011
DR. G.S. SHANKARLING					
19	Environmentally benign and energy efficient methodology for condensation: an interesting facet to the classical Perkin reaction. Poonam M. Pawar, Krishna J. Jarag and Ganapati S. Shankarling	Green Chemistry	13	2130	2011
20	Efficient Synthesis of 2, 3-dihydro-1H-perimidine derivatives using HBOB as a novel solid acid catalyst. Sunanda B. Phadtare ,R. Vijayraghavan , Ganapati S. Shankarling and D. R. MacFarlane	Australian Journal of Chemistry	65	86-90	2011
21	Selective N-Alkylation of aromatic primary amines catalyzed by Bio-catalyst or Deep Eutectic Solvent. Balvant S. Singh, Hyacintha R. Lobo ,Ganapati S. Shankarling	Catalysis Letters	141	178–182	2011
22	The synthesis, photophysical and thermal properties of new anthrapyrimidine colorants. Sreejit R. Menon, Ganapati S. Shankarling	Coloration Technology	127	383-389	2011

23	Choline chloride based eutectic solvents: Magical catalytic system for carbon–carbon bond formation in the rapid synthesis of β-hydroxy functionalized derivatives. Balvant S. Singh, Hyacintha R. Lobo, Ganapati S. Shankarling	Catalysis Communications	24	70–74	2012
24	Greener coumarin synthesis by Knoevenagel condensation using biodegradable choline chloride. Sunanda B. Phadtare, Ganapati S. Shankarling	Environmental Chemistry Letter			2012
25	Deep eutectic solvents and glycerol: a simple, environmentally benign and efficient catalyst/ reaction media for synthesis of N-aryl phthalimide derivatives Hyacintha R. Lobo, Balvant S. Singh, Ganapati S. Shankarling	Green Chemistry Letters and Reviews			2012
26	Ultrasound and Deep eutectic solvent (DES): A novel blend of techniques for rapid and energy efficient synthesis of oxazoles. Balvant S. Singh, Hyacintha R. Lobo, Deepak V. Pinjari, Krishna J. Jarag, Aniruddha B. Pandit, Ganapati S. Shankarling	Ultrasonics Sonochemistry			2012

PATENTS :

1. A class of quaternary ammonium catalysts, **G. S. Shankarling,** Yogesh A. Sonawane, Krishna J. Jarag, Poonam M. Pawar, Sunanda Phadtare, Rishad Bumgara, Hyacinta R. Lobo, Balvant S. Singh, Urmila Yadav, Application no. 1129/MUM/2011.
2. Styryl molecules based on substituted-1,4-diphenethyl-1,2,3,4-tetrahydroquinoxaline-6-carbaldehyde., **G. S. Shankarling,** Krishna J. Jarag, Application no. 1503/MUM/2011.
3. Ultrasound assisted process for synthesis of chalcone, **G. S. Shankarling,** Krishna J. Jarag, Dipak V. Pinjari, Aniruddha B. Pandit, Application no. 1504/MUM/2011.

BOOK AND BOOK CHAPTERS :

No.	Author(s)	Title	Publisher	Place	Year
1	N Sekar	Direct Dyes in Handbook of textile and industrial dyeing (Ed: M Clark)	Woodhead Publishing	UK	2011

BOOK CHAPTER:

No.	Author(s)	Title of the chapter	Editor	Publisher	Place	Year	Page
2	N Sekar	Acid Dyes in Handbook of textile and industrial dyeing (Ed: M Clark)		Woodhead Publishing	UK	2011	

GENERAL PUBLICATIONS

No.	Title and Authors	Journal	Vol. No.	Pages	Year
1.	Color chemistry - A priori computational approach - I	Colourage	59 (3)	62-64	2012
2.	Absorption and emission of dyes in organic colorants	Colourage	59 (2)	54-56	2012
3.	Colorants in solar energy harnessing	Colourage	59 (1)	54-55	2012
4.	Colorants in bio-analytical techniques	Colourage	58(11)	54	2011
5.	Colored functional materials	Colourage	58(10)	62-64	2011
6.	Voltage-sensitive dyes in biology	Colourage	58(9)	54-56	2011
7.	Fluorine containing colorants - Dichroic and NLOphoric dyes	Colourage	58(6)	56-58	2011
8.	Near infrared absorbing azo dyes - An overview	Colourage	58(5)	52-58	2011
9.	Dyestuffs reporter: Dyes for electro-optical applications	Colourage	58(4)	50-52	2011
10.	Some applications of Porphyrin based compounds	Colourage	58(3)	34-38	2011
11.	Photochromism	Colourage	58 (2)	42-44	2011
12.	Feedstock Available for manufacturing Aroma Chemicals in India, G. S. Shankarling, Anita ghuge, balu Gadilohar, Haribhau Kumbhar	The FAFAI Journal ,		Vol XIV No.1	March (2012).

Membership of In-house Committees

Professor P. M. Bhate

- Member – PGPC
- Member – UGPC
- Chairman – PG Admissions Committee
- Member – Resource Mobilisation Committee
- Member – IPR and Technology Transfer Committee
- Member – Academic Audit Committee
- Member – Examination Fee Committee
- Member – TEQIP Phase II – Industry Institute Interaction Cell
- Member – Committee for preparing guidelines for internal performance audit under TEQIP Phase II
- Vice President – Technological Association

Professor N. Sekar

1. Co-ordinator for the Centre for Physico-Chemical Aspects in Textiles, Fibres, Dyes and Polymers (UGC-SAP).
2. Deputy Coordinator , COSIST Programme
3. Departmental Representative, CAS Programme
4. Coordinator, In-plant Training for T.Y. B. Tech students
5. Coordinator, TEQUIP Seminar (Services to Society)

6. Member, Student's Feedback committee
7. Member, AICTE – Accreditation (of all Courses) Committee
8. Member, Teachers Evaluation Committee
9. Member, RC Committee Ph.D Chemistry
10. Member, RC Committee, Ph.D Green Technology
11. Member, RC Committee, Dyes Technology

Dr. G.S. Shankarling

- Warden of Hostel no.1
- Administrative Coordinator of M.Tech.Perfumery & Flavor Technology.
- Member, ICT Annual Report.
- Member, ICT Handbook.
- Member, ICT Diary.
- Placement Officer of Perfumery & Flavor Technology
- Department coordinator of TEQUIP
- Member of Merit cum Scholarship Certificate

Seminars/Lectures/Conferences/Symposia/Workshops/Summer or Winter Training Schools attended/Oral OR Poster Presentations

Professor P.M. Bhate

Green Chemistry in Action – Some Real Life Examples.National Workshop on Green Chemistry organised by Department of Chemistry, Manomaniam Sundaranar University, Tirunelveli. 20 August 2011

Professor N. Sekar

a. Invited Lectures

1. Sustainable Color Chemistry – a pragmatic approach, Half day seminar on "Green Chemistry for Sustainable Manufacturing" at Vapi on 8th June 2011, organized by Vapi Industries Association and Newreka Green Synth Technologies Pvt Ltd
2. Synthesis of novel fluorescent colorants at University of Mauritius on 27th June 2012
3. "Greener Approaches in Biomedical Diaganostics" at Iternational conference on green technologies for Environmental Rehabitations Feb 11-13, 2012- Gurkul Kangari University Haridwar.
4. "Fluorescent Dyes-Greener Alternatives in Biomedical Imaging" in International Conference on Global Worming: The biggest Challenge of 21st Century Feb 24-26, 2012, Udampur
5. "Pyromethane BF2 complexes: Quasi-Aromatic fluorescent Colorants" National Conference on recent advances in inorganic chemistry, 22-24th march 2012, Bharatidasan University, Trichy, India
6. Colored push-pull (poly)enes- Past,Present and Future in National Conference on Rescent Trends in Chemistry 27-28th March. V. N. South Gujrat University, Surat.

b. Conferences

1	Synthesis and photo-physical characteristics of esipt inspired 2-substituted benzimidazole, benzoxazole and benzothiazole fluorescent derivatives and their DFT-calculation study Vikas S. Padalkar, N. Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
2	Novel fluorescein based dyes: synthesis, characterization and study of viscosity effect on fluorescence in protic media Vikas Patil, N.Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
3	Synthesis and characterization of excited state intramolecular proton transfer (ESIPT) molecules having oxazole and thiazole moieties Manjaree Satam, N.Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
4	Synthesis and photophysical properties of novel 2-[substituted-1h-pyrazol-4-yl] benzothiazoles, benzoxazoles and benzimidazoles derivatives Vikas S. Padalkar, N. Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
5	Environmentally friendly ionic liquid mediated synthesis of phenalenone derivatives Kiran R. Phatangare, N.Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
6	Identification of blood stain by fluorescein derivatives as efficient fluorescent blood probe Vikas S. Patil, N.Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
7	Synthesis of styryl colorants containing thiazole moiety and study of their photophysical properties Prashant G. Umape, N.Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
8	Synthesis of excited state intramolecular proton transfer (esipt) molecules having bis benzazole substituents Manjaree A. Satam, Rahul D. Telore and N. Sekar*	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
9	Synthesis of highly fluorescent benzimidazol-2-yl and benzothiazol-2-yl quinolin-7-ol derivatives Vikas S. Padalkar, Vikas Patil, Santosh Chemate, N. Sekar*	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
10	Microwave irradiated, bronsted acid ionic liquid catalyzed solvent free synthesis of methine and xanthene derivatives Amol S. Choudhary, Rajratna Tayade, Vikas S. Padalkar, N. Sekar*	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
11	Synthesis and photo-physical properties of fluorescent quinoline 3-substituted extended styryl derivatives Mininath Deshmukh, N. Sekar*	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011

12	Aqueous mediated domino process for the synthesis of phenazines and quinoxalines under ultrasound irradiation Amol S. Choudhary, Sharad Patil, Vikas S. Patil, Vikas S. Padalkar, N. Sekar	National Symposium on Functional Application of Colorants NSFAC-2011; Organised by Institute of Chemical Technology, 14-15th Oct.2011
13	Synthesis of ESIPT Inspired Fluorescent Benzimidazole, Benzoxazole, Benzothiazole, Pyrazole and Fluorescein Fluorophores for Micro-Environmental Sensing Vikas Padalkar, N.Sekar	National Conference on Rescent Trends in Nanotechnology, Birala College, Mumbai 1-2 March 2012 Best Paper Presentation Award
14	Synthesis of Functional Colorants Prashant Umape, N. Sekar	Research Scholar Meet, Organized by Indian Chemical Society Mumbai Branch. SIES College Mumbai. 17-18th Feb 2012
15	Synthesis of heterocyclic colorants for functional Application Manjaree Satam, N.Sekar	Research Scholar Meet, Organized by Indian Chemical Society Mumbai Branch. SIES College Mumbai. 17-18th Feb 2012

Professor G.S. Shankarling

1. Oral presentation on "Design and synthesis of Thiazole bridged colorants for Non-linear optical (NLO) application" by Balvant S. Singh and G. S. Shankarlingin National Conference on "National Symposium on Functional Applications of Colorants" (NSFAC-2011), at Mumbai, Institute of Chemical Technology (ICT), India during October 14-15, 2011.
2. Oral presentation on "Novel sensitizers for Light Harvesting: Design, synthesis and study of colorants for Dye-Sensitized solar cells" by Hyacintha Lobo and G. S. Shankarlingin National Conference on "National Symposium on Functional Applications of Colorants" (NSFAC-2011), at Mumbai, Institute of Chemical Technology (ICT), India during October 14-15, 2011.
3. Presented as a poster on "Lipase and Deep eutectic solvent: An efficient catalyst and bio-degradable reaction medium for selective N-alkylation of aromatic primary amines" Balvant S. Singh, Hyacintha R. Lobo and G. S. Shankarlingin National Conference on "Emerging Trends in Chemistry-Biology Interface" (ETCBI-2011), at Kumaun University, Nainital, India during November 3-5, 2011.
4. Presented as a poster on "Design, Synthesis and Study of Novel Colorants as Energy Harvesting Materials for Dye-Sensitized Solar Cells" Hyacintha R. Lobo, Balvant S. Singh and G. S. Shankarlingin International Conference on "Tap Sun: The Sustainable Future" (IC TAP SUN-2011), at CSIR-Institute of Chemical Technology, Tarnaka, Hyderbad, India during November 26-26, 2011.

Events Organized

Professor P.M. Bhate

National Symposium on Functional Applications of Colorants, 14 and 1 5 October 2011, Mumbai

Professor N. Sekar

Convener, National Symposium on Functional Application of Colorants (NSFAC-2011).

Professor G.S. Shankarling

Coordinator of EXERGY 2012.
Convener Secretary of Convention on Colorants 2011.
Member of NSFAC 2011-12 Committee.

Industrial Consultancy

Professor P.M. Bhate

TechNova Imaging Systems (P) Ltd
Neelikon Food Dyes and Chemicals Ltd
Johnson Matthey Chemicals India Pvt. Ltd
Ipca Laboratories Ltd

Dr. G.S. Shankarling

Metropolitan Exim Chem. Pvt.Ltd.
Reliance Industries Ltd.
Essilor International Pvt.Ltd.

Details of Post-graduate/Ph.D. students who passed out

(name, course, title of project)

Name	Course	Title	Research Guide
Dr. Vikas S. Patil	Ph.D	Synthesis of Heterocyclic Colorants for Functional Applications	Professor N. Sekar
Dr. Vikas S. Padalkar	Ph.D	Synthesis of Heterocyclic Colorants for Functional Applications	Professor N. Sekar
Mr. Prashant Mande	M.Tech (Perfumary)	Colored Perfumery and Flavor Formulation	Professor N. Sekar

Name	Course	Title	Research Guide
Sunil Fatak	M.Tech.(Perfumery & Flavour Technology)	Green route for the synthesis of pharmaceutical important nitrogen heterocycles.	Dr. G.S. Shankarling
Jitendra Sutar	M.Sc. (Chemistry)	Synthetic utility of Aldehydes in Perfumery Compounds	Dr. G.S. Shankarling
Rishad Bhumgara	M.Sc. (Chemistry)	Synthesis of Novel Colourant	Dr. G.S. Shankarling

Mr. Sunil Fatak

Synthesis and Formulation of Perfumes And Flavours

PART – I Synthesis of Esters

Esters are widespread in nature and also widely used in perfumery and flavour industry for formulations. Esters are responsible for the aroma of many fruits, including apples, pears, bananas, pineapples, and strawberries. We synthesized different esters using 4-methyl benzyl alcohol, cinnamic alcohol, citronellol and anisic alcohol with different aliphatic aicds. Ester of citronellol have deep fruity citrus note with improved tenacity. Cinnamyl octanoate have intense spicy notes which made its use in different perfumery formulations.

PART – II Synthesis of α, β-unsaturated cyclic ketones

The aldol condensation is an extremely useful carbon-carbon bond forming reaction in organic chemistry. In this part, a mixed aldol condensation of cycloketones and aliphatic aldehydes is carried out by eco-friendly method i.e. green catalyst. The fragrance ingredients synthesized by this method have high end applications in perfumery. They mainly gives floral, jasmine type of notes to the formulation.

Mr. Jitendra S. Sutar

Synthetic Utility of Aldehydes in Perfumery Compounds

Part-I: Synthesis of oximes and nitriles

Oximes have few applications in perfume compositions. They generally possess leafy odour. Oximes are frequently used as intermediates for synthesis of nitriles. The nitriles have similar odour to that of the corresponding aldehyde. Although aldehydes are prone to oxidation and polymerization, their corresponding nitriles are stable to soaps, detergents and cosmetic products.

In the present research work we have synthesized oximes using aliphatic aldehydes of C7 backbone and aromatic aldehydes. We have synthesised nitriles using oximes of aldehydes.

Part II: Synthesis of esters and alcohols

Esters are widely used in both flavour and fragrances at high levels. The simple esters have fruity character. Phenoxy ethyl isobutyrate has fruity, floral, rose odour. Phenoxy ethyl isobutyrate has been used in shampoo, soaps and fabric softeners etc. Alcohols are widely used in alcoholic beverages. Propylene glycol is used as solvent in flavours and dipropylene glycol (DPG) is used as solvents in fragrances. In this chapter we have synthesised methyl esters of carboxylic acids having C7 and C9 backbone. We have also synthesized the ester of phenoxy ethanol with these carboxylic acids. We have synthesised aliphatic saturated alcohol and unsaturated alcohol from
aldehydes of C7 backbone.

Part III: Synthesis of acetals

The disadvantage of using aldehydes in fragrance composition is that they are prone to oxidation. They can form Schiff bases with amines. If they have □-hydrogen they can undergo aldol condensation. These reactions can be avoided if carbonyl functional group is protected by acetal formation. In organic synthesis acetalization or ketalization reaction is widely used for the protection of carbonyl groups in aldehydes and ketones. We have synthesized the acetals of aliphatic aldehydes having C7 backbone with methanol, ethanol, 1-propanol and 1,2-ethanediol. We have synthesised acetals of C7 and C8 backbone using HBOB catalyst under mild conditions.

Mr. Rishad Bhumgara

Synthesis of novel colorants

Part I: Synthesis of novel colorants based on phenalene-1,3-dione units.

In past century, colorants, in terms of their applications have progressed in leaps and bounds. From traditional textile dyes they are being applied in medicine, energy resources, data storage and transfer, bio sensing, fashion industry and many more. The search for such novel application of colorants will never end and their will the need for novel synthesized molecules. Here, we have synthesized novel phenalenedione colorants by incorporation of various powerful electron acceptors as functional groups. Their thermal stability, as well as their photo physical studies has been carried out. The colorants were doped in poly methyl methacrylate with benzoyl peroxide as an initiator. They showed yellow to deep red transparent shades.

Part II: Synthetic utility of bio-degradable solvents.

The need of the hour, now more than ever is clean, green organic synthesis. A novel biodegradable solvent and a novel bio catalyst were employed in the benign synthesis of oximes from water insoluble ketones. Their yields, reaction times and optimum temperatures have been studied in comparison with conventionally used methods. The solvent and catalyst were recycled and reused for a series of further runs to affirm their green quotient. The oximes were further converted to their amides via a facile Beckmann rearrangement. Reaction times, yields and recyclability have been studied and reported.

To fulfill its vision, the Department would like to pursue the following research areas:

- Functional colourants
- Conventional colourants
- Natural colourants
- Agrochemicals
- Perfumery chemicals and flavours
- Process intensification
- Green chemistry and technology

Functional colourants

The Department already has a strong research program in this area. Several functional colourants having potential for application in the following areas have been synthesized and characterized in detail:

- Lasers
- Optical storage devices
- Solar energy cells
- Electronics
- Biological sensors
- Radiation heat insulating glass windows

These colourants are essentially heterocyclic systems designed to give NIR absorbance and in some cases fluorescence.

Having synthesized these molecules, the Department would now like to collaborate with national and international laboratories active in making devices and prototypes for the end use envisaged. Such collaborations are expected to significantly increase the understanding of demands made by the end use application, which would in turn lead to fine tuning and hence identification of new target molecules for synthesis. Solar energy cells and biological sensors are particularly attractive areas and have an immense potential.

Short abstract on salient features of research work

Conventional colourants

The Department is currently active in the emerging and recent application of conventional colourants. These include high performance pigments, dyes for ink-jet printing and colourants for contact lenses. Again, several molecules have been synthesized thanks to the faculty's inherent strength in synthetic organic chemistry. The Department needs to strengthen its capabilities in pigment finishing and application, and skills for developing dye formulations used in ink-jet printing. With textile printing moving in the direction of ink-jet, the potential in developing colourants for this application is huge.

Owing to focus on the newer developments in the field of colourants as mentioned above by a limited number of faculty, the Department currently is not pursuing research in reactive and vat dyes (for cotton), disperse dyes (for polyester) and optical brighteners (for both). This is probably true for dyes departments worldwide. ICT's Dyestuff Technology Department is the only one of its kind in the country and amongst a very few in the world. In order to preserve and further knowledge in this area, the Department is in the process of restarting research in the area of reactive and vat dyes.

A major problem in reactive dye application is its hydrolysis during dyeing. Therefore, a research project aimed at developing newer and better reactive systems is worth pursuing. In the first phase, a reactive system capable of forming a covalent bond with the hydroxyl group of cellulose in good yield under prevailing dyeing conditions will be developed. In the second phase, chemistry required to 'hook up' this reactive system to a dyestuff will be developed.

Ever since the introduction of reactive dyes in 1957, vat dyes were predicted to become obsolete. Research effort in vat dyes dwindled and is almost non-existent today. However, owing to their excellent overall fastness properties, vat dyes have held their ground and have been growing at a low but positive rate. There is a good opportunity to look at vat dyes development with new chemistry and modern analytical and instrumental methods. The Department would like to initiate work in this long neglected area and usher in a renaissance in vat dyes chemistry.

Natural colourants

Unlike most synthetic colourants, natural colourants are generally less toxic and are preferred over their synthetic counterparts in colouring food. Some natural dyes also have medicinal properties. India is known for its rich bio-diversity, with each different region having its unique flora and its traditional methods of extracting and using natural colourants. The Department would like to initiate a systematic research programme aimed at region-wise documentation of traditional natural colourants together with their isolation and characterization. Further work aimed at synthetically modifying some of the chromophores identified would be an off-shoot of this research programme.

Agrochemicals

The fundamental unit processes and unit operations employed in preparation and manufacture of agrochemicals and organic colourants are the same. With its strong synthetic organic chemistry background, the faculty of this Department would like to enter into this area. The focus would be on developing fungicides and herbicides based on novel heterocyclic systems.

Major Instrumental / Processing Facilities Equipment

The Department is equipped with a functional organic synthesis laboratory. Facilities include:

- Autoclaves, Hastelloy – 300 mL, 1 lit
- Autoclaves, SS 316 – 3 x 600 mL, 5 lit
- Freeze drier
- Glass reactor assemblies
- Incubator
- Microwave reactors
- Parr hydrogenators – 300 mL, 600 mL
- Rotary evaporators

The following analytical instruments are available:

- Gas chromatograph
- HPLC
- HPTLC
- Particle size analyser
- Preparative HPLC
- Thermo gravimetric analyser

Application testing of conventional colorants is carried out in a Pigment House and a Dye House. The Pigment House is equipped with:

- Analytical mill and homogenizer
- Automatic draw down assembly
- Automatic pigment mueller
- Automatic vibroshaker
- Ball mill
- Kneader
- Mars mill
- Planetary ball mill
- Sand mill

The following equipment is available in the Dye House:

- Colour matching system
- HTHP dyeing machine
- Spectrofluorimeter
- UV-VIS spectrophotometer

Interaction with industry

In keeping with the tradition of the Institute, the Department has maintained close interaction with the Indian dyestuff and chemical industry since its inception. In recent times, its spread has become global. Currently, the Department has ties with:

- A. M. Todd
- Amritlal Chemaux Ltd
- BASF
- Conserve Pvt. Ltd.
- General Electric
- Givaudan
- Huntsman LLC, U.S.A.
- Mann Pvt. Ltd
- Nirup Synchrome Ltd
- Reliance Industries Ltd
- S. H. Kelkar Gorup Ltd.
- Serene Dyestuffs Ltd
- Smruti Organics Ltd
- Symrise Pvt. Ltd
- VKL Seasoning spices Ltd.
- Imation Corporation, U.S.A.
- Shreyas Chemical Industries Ltd.
- Aerofine Chemicals
- Astik Dyestuff
- Clariant India Ltd
- Deepak Nitrite Ltd
- Gharda Chemicals
- Heubach Colors
- ITC
- Megatic Ltd
- Pidilite Industries Ltd.
- Puroma Pvt. Ltd
- S. F. Dyestuff Pvt. Ltd.
- Shalu Mills
- Spectrum Dyes
- Syngene Biocon
- Vasant Chemicals
- International Flavor and Fragnance
- TechNova Imaging Systems (P) Ltd

Placements

The dyestuff industry is the obvious destination of our students, who currently occupy key positions in such reputed colorant companies as:

- Atul Limited
- Clariant
- Deepak Nitrite Ltd
- Huntsman LLC, U.S.A.
- Pidilite
- BASF
- Colourtex
- General Electric
- Heubach

Emphasis on organic chemistry in the Dyestuff Technology curriculum equips our students to contribute in fields other than colourants. Several of our students have made a career in the field of:

- Agrochemicals – Gharda Chemicals, FMC, Syngenta
- Pharmaceuticals – Cadila, Calyx, Dr Reddy's Labs, Merck, Pfizer, Syngene
- Specialty chemicals – Aarti, Deepak Nitrite, GE, Hikal, Hindustan Unilever, Reliance

In the last 5 years, an overwhelming majority of our B Techs have proceeded abroad to pursue graduate studies. Almost 20% of the alumni are entrepreneurs. Some of the well-known ones together with their companies are:

- Shri K R Datar – Puraj Chemicals
- Shri N K Parekh – Pidilite Industries Ltd
- Shri K L Rathi – Sudarshan Chemical Industries Ltd
- Shri S S Sarna – Sarna Industries
- Shri R T Shah – Technocolour Corp
- Shri D G Udas – Conserve Pvt Ltd, also Specialty Molecules Pvt Ltd

Donation by various industries:

Industries as well as various associations have been always supporting the Department by donations for various activities. Those who donated during 2011-12 are:

- Mr. Krishna Gupta, Krishna Antioxidants Pvt. Ltd.
- Dr. Govind Patkar
- Mr. M. Ganesan
- Mr. Prakash Apte, Bharat Organics
- Dr. K. N. Subbaswami, Resonance Laboratories Pvt. Ltd.

Prestigious Lectureship and Fellowships of the Department.

Various lectureships and fellowships are instituted in the Department, such as K. Venkataraman Lectureship, which was instituted on the 80th Birthday of Professor K. Venkataraman. Pidilite Endowment Fellowship was instituted by Ms. Pidilite Industries Ltd. K. H. Kabbur Memorial Lectureship was instituted during the Institute's Silver Jubilee Year by Mrs. Kabbur.

Fellows Appointed During 2011

PROFESSOR K. VENKATRAMAN LECTURESHIP

Speaker : Professor R M Christie, School of Textiles & Design, Heriot-Watt University, Scotland
Topics : Chromic Textiles: Addressing Textile Design through Colour
Chemistry : Organic Pigments: Crystal Science and Engineering

K.H. KABBUR MEMORIAL FELLOWSHIP LECTURE:

Speaker : Dr G S Nadiger, Research Advisor, Bombay Textile Research Association
Topic : Eco-Labels in Textile Industry

PIDILITE ENDOWMENT FELLOWSHIP

Speaker : Dr P K Ghosal, Former President – Aromatics Division, Atul Ltd
Topic : Sunscreens

L to R: Professor P M Bhate, Vijilatadevi Rajkumari, Priyanka Patil, Kamlesh Wadgaonkar, Rajaram Dugane, Umesh Warde, Ashok Garande, Sunil Rokade, Hanuman Kalmode

1st (L to R) : Archana Bhagwat, Supriya Patil, Seema Ghorpade, Professor N.Sekar, Abhinav Tathe, Amol Jadhav, Siddharth Jadhav, **2nd (L to R) :** Rahul Telore, Rajratna Tayade, Ashwin Wasnik, Sandip Lanke, Santosh Chemate, Shantaram Kothavale, Pradip Patil **3rd (L to R) :** Shrikant Thakare, Ramnath Mallah, Ankush Chinchane, Sharad Patil, Umesh Warde, Yogesh Gawale
4th (L to R) : Milind Shreykar, Dr. Vikas Padalkar, Manoj Jadhav, Amol Chaudhary, Sachin Margar, Kishor Thorat, Vinod Gupta
5th (L to R) : Ankush More, Yogesh Erande

First Row (L to R): Aditi, Pranila, Nivedita, Hyacintha, Dr. G.S. Shankarling, Urmila, Anita, Priyanka.
Second Row (L to R): Pratik, Balu, Shailesh, Vilas, Balvant, Deepak, Priyanka.
Third Row (L to R): Saurabh, Haribhau, Glen, Dilip, Vijay, Pravin

DEPARTMENT OF

FIBRES AND TEXTILE PROCESSING TECHNOLOGY

From L-R (First Row)

Ravindra D. Kale
B. Sc., B.Sc. (Tech.), M.Tech., Ph.D.Tech.
Assistant Professor in Textile Chemistry

Mrs. Sujata Pariti
BSc, BSc (Tech), MSc (Tech), PhD (Tech)
Adjunct Professor

Ravindra Adivarekar
B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)
Professor of Fibre Chemistry & Head

From L-R (Second Row)

Mrs. Usha Sayed
B. Sc., M.Sc. (Tech), Ph. D. (Tech),
Associate Professor in Fiber Chemistry

S. R. Shukla
B.Sc. (Hons.), B.Sc. (Tech.), Ph. D. (Tech.)
Professor of Technology of Dyeing & Printing and Registrar, ICT

M. D. TELI
B. Sc (Hons.), B.Sc. (Tech), Ph. D. (Tech), FTA (Hon.), F.M.A.Sci.
Professor of Textile Chemistry & Dean, SA & HRD, I/c Director

The post graduate courses of M. Tech., M.Sc. in Textile Chemistry and Ph.D. (Tech.) attract a large number of students and so far more than 2250 graduates and 500 post graduates have passed out from this Department. The faculty of the Department has good interaction with the industry. A number of industries have been benefited by the technical advice given by the faculty.

Professor Ravindra Adivarekar
B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)
Head of the Department

It was about 79 years ago that the Textile Industry was progressing in-full swing in city like Mumbai, and Ahmedabad. Many other industries were not even born, in that pre-independence era. It was the time Sir Vitthal Chandavarkar was V.C. of University of Mumbai and also the Chairman of Mill Owners` Association. He and his industrialists friends donated 200 lakhs for creation of an educational and research institute catering to the need of Textile industry and that's how this UDCT, then called as University Department of Chemical Technology, under the wings of Mumbai University, was established with two disciplines: Textile Chemistry and Chemical Engineering offering a 2 year Degree course post B.Sc. chemistry, called as B.Sc.Tech. A number of new disciplines of chemical technology, pharmacy, and biotechnology were opened up over the years as per the need of the nation and all these various technological disciplines have played a paramount role in building the respective industry in the country. Most of the Professional Bodies of the Technocrats of these disciplines, even today operate from the portals of excellence of UDCT.

Thus the Department of Fibres and Textile Processing Technology (FTPT), formerly known as Textile Chemistry section has the unique distinction of being one of the two disciplines (other being Chemical Engineering), with which this institution- ICT (formerly UDCT) started in the year 1933. The Department conducts B.Tech. course with an intake capacity of 34, which is highest among all the B.Tech. courses of ICT. The course involves study of chemistry and manufacture of Fibres, their chemical processing such as bleaching, dyeing, printing and finishing. It further encompasses the study of chemistry as well as application of various kinds of chemicals, dyes, thickeners, and finishing auxiliaries which are used in chemical processing of textile fabrics and garments. Textile chemistry also involves knowledge of green chemistry, biotechnology and nanotechnology with special reference to chemical processing of textiles.

The post graduate courses of M. Tech., M.Sc. in Textile Chemistry and Ph.D. (Tech.) attract a large number of students and so far more than 2250 graduates and 500 post graduates have passed out from this Department. The faculty of the Department has good interaction with the industry. A number of industries have been benefited by the technical advice given by the faculty. There have been a number of industrial and governmental research projects in which problems of mutual interest are investigated and the students as well as the Department have been benefitting by this interaction. The department is recognized as Centre of Advanced studies in "Physicochemical aspects of Textile, Fibres, Polymers and Dyes" presently in Phase VII, since 1962. The department also played an important role in evaluating TUFS under Ministry of Textiles, GOI. The faculty is engaged in high quality fundamental as well as applied research and they have got over 1000 publications in Indian and International journals as well as reputed fellowships to the credit from recognized institutions in India and abroad.

After the globalization of the markets with border less trade, textile manufacturing activities are shifted to country like India which is fast developing economy. Today Textile being one of the fundamental needs of human being, it is a mother industry, next to only agriculture sector, involving over 60 million people. The business is fast growing and will soon touch around US$ 100 Billion. However, in the border less trade many multinational brands are competing and the critical area of chemical processing of textile fabrics and garments requires tremendous amount of consolidation in terms of well trained manpower which can keep pace with latest technological operations and demand of stringent quality parameters in shortest delivery time giving competitive edge to the manufacturers. There is a huge shortage of Textile Processing graduates in the core textile industry as well as in multinational and reputed Indian manufacturers of dyes, chemical and auxiliaries. Thus the scope for graduates and postgraduates of this department is enormous and such a demand with every passing day will only be rising given that consumption of apparels and technical textiles in India and abroad is increasing at galloping rate.

Ravindra Adivarekar

B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)

Professor of Fibre Chemistry & Head

Subjects taught :

1. Technology of Printing, Technology of Textile Colouration
2. Advanced Textile Technology, Energy and Water Conversion in Textile Industry, Testing of Textiles, Dyes and Auxiliaries,
3. Continuous Processing of Textiles.

Research interests

1. Natural Dyes and Mordants; Fibre Modification; Dyeing of Textile;
2. Printing of Textile; Mass Production and extraction of Microbial colourants; Manufacturing of Enzymes for textile Processing; Medical Textile; Colour fastness of textile materials; Detergency of Textiles, Ionic liquids for regenerated fibres etc.

Number of research students:

1. Ph.D. (Tech.) - 1
2. Ph.D. (Sci.) - 2
3. M.Tech. - 7
4. Integrated Ph.D. (Tech.) - 2

Number of research publications:

International - 3
National- 6

Number of patents:

- International - 0
- Indian - 0

Number of sponsored projects :

- Government - Nil
- Private - 2

Professional Activities :

1. Life Member of Textile Association (India)
2. Life Member of Indian Fibre Society
3. Governor nominee to Academic Council of the North Maharashtra University, Jalgaon.
4. Editor of Journal of Textile Association
5. Indian Correspondent to 'International Dyer'
6. Visiting faculty for Sophia Polytechnic
7. Member of selection committee, College of Home Science, Nirmala Niketan
8. Member of technical/Research advisory committee of Wool Research Association
9. Member of Board of studies and faculties of The Maharaja Sayajirao University of Baroda in Textile chemistry
10. Member of General Advisory Committee for Research and Liason of BTRA for the period 2011-2014
11. Member of 'Core Group' to function as a Sub-committee of the Council for COE in Sprotech at WRA

Ravindra D. Kale

B. Sc., B.Sc. (Tech.), M.Tech., Ph.D.Tech.

Assistant Professor in Textile Chemistry

Subjects taught :

1. Dyeing of Natural and Synthetic Fibres,
2. Analysis of Chemicals used in Textile Wet Processing,
3. Technology of Textile Polymers, Testing of Textiles, Technology of Non Wovens, High-tech and Industrial Fibres

Research interests

1. Effluent treatment using nano particles
2. Application of nano emulsions in textiles
3. Synthesis and application of nano particles
4. Use of Polyelectrolytes Multilayers for imparting Novel Properties to Textile Polymers,
5. Functional Finishes for Natural & Synthetic Fibres,
6. Use of Alternate sources of energy in Textile Processing,
7. Processing of Polyester fibres at room temperature
8. Modification of Synthetic Fibres by Melt Spinning

Number of research students:

Ph.D. (Tech.) -
Ph.D. (Sci.) -
M.Tech. - 4
Integrated Ph.D. (Tech.) -

Number of research publications:

- International- 04
- National-

Number of sponsored projects :

Government - 01
Private -

Professional Activities :

- Member of Society of Dyers and Colorist
- Life Member of Indian Fibre Society

S. R. Shukla

B.Sc. (Hons.), B.Sc. (Tech.), Ph. D. (Tech.)

Professor of Technology of Dyeing & Printing and Registrar, ICT

Subjects taught :

1. Modification of Fibrous Polymers,
2. Technical Textiles,
3. Technology of Polymers, Fibres and Testing,
4. Advanced Textile Chemistry,
5. Advanced Textile Technology,
6. Technology of Fibres

Research interests :

Depolymerization of textile polymer waste and its Recycling, Decolorization of dyeing effluent, Effluent treatment and Waste minimization in textile wet processes, Enzyme technology in processing, Natural dye extraction and applications, Heavy metal removal and recovery, Use of ultrasonic in textile processing.

Research Students :

P.D.F.- Nil
RA - Nil
Ph.D. (Tech) - 01
Ph.D. (Sci) - 09
M.Tech- 06
M. Sc. - Nil
Patents: Nil

Research publications : 09

Sponsored Projects:

Government - 01
Private - 01

Professional Activities:

1. Member, Editorial Board, Indian Journal of Fibres & Textile Research
2. Life Member, Indian Fibre Society
3. Member, Polymer Society, India
4. Life Member, Textile Association (India)
5. Life Member, Colour Group of India
6. Life Member, Marathi Vigyan Parishad
7. Patron Member, Association of Chemical Technologists, India

Special Awards/Honors

- Fellow of Maharashtra Academy of Sciences
- Shiksha Ratan Award 2011

Mrs. Usha Sayed

B. Sc., M.Sc. (Tech), Ph. D. (Tech),

Associate Professor in Fiber Chemistry

Subjects taught:

Technology of Fibers, Technology of Dyeing and Printing, Technical Textile,. Technology of Finishing, Garment Processing, Preparation of Fabric, Testing of Textile, Advance Textile Processing.

Research interests:

Photo fading studies, Enzymatic Studies of Textiles, Leather Processing, Recycling of Papers, Laundering Recycling of Carpet, Recycling of Garments, Surface modification of Fibers, Natural finishes Dyeing With Natural Dyes, Studies of Bio-Polymers for Textile Effluent Studies Processing of Wool & Silk, etc., synthesis of cationic fixing agent and speciality chemicals and dyes, Antimicrobial Finishing.

Number of research students:

Ph.D. (Tech.) - 1
M.Tech. - 3

Number of research publications:

International- 2
International Posters – 2

Professional activities:

1. Member of Alumni Association
2. Best Ph.D.Tech Thesis Committee,

3. Member of the Committee for Women's Welfare, Mumbai University.
4. Member of board of studies Baroda university textile department.
5. Referee- for Nirmala Niketan college for M. Sc. (Home Science).
6. Referee- for SNDT.
7. Examiner for Nirmala Niketan college for M. Sc. (Home Science).
8. Student Councilling,
9. Member of AATCC.
10. Trained and Lectured students of national institute of Fashion Technology [NIFT]

M. D. TELI

B. Sc (Hons.), B.Sc. (Tech), Ph. D. (Tech), FTA (Hon.), F.M.A.Sci.

Professor of Textile Chemistry & Dean, SA & HRD, I/C Director

Subjects taught:

1. Modification of Fibrous Polymers,
2. Technical Textiles,
3. Technology of Polymers,
4. Fibres and Testing,
5. Advanced Textile Chemistry,
6. Advanced Textile Technology,
7. Technology of Fibres

Research interests:

Coated, Plasma modified, Sound barrier and Technical textiles, Specialty finishes with antibacterial and fragrance and water repellent properties,Super absorbents and medical textiles, Application of Nanotechnology and biotechnology for process intensification, Natural Dyes and functional synthetic dyes and their application on textiles, Chemical Processing and Modification of Natural and Synthetic fibres and Thickeners, Wet spun and Melt blend and Nano composite fibres, Electrokinetic and structure property relationship studies of Fibres.

Number of research students :

P. D. F. - Nil
RA - Nil
Ph.D. (Tech.) - 03
Ph.D. (Sc) - 2
M.Tech. - 07
M.Chem.Eng - Nil
M.Sc. - 2
Others (if any)

Number of research publications:

International- 17
National- Nil
Peer- reviewed- Conference proceeding- 5
Books-

Number of patents:

International - Nil
Indian – 1 (Applied)

Number of sponsored projects:

Government- 1
Private- Nil

Professional Activities:

1. Convener, India-ITME 2012, International Symposiums
2. Convener, International Conference Texsummit 2012, organized by Dept. of Fibres and Textile Processing, I.C.T.
3. Chairman, Research Monitoring Committee of Mission Reach Programme of TIFAC –DST for Technical Textiles at DKTE Textile Institute, Ichalkaranji
4. Member, Research Advisory Committee of ATIRA at Ahmedabad
5. Chairman, Jury of selection of "Best Company in Export Performance of Textile Machinery and Parts".
6. Served as Chairman, Research Monitoring Committee of Mission Research Programme of Kumarguru College Coimbatore.
7. Served as Member of Task Force on Seri biotechnology, DBT, New Delhi
8. Member of Research Advisory Committee, CSTRI, Bangalore.
9. Served as Member of Research Advisory Committee of BTRA
10. Chairman, Editorial Board, Journal of the Textile Association
11. Referee for Egyptian Journal of Chemistry, Cairo University, Egypt
12. Referee of Journal of Carbohydrate and Polymers, U.K.
13. Patron Member of Textile Association (India)
14. Patron Member of Association of Chemical Technologists, India.
15. Life Member of Colour Group of India.
16. Member of Editorial Board, Rossera
17. Member of Editorial Board, Colourage,

Special Awards/ Honours:

1. Academic Excellence Award by Textile Association in World Textile Conference, given at hands of Textile Secretary for meritorious contribution to the field of Textile Education, Research and Industry.
2. Shiksha Ratan Award by IFSI-Delhi
3. CSIR-CNRS (France) International Research Fellowship
4. Awarded GDR Fellowship for the research in Germany
5. Conferred Honorary Fellowship of Textile Association India
6. Conferred Fellowship of Maharashtra Academy of Sciences
7. Conferred Service Memento of Textile Association, India for distinguished service to Textile Industry.
8. Member, Board of Management of I.C.T., Deemed University
9. Member of Board of Directors, Siyaram Silk Mills
10. Served as Member of Board of Directors of Supertex-Sarex Pvt. Ltd.
11. Received more than about dozen awards and honours for being top rank holder in B.Sc. (Tech.) and M.Sc. (Tech.) Examinations

Mrs. Sujata Pariti

BSc, BSc (Tech), MSc (Tech), PhD (Tech)

Adjunct Professor

Subjects taught:

Technology of Textile Coloration and Technology of Wet Processing Machinery, Technology of Finishing – I, Technology of Finishing – II, Dye house lab, Pre-treatment of Textiles, Textile Finishing (M. Sc) and Finishing Lab (M. Sc)

Research interests :

- Sustainable Processing of Textiles
- Technical Textiles

Number of research students: NIL

Number of research publications:

International-01 (In Communication, Journal of Surfactants and Detergents, Springer Publications, Manuscript no. JSD-12-0067, submitted on 31-03-12),
National - 0

Number of sponsored projects:

Government - NIL
Private – NIL

Professional Activities :

Member, Society of Dyers and Colourists (SDC), London, for Mumbai Region from 2001

Bhagyashri Joshi
Jr Typist Clerk

Suryakant Gaikwad
Lab Assistant

J R Singh
Lab Attendant

Ankush Ghadge
Lab Attendant

Vilas Phalke
Dyehouse Assistant

J I Rana
Lab Assistant

Subodh Chavan
Lab Assistant

Yogesh Bhandare
Instrument Mechanic

Janardan Mohite
Lab Attendant

Vitthal Kamble
Lab Attendant

Prakash Khot
Lab Attendant

Ravindra Nandviskar
Lab Attendant

AWARDS OF VARIOUS FELLOWSHIPS

Name	Number
UGC-SAP	17
UGC-JRF (M Tech)	13

Sponsored Projects

GOVERNMENT SPONSORED PROJECTS

Sr. No.	Sponsor	Title	Duration	Total Amount	Principle Investigator	Research Fellows
1.	MODROBS, All India Council for Technical Education, New Delhi	Modification of Synthetic Fibres & their colouration	5 yrs	Rs.5 lakhs	Professor R. V. Adivarekar	
2.	Golden Jubilee Research Fund / ICT Research Fund	Polymeric Dispersants for Pigments	1Year	Rs. 35,000/-	Dr Ravindra Kale	

	UGC-CAS Phase VII (Dept. of Textiles, Dyes, Polymer, S. Coating, Physics and Chemistry.	Physico Chemical aspects of Textile, Fibres, Polymers and Dyes	2007-2012	Rs. 97.5 lakhs	Professor S. R. Shukla (Coordinator for 4 departments)	UGC - SAP (Under SRS), Suryavanshi Umesh, Borse Bhushan, Shukla Pushkar, Parab Yogesh, Shah Rikhil
3.	FIST, DST, New Delhi	Melt spinning of synthetic fibres	5 yrs	Rs. 20 lakhs	Professor M. D. Teli	

PRIVATE AGENCIES SPONSORED PROJECTS

Sr. No.	Sponsor	Title	Duration	Total Amount	Principle Investigator	Research Fellows
1.	Unilever Industries Pvt. Ltd.	Yellowing of fabrics	1.5 years	8.50 Lakh	Professor R. V. Adivarekar	Mr. Santosh Biranje
2.	Unilever Industries Pvt. Ltd.	Dyeing of fibres	1Year	5.60 Lakh	Professor R. V. Adivarekar	Ms. Pallavi Madiwale

National and International Collaborations

NATIONAL

Memorandum of understanding (MOU) is signed by the Dept with the following institutes;

1. BTRA, Mumbai
2. WRA, Thane
3. CIRCOT, Mumbai and
4. Dystar India Private Limited, Navi Mumbai

The Aim of these MOU's is to put in collaborative efforts for quality teaching and research by the way of establishing a written document under which both these technological and research institutes undertake collaborative programs in the areas of mutual interest.

INTERNATIONAL

PROFESSOR M. D. TELI

- I have collaboration with University of Mauritius and one Student-cum-Faculty from that University, is being supervised by me as co-guide and I am her international supervisor.
- The same university is organizing International Conference on "Sustainability in Textiles" and I am assisting them on the advisory committee.
- I have also established working relationship with the faculty from Educational Institutions in Israel, namely Shenker's College of Fashion and also delivered lecture in Technion University, Haifa, Israel.
- I am also in process of forming International links with University of Leeds, University of Manchester and University of Bolton.

Publications (International Journals, Books, Book Chapters, Patents)

Sr.	Title	Authors	JOURNAL	Details of the paper	Year
PROFESSOR R V ADIVAREKAR					
1.	Analysis of the dyeing properties of Bluish-violet pigment extracted from Chromobacterium spp.	R. V. Adivarekar, M Nerurkar, Zarine Bhatena, Jyoti Vaidyanathan	International dyer	19 (6) , 38-42	July 2011
2.	Screening of non-formaldehyde wrinkle free finishing agents for cotton	Javed Sheikh, R. V. Adivarekar	Asian Dyer	56, 40-43	Oct-Nov 2011
3.	Dyeing of Fabrics With a Natural Orange Pigment Extracted from Bacteria Isolated from Garden Soil	R. V. Adivarekar, N. Kanoongo, M. P. Nerurkar, M. M. Joshi	Journal of Textile Association	72 (4), 235-237	Nov- Dec 2011
4.	Use of Prodigiosin like colourant produced by Serratia sakuensis for dyeing natural fibres	Jyoti Vaidyanathan, Zarine Bhathena Langdana, Adivarekar R.V., Madhura Nerurkar.	Applied Biochemistry & Biotechnology	166 (2) , 321-335	Jan 2012
5.	Novel Approach for Value addition of Cotton Textiles	R. V. Adivarekar, Avinash K. & Chet Ram Meena	International Dyer	34-37	2012
6.	The Futuristic Textile Printing Technology – Ink Jet Printing,	Adivarekar R. V., Biranje S. S., Khurana N. S.	Asian Dyer	9 (2), 29-31	April-May 2012
7.	Synthesis of Halogen Free Flame Retardant and Development of FR Polypropylene	R. V. Adivarekar, S. D. Dasarwar, N. S. Khurana	Indian Journal of Fibre & Textile Research	accepted on 21st Feb 2012	-
8.	Optimization of Alkali and Sodium Persulphate for Combined Desizing-Scouring-Bleaching (D-S-B) Exhaust Process	R. V. Adivarekar, N. P. Darade, R. S. Harane, N.S. Khurana	Colourage	59(3), 35-41	March 2012
9.	Dyeing of Natural Fibres with a Red Pigment produced by Streptomyces coelicolor,	Madhura Nerurkar, Jyoti Vaidyanathan, R. V. Adivarekar, Zarine Bhathena	Journal of Textile Association	72(6), 377-380	Mar- Apr 2012
DR. R.D. KALE					
10.	Synthesis and application of zinc oxide nanoparticles on nylon fabric by layer by layer technique as antimicrobial property	Ravindra D. Kale and Chet Ram Meena	International Journal of Basic and Applied Chemical Sciences -ISSN: 2277-2073 (Online)	1 (1) Pages 1-8	October-Dec, 2011
11.	Polyester Nanocomposite Fibers with Improved Flame Retardancy and Thermal Stability	Teli M D; Kale Ravindra	Polymer Engineering and Science	Published online/ Hard copy awaited	2012
12.	Polyester Nanocomposite fibers with Antibacterial Properties	Mangesh D. Teli and Ravindra D. Kale	Advances in Applied Science	Accepted	2011
13.	Low temperature dyeing of PET / PTT blend fibbers	Teli M D; Kale Ravindra	Research Journal of Textile and Apparel	Accepted	2011
DR. SUJATA PARITI					
14.	Application of Lipase from Marine Bacteria Bacillus sonorensis as an Additive in Detergent Formulations,	Madhura Nerurkar, Manasi Joshi, Sujata Pariti and R. V. Adivarekar	Journal of Surfactants and Detergents, Springer Publications, In communi-cation,	(Manuscript no. JSD-12-0067, submitted on 31-03-12)	
15.	Coating And Their Application In Textile (Part-7)	Pariti Sujata	Dye Chem Pharma Business News	XVII, No. 5,60 - 61	2012
16.	Coating And Their Application In Textile (Part-6)	Pariti Sujata	Dye Chem Pharma Business News	XVII, No.4,57 - 58	2012
17.	Coating And Their Application In Textile (Part-5)	Pariti Sujata	Dye Chem Pharma Business News	XVII, No. 3,55 - 56	2012
18.	Coating And Their Application In Textile (Part-4)	Pariti Sujata	Dye Chem Pharma Business News	XVII, No. 2,58 - 59	2012
19.	Coating And Their Application In Textile (Part-3)	Pariti Sujata	Dye Chem Pharma Business News	XVII, No. 1,59 - 61	2012
20.	Coating And Their Application In Textile (Part-2)	Pariti Sujata	Dye Chem Pharma Business News	XVI, No, 1256 - 59	2012
21.	Coating And Their Application In Textile (Part-1)	Pariti Sujata	Dye Chem Pharma Business News	XVI, No. 11,56 - 59	2012
DR. USHA SAYED					
22.	"Application of Laser in textiles"	Dr (Mrs) Usha Sayed, Navodit Kadam	Journal of Textile Asia	Nov-Dec 2011	
PROFESSOR S.R.SHUKLA					
23.	A Simple, Efficient and Green Method for Synthesis of Trisubstituted Electrophilic Alkenes using Lipase as a Biocatalyst.	B. N. Borse, S. R. Shukla and Y. A. Sonawane	Synthetic Communi-cation	42 (3), 412-423	2012
24.	Aminolytic depolymerization of poly ethylene terephthalate bottle waste by conventional and microwave irradiation heating	Y. S. Parab, N. D. Pingale and S. R. Shukla	Journal of Applied Polymer Science	In press	2012

25.	Effective Aminolytic depolymerization of poly(ethylene terephthalate) waste and synthesis of bis-oxazoline therefrom.	R. V. Shah and S. R. Shukla	Journal of Applied Polymer Science	125 (5), 3666-3675	2012
26.	Ionic liquid catalyzed aminolysis of PET waste	V. S. Palekar, R. V. Shah and S R Shukla	Journal of Applied Polymer Science	In press	
27.	Synthesis of novel dihydropyrimidin-2(1H)-ones derivatives using lipase and their antimicrobial activity	B. N. Borse, V. S. Borude and S. R. Shukla	Current chemistry letters	Vol. (1), 47-58	2012
28.	Recycling of PET Waste Using 3-Amino-1-propanol by Conventional or Microwave Irradiation and Synthesis of Bis-oxazin there from	R.V. Shah, V. S. Borude and S. R. Shukla	Journal of Applied Polymer Science	In press	2012
29.	Microwave irradiated synthesis and characterization of 1, 4-phenylene bis-oxazoline form bis-(2-hydroxyethyl) terephthalamide obtained by depolymerization of poly (ethylene terephthalate) (PET) bottle wastes	Y. S. Parab, R. V. Shah and S. R. Shukla	Current chemistry letters	Vol. (1), 81-90	2012
30.	Microwave synthesis & antibacterial activity of 1, 4- Bis (5- aryl- 1, 3, 4- oxadiazole- 2- yl) benzene derivatives from terephthalic dihydrazide obtained through aminolysis of PET bottle waste	Y. S. Parab and S. R. Shukla	Waste and Biomass Valorization	In press	2012
31.	Biosorption of Cu(II), Pb(II), Ni(II) and Fe(II) on Alkali Treated Coir Fibres	P. M. Shukla and S. R. Shukla	Separation Science and Technology	In press	2012
PROFESSOR M.D. TELI					
32.	Highly absorbent lignocellulosic material through grafting	Teli, M.D., and Sheikh Javed N.	International dyer	195(6), 35-37	July 2011
33.	Antibacterial textiles using antibacterial dyes	Teli, M.D., and N. Sekar, Jain A., Sheikh Javed N.	Asian Dyer	8(4), 37-41	Aug 2011
34.	Effect of swelling and reactive dyeing on the accessibility of cotton to cellulase enzymes	Paul R. and Teli M.D.	Journal of Applied Polymer Science	121 (4),1946-1950	2011
35.	Polyester nanocomposite fibres with improved flame retardancy and thermal stability	M D Teli and R D Kale	Polymer engineering and science	In Press	2011
36.	Polyester nanocomposite fibres with antibacterial properties	M D Teli and R D Kale	Advances in Applied science	2(4) ,491-502	2011
37.	Eco friendly dyeing using natural mordants extracted from Embellica Officinalis G fruit on cotton and silk fabrics with antibacterial activity	Prabhu, K.H., Teli, M.D., Nilesh Waghmare	Fibers and Polymers	12 (6), 753-759	2011
38.	Application of metal mordant at safe limit for improved coloration and antibacterial properties	Prabhu, K.H., Teli, M.D.	International dyer	196 (7),29-33	2011
39.	Eco-dyeing using Tamarindus indica L. seed coat tannin as a natural mordant for textiles with antibacterial activity	K H Prabhu, M.D.Teli	Journal of Saudi Chemical Society	Article in press	2011
40.	Modification of bamboo rayon for cationic dyeability	Teli, M.D., and Sheikh Javed N.	Cellulose chemistry and Technology	46(1-2), 53-59	2012
41.	Simultaneous pigment dyeing and Resin finishing of cotton	Teli, M.D., and Sheikh Javed N., Khushbu Shah	Asian Dyer	8(6), 30-33	2012
42.	Graft co-polymerization of acrylamide onto bamboo rayon and fibre dyeing with acid dyes	Teli, M.D., and Sheikh Javed N.	Iranian Polymer Journal	21(1), 43-49	2012
43.	Antibacterial and acid and cationic dyeable bamboo (Cellulose) rayon on grafting	M.D.Teli and Javed Sheikh	Carbohydrate Polymers	88 (4), 1281–1287	2012
44.	Natural dyeing of natural fibres using natural mordants	M.D.Teli, Javed Sheikh and Falguni Katkar	Asian dyer	Accepted	-
45.	Extraction of chitosan from shrimp shells and application in simultaneous pigment dyeing and antibacterial finishing of denim	M.D.Teli and Javed Sheikh	International Dyer	197 (4) , 28-31	2012
46.	Low temperature dyeing of PET / PTT blend fibbers	M D Teli and Ravindra Kale	Research Journal of Textiles and Apparels	Accepted	-
47.	Extraction of chitosan from shrimp shells and application in durable antibacterial finishing of bamboo rayon	M.D. Teli and Javed Sheikh	International Journal of Biological macro-molecules	50 (5), 1195–1200	2012
48.	Self and mixed shades of catechu and henna on cotton and silk	M.D. Teli, Javed Sheikh, Kushal Mahale, Vijendra Labde, Rupa Trivedi	Asian Dyer	Accepted	-

49.	Silver nanoparticls containing bamboo rayon as durable antibacterial material	M.D. Teli and Javed Sheikh	Fibers and Polymets	Commu-nicated	
50.	Acetylation of jute fibre for improved oil absorbency	M.D.Teli and Sanket Valia	Fibers and Polymers	Commu-nicated	
51.	Acetylation of banana fibre for improved oil absorbency	M.D.Teli and Sanket Valia	Carbohydrate Polymers	Commu-nicated	
52.	Multifunctional Finishing Formulation for Cotton using chitosan extracted from Bio-waste	M.D. Teli and Javed Sheikh	Carbohydrate Polymers	Commu-nicated	
53.	Application of acrylic acid grafted cassia seed gum composites in printing of cotton fabric	M.D. Teli and Abhilasha Rangi	Dyes and Pigments	Commu-nicated	

Books/ Book Chapters

PROFESSOR S. R. SHUKLA

Environmental pollution abatement and waste minimization in dyeing by Shukla S.R., a Chapter in Book entitled "Environmental aspects of textile dyeing"Edited by Dr. R. M. Christie, Heriot-Watt University, UK Chapter 6, pp. 116-148, 2007

Patents

PROFESSOR S. R. SHUKLA

Novel Synthesis and Biological Activity of Barbituric Acid Derivatives. Bhushan N. Borse, Sanjeev R. Shukla Application no. 2094/MUM/2010

Outside Participation
(Lectures delivered, seminars / workshops/ conferences, oral/ poster presentation/ visits)

PROFESSOR R. V. ADIVAREKAR

1. Delivered a lecture at Unilever R&D, Unilever Industries Private Limited, Bangalore on 29th July 2011 on the topic, "Natural Colourants".
2. Paper presented on "Dyeing of Silk with natural dye from Serratia marscecens subsp marscecens", at International Conference on International Congress on environmental Research [ICER-2011], held on 15th -17th December 2011 at Sardar Vallabhbhai Institute of National Technology, Surat, Gujarat.
3. Delivered a lecture at Raymond Ltd., Vapi on 15th March 2012 on the topic, "Latest Developments covering chemistry of reactive Dyes and wool dyeing".
4. Presented poster on use of lipase in detergents at New horizons in Biotechnology organized by BRSI, on 11th -14th November 2012, at Trivandrum
5. Poster presented on "Dyeing of Natural Fibres with a Red Pigment produced by Streptomyces coelicolor" at International Conference on Advances in Biological Sciences, 15th -17th March 2012 at Kairali Heritage, Kannur, Kerala.
6. Poster presented on "Utilization of Citrus limetta[sweetlime] peels as a substrate for pectinase production by marine Bacillus subtilis at International Conference on Advances in Biological Sciences, 15th -17th March 2012 at Kairali Heritage, Kannur, Kerala.

DR. R. D. KALE

1. Paper presented on "Synthesis of Titanium dioxide Nanoparticles and application on Nylon fabric by layer by layer Technique for Antimicrobial Property" at VASTRA'11, held on 18th February 2011, at V.J.T.I., Matunga, Mumbai.
2. Paper presented on "Synthesis and application of ZnO Nanoparticles on Nylon fabric by LbL Technique for Antimicrobial Property" at Golden Jubilee Young Researcher's Symposium on Emerging Trends in Textile/ Fibre Research & applications , held on 11th & 12th March 2011, at IIT, Delhi.

DR SUJATA PARITI

1. Attended Work shop on Non-wovens from Oct 7 and 8, 2011at Mumbai
2. Attended Exhibitions – Techtextil India, from Oct 10 - 12 2011 at Goregaon Exhibition Cenre, Mumbai.

DR. USHA SAYED

1. Presented poster on Antisoiling finish of polyester fibre at Fibre society, AATCC & national textile conference joint synporium, 11-14 oct 2011 held at Francis Marino, hotel charleston S.C. USA
2. Presented poster on Biomimicking of enzymes for textile processing at Fibre society, AATCC & national textile conference joint synporium, 11-14 oct 2011 held at Francis Marino, hotel charleston S.C. USA

PROFESSOR S. R. SHUKLA

1. Presented Paper at IIT Roorkee 2011 titled with "Adsorption of heavy metal ions with peanut husk carbon".
2. Paper presented at Thadomal Shahni College of engineering in Chemergence 2011 on "Adsorption of heavy metal ions with peanut husk carbon".
3. Presented Poster at "AFFINITY" MIT, Pune 2011 titled with "Green chemistry: a global solution".
4. Presented Paper at IIT Roorkee 2012 titled with "Energy saving in Cooling tower".
5. Presented Paper at "AZEOTROPHY", IIT Mumbai, Mumbai 2012 on topic "Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H2O2 technique."
6. Presented Paper at IIT Mumbai 2012 titled with "Dye decolorisation by using laccase enzyme produced from fungi".
7. Presented Paper at a National Conference on "Energy management and Alternate sources of Energy 2012" at Thadomal Shahni college of engineering, Mumbai.
8. Presented paper at IIT ROORKEE on Dye decolorisation by laccase produced from corgholus versicolour in combination with UV/H2O2 technique.
9. Presented Paper at "AZEOTROPHY", IIT Mumbai, Mumbai 2012 on topic "Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H2O2 technique."
10. Presented paper at "COGNIZANCE" IIT Roorkee, Roorkee 2012 on research topic "Colour removal from textile effluent using biological method."
11. Presented Paper at "AZEOTROPHY", IIT Mumbai, Mumbai 2012 on topic "Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H2O2 technique."
12. Presented paper at "COGNIZANCE" IIT Roorkee, Roorkee 2012 on research topic "Colour removal from textile effluent using biological method."

13. Attended the 12th Orientation Programme in Catalysis Research From 19th Nov. to 6th Dec. 2011 at National Centre for Catalysis Research Indian Institute of Technology Madras, Chennai.
14. Attended PLAST INDIA 2012 at Pragati Maidan, New Delhi.
15. Attended 2nd International Conference on recycling and reuse of materials and products, Kottayam, Kerala in 2011.
16. Presented Poster at DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology (SESTEC-2012) , SVKM Mithibai College, Mumbai on ''Biosorption of Uranium (VI) solution from aqueous medium by Citrus limetta peels.''
17. Presented Poster at DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology (SESTEC-2012) , SVKM Mithibai College, Mumbai on "Efficient removal of heavy metals by chemically modified coir fibres"

PROFESSOR M. D. TELI

1. Presented Paper on "Application of Waste grains for useful applications in Textile M.D.Teli and Javed Sheikh" in 24th National Convention of Textile Engineers on "Textile and Apparel industry: Contemporary issues to address in coming years" at Bangalore on 19-20 August 2011.
2. Presented Paper on "Modification of bamboo rayon to render it cationic dyeable and antibacterial M.D.Teli and Javed Sheikh" in International conference on "Textiles: A decade ahead" Organized bty NISTI and IIT Delhi" at PHD House, New Delhi on 9-10 Sept 2011.
3. Presented Paper on "R & D in Chemical Processing of Cotton M.D.Teli" World Cotton Research Conference-5 organized by ISCI, ICAR and ICAC" at Mumbai on 7-11 Nov. 2011.
4. Presented Paper on "Extraction of chitosan from shrimp shells and application in simultaneous pigment dyeing and antibacterial finishing of denim M.D.Teli and Javed Sheikh" in ATNT 2011" KCT, Coimbatore on 15-17th dec 2011.
5. Chaired a session at 53rd Joint Technological Conference of BTRA, SITRA, NITRA, ATIRA. at BTRA, Mumbai 17-18 Feb 2012
6. Delivered Key note address at "Italian Textile Machinery Workshop" organized in Mumbai Mumbai 2012.
7. Delivered lecture as Chief Guest SDC Seminar held in Thane March 2012.

Seminars/Workshops Organized

PROFESSOR R. V. ADIVAREKAR

1. Texquest 2012, annual national level technical competition
2. Texpression 2012 annual cultural event of the department
3. M.V.Nimkar Endowment Lecture by Professor M.L. Gulrajani on 16th March 2012 on the topic "Enzymatic Functionalisation of Textiles for Production of Smart Textiles"

DR. R.D. KALE

1. Organized Student Paper presentation competition Texquest 2012 at Institute of Chemical Technology, Mumbai on 22nd March 2012
2. Organized cultural function of the Textile dept, Texpression 2012 at Institute of Chemical Technology, Mumbai on 22nd March 2012
3. Organized Lecture of Dr. M.L. Gulrajani, Emeritus Professor of Indian Institute of Technology, New Delhi at Institute of Chemical Technology, Mumbai on March 16, 2012
4. Organized Lecture of Dr. S. Sreenivasan, Former Director, Central Institute for Research on Cotton Technology at Institute of Chemical Technology, Mumbai on April 20, 2012
5. Organized Lecture of Dr. A.N. Desai, Director, BTRA at Institute of Chemical Technology, Mumbai on April 20, 2012
6. Organized Lecture of Mr. A.K. Prasad, Clariant (Chemicals) India Ltd. at Institute of Chemical Technology, Mumbai on 22nd March 2012
7. Organized UG and M.Sc.- Textile Chemistry students visit to Wool Research Association, Thane on 2nd March 2012
8. Organized UG and M.Sc.- Textile Chemistry students visit to Alok Industries Ltd., Vapi 17th & 18th Feb 2012
9. Organized UG and M.Sc.- Textile Chemistry students visit to TATA Mills, Dadar on 17.10.11
10. Organized UG and M.Sc.- Textile Chemistry students visit to Madhana Dyeings-Tarapur on 1st April 2011

DR SUJATA PARITI

1. Organized Work shop on Batik Style of Printing
2. Organized Lecture by Mr. D.V. Prabhakar (July 14, 2011
3. Organized Lecture by Mr. A.K. Prasad, Clariant (Chemicals) India Ltd. (March 22, 2012)
4. Lecture by Professor M. L. Gulrajani, Emeritus Professor, Textile Department, IIT Delhi (March 16, 2012)
5. Organized Lecture by Dr. Sreenivasan, Ex-Director, CIRCOT, (April 20, 2012)
6. Organized Lecture by Dr. A.N Desai, Director, BTRA, (April 20, 2012)
7. Organized Texquest 2012 and Texpression 2012 (March 22, 2012)
8. Organized Industrial Visit to Alok Industries (Feb, 17 and 18, 2012)

PROFESSOR M. D. TELI

International Conference on Sustainability by University of Mauritius and International Conference Texsummit-2012;
67TH All India Textile Conference ,Feb 2012
Convener, India-ITME 2012, International Symposiums
OGTC conference held in Sept. 2012

Industrial Consultancy

PROFESSOR R.V. ADIVAREKAR

Unilever Industries Pvt. Ltd., Mumbai

PROFESSOR S. R. SHUKLA

Polyfibres Ltd., Vapi

PROFESSOR M. D. TELI

National Marine Engineering, Mumbai
Huntsman International, Mumbai

In-house Responsibilities

PROFESSOR R.V. ADIVAREKAR

1. Looking after Students Sports Activities.
2. Member of garden committee
3. Member of Examination committee
4. Member of Academic Activities committee

DR. R.D. KALE

1. Coordinator of the dept for UGC-SAP programme
2. Assist the HOD in preparing various reports for the dept
3. Divisional Representative of the dept for IPC, TEQIP II etc.
4. To supervise different activities of the UG students like Industry Visit
5. Member of the Cultural activity cell of the Institute
6. Organizing workshops, visiting lectures and endowment lectures for the Department.

DR SUJATA PARITI

1. Assisting the Head of the Department in various activities such as making reports and submitting these on a timely basis.
2. Arranging for Industrial Visits of students (under graduates as well as post-graduates).
3. Organizing workshops, visiting lectures and endowment lectures for the Department.

DR. USHA SAYED

1. Student Counseling,
2. Member of Best Ph.D. Tech Thesis Committee,
3. Member of the Committee for Women's Welfare, Mumbai University

PROFESSOR S.R. SHUKLA

1. Registrar Institute of Chemical Technology

PROFESSOR M.D. TELI

1. In absence of Vice Chancellor, I serve as In charge VC whenever appointed.
2. Serving as Dean, Students Affairs & Human Resource Development
3. Served as Chairman, Inquiry committee appointed by Chairman, BOG to look into m students grievances
4. Served as Co-coordinator for the Faculty Training, Abroad/ Within India under TEQIP.
5. Served as Co-coordinator of the Institute for the TEQIP Programme Phase I being implemented by World Bank
6. Chaired meetings as Directors Nominee for enhancement of SRFs
7. Served as Ex-officio Chairman of Various committees such as Staff and Students Welfare Committee, Accommodation Allotment Committee
8. Served as Vice President Technological Association: All the activities of students are carried out under my guidance.

Seminars / Projects / Home Papers

UNDERGRADUATE (FINAL YEAR B.TECH. SEMINARS)

Sr.	Student's Name	Topic Name	Guide
1.	Mayee Samidha Dilip	Enzymer Immobilization on Textile Substrate	RVA
2.	Iyer Subramaniam P.	Combined Dyeing & Finishing	RVA
3.	Parekh Namrata Ashok	Cationic Reactive Dyes	RVA
4.	Sanware Deepak Madhukar	Combined Pre-treatment & Dyeing	RVA
5.	Jangam Anuradha Sanjay	Grafting as a tool for superabsorbancy	RVA
6.	Gunje Pallavi Manmath	Processing of CDPET & Its blends	RVA
7.	Pawar Swapnil Devidas	Processing Approaches for Zero discharge	RVA
8.	Ranveer Dhammapal B.	Unconventional Natural Fibers	RVA
9.	Shah Prachi Bharat	Surface Modification of PET	RDK
10.	Athithi Raman	Modification of Nanoclays	RDK
11.	Dhole Kiran Prakash	Application of graphite based products	RDK
12.	Kale Mrunmayee Sanjay	Recycling of Nonwoven Waste	RDK
13.	Malhotra Madhur	Manufacturing of Non woven	RDK
14.	Shah Rohini Ashwin	Testing of Non wovens	RDK
15.	Labade Vijendra Ashokrao	Applications & Raw materials, in manufacturing Non Wovens	RDK
16.	Mahalle Kushalkumar R.	Sportech	SP
17.	Gadhave Ashish Dashrath	Autotech	SP
18.	Agrawal Avinash	Polyelectrolytes In Textiles	SP
19.	Khade Nutan Balaso	Wound Healing Textiles	SP
20.	Khare Rohit Raghinath	Agrotech	SP
21.	Girwalkar Abhijeet A.	Textiles In Architecture	SP
22.	Mhatre Alankar Govind	Composites	SP
23.	Saha Abhisek	Nano engineered Fire Resistant Composite Fibres	US
24.	Srivastava Anshu	Chemical Synthesis of Antistatic , Anti soiling and Flame retardant Finishing agents	US
25.	Mahajan Geetal Atul	Biotechnological reduction of Textile fibres	US
26.	Ghatpande Shrinidhi Girish	Biodegradable Hydrogels in Technical Textiles	US
27.	Suthar Heet Pavan	Modelling consumer behaviour for online environment	US
28.	Kulkarni Sanket Damidhar	High Tenacity High modulus melt spun fibres	US
29.	Girwalkar Aniket Anil	Development of eco friendly Textile Processing	US
30.	Ganbote Shyamsunder S.	Surface modification of fibres with natural polymers	US
31.	Karlekar Naina	Treatment Of Textile Effluent Especially Metal Salt Removal	MDT

32.	Marewad Dinesh Sanjeev	Biotechnology In Textiles- Market Trends And Enzymes Application In Textiles	MDT
33.	Ughade Snehal Ratan	Textile Recycling Of Waste Material For Application In Textiles	MDT
34.	Bansal Prabhat Shobha	Extraction And Application of Natural Mineral & Herbal Dyes	MDT
35.	Gupta Rahul	Extraction And Application Of Medicinally Important Herbs In Wellness Products	MDT
36.	Krishna Satishkumar	Processing Of Animal Fibres Including Human Hair	MDT
37.	Khard Richa	Carbon Credit And Effluent Reduction treatment in Textile Processes	MDT
38.	Humne Dhammaprakash M.	Use Of Ultrasound, Plasma And Microwave In	MDT

UNDERGRADUATE (FINAL YEAR B.TECH. PROJECTS)

Sr.	Name of Student	Topic	Guide
1.	Geetal Mahajan and Rohit Raghunath Khare	Combine effect of flame retardant and water repellent finishes	RVA
2.	Prachi B Shah and Alankar Mhatre	Encapsulation of silicone emulsions	RVA
3.	Anshu Srivastava and Abhijit Girwalkar	Printing on cotton wool blend	RVA
4.	Mrunmayee S. Kale and Nutan B. Khade	Synthesis of superabsorbent from sago starch	RVA
5.	Avinash Agarwal &	Dyeing of animal hair using natural dyes	MDT
6.	Mayee Samidha Dilip &	Green Route for the Synthesis of Nano Particles	RDK
7.	Iyer Subramaniam P. &	Chemical Recycling of Nylon by Dissolution Re-Precipitation technique	RDK
8.	Parekh Namrata Ashok & Gunje Pallavi Manmath	Synthesis of Polyaniline Nano-Fiber and Nano-Grain By using Nano-Emulsions	RDK
9.	Ghatpande Shrinidhi Girish & Jangam Anuradha Sanjay	Preparation Of Nano-Disperse Dyes and Testing their Performance on Microfilament Polyester	RDK
10.	Rahul Gupta	Synthesis of Polyelectrolyte, Modification of Cotton and their Application in Textile Processing	SP
11.	Saket Kulkarni and Richa Khard	Printing with Natural Dyes	SP
12.	Prabhat Shobha Bansal and	Herbal Finishes to Impart Anti-microbial Properties	SP
13.	Krishna Satishkumar and Aniket Girwalkar	Decolonization Of Dyes Using Laccase Enzyme	SP
14.	Kiran Dhole And snehal Ughade	Application of pharmacuticeutical drug in wool processing	US
15.	Athithi Raman Dinesh Marwad	Application of Laccase enzyme in Textile Processing	US
16.	Naina Karlekar Dipak Sonware	Studies In dyeing	US
17.	Abhishek Shaha Dhammaprakash Hume	Preparation and Application of Superabsorbant Based on natural Sustrate	US
18.	Ashish Gadhave & Rohini Shah	Recycling of waste from germinated grains in textile application	MDT
19.	Vijendra Labade & Kushalkumar R. Mahalle	Application of natural dyes on textile fabric	MDT

M. TECH. SEMINAR AND CRITICAL REVIEW (2011-2012)

Sr.	Name	Previous Institute	Seminar	Critical Review	Guide
1.	Abhinav Nathany	MLVTI, Bhilwara	Speciality cloth for sport textile	1-Allyl-3-methylimidazolium chloride room Temperature ionic liquid: A new and powerful Nonderivatizing Solvent for cellulose	RVA
2.	Girendra Pal Singh	MLVTI, Bhilwara	Composite in Sport textile	Mechanical behavior of natural fibre composites	RVA
3.	Santosh Biranje	DKTE Textile and engineering institute, Ichalkaranji	Ink Jet Printing SURFACE modification & micro encapsulated pigm-ented ink for ink jet printing on textile fabric		RVA
4.	Sachin Patil	ICT, Mumbai	Sport textile Technique, Scope & Future	Moisture Management Properties of Wool/ Polyester & wool/ Bamboo Knitted fabrics for sportswear base layer	RVA
5.	Pallavi Madiwale	ICT, Mumbai	Black & Brown Shades using Natural Dyes	Production of Textile Reddish Brown Dye using fungi	RVA
6.	Umesh Kore	DKTE, Ichalkaranji	Cross-linking agents	Biological degradation of synthetic polyesters-Enzymes as potential catalysts for polyester recycling	RDK
7.	Prerana Kane	ICT, Mumbai	Recycling of polymer waste	Effect of Fe-Pd bimetallic nanoparticles on Sphingomonas sp. pH-07 & a nano-bio hybrid process for triclosan degradation	RDK
8.	Pravin Kokate	ICT, Mumbai	Smart textiles	Green composites using Cross linked Soy Flour and Flex yarns	US

9.	Shilpa Wanjari	College of Engg & Tech., Akola	Methods & machines of manufacturing technical textiles	Jute and Glass fibre hybrid Laminate	US
10.	Bharati Pahuja	Panipat Instituet of Engg. & Technology	Application of nanotechnology in textiles	Biosorption of Pb(11) from aqueous solution using chemically modified Moringa Oleifera leaves	SRS
11.	Shital Palaskar	SGGS, Nanded	Vapour phase graft co-polymerisation	Effect of sludge conditioning by chemical method with magnetic field application	SRS
12.	Navneet Singh Shekhawat	MLVG Tech, Bhilwara	Studies in Medicinal herbs and Scope of applications on Textiles	Ultraviolet resistant / Antiwrinkle finishing of cotton fabrics by sol-gel method	MDT
13.	Pravin Chavan	ICT, Mumbai	Studies in Aroma Finished Fabrics	Nanosized silver powder via reduction of silver nitrate by sodium formaldehyde sulphoxylate in acidic pH medium	MDT
14.	Parag Bhavsar	ICT, Mumbai	Studies in UV Resistant and Anti microbial Textiles	Study on starch graft acrylamide/mineral powder superabsorbent composite	MDT
15.	Aranya Ghosh	Institute of Jute Technology, Kolkatta	Nano material applications on Textiles for functional properties	UV protection properties of silk fabric dyed with Eucalyptus leaf extract	MDT

M.TECH. (PROJECTS) 2011-12

Sr.	Student's Name	Previous Institution	Topic	Supervisor
1.	Rachana Harne	DKTE Textile and engineering institute, Ichalkaranji	Selective effluent reuse in textile wet processing	RVA
2.	Avinash K.	DKTE Textile and engineering institute, Ichalkaranji	Studies in reactive finishes	RVA
3.	Arunab Agnihotri	Gautam Buddha Technical University, Lukhnow, UP	Functionalisation by Modern Finishing Technique on Textiles.	RDK
4.	Ashish Banerjee	Govt. College Of Engineering & Textile Technology, Berhampore.	Process modification in wet processing of textiles.	RDK
5.	Kamini Sharma	Shri Vaishnav institute of technology and science Indore. M.P	Finishing of synthetic fabrics with flame retardant, antistatic and antisoiling finishing	US
6.	Pankaj Mendhe	Shri Guru Gobind Singhji Institute of Engineering & Technology, Nanded	Problems & Remideies of Heavy Metal Pollution	SRS
7.	Munish Arora	Guru Nanak Dav University, Amritsar, Panjab	Effluent treatment by ultrasonication	SRS
8.	Parmar Neha D.	MET College, Mumbai	Colour Removal From Textile Effluents By Microbial Method	SRS
9.	Raghav Mehra	Guru Nanak Dav University, Amritsar, Panjab	Application of Plasma and Coating Techniques in Textile	MDT
10.	Abhilasha Rangi	Technological institute of textile and sciences, Haryana	Modification of Biopolymers for Value Addition	MDT
11.	Sanket Valia	DKTE"S Textile And engineering College, Ichalkaranji	Processes for reducing Water and Energy Consumption in Textile Processing Industry	MDT

M.SC. TEXTILE CHEMISTRY - SEMINARS (2011-12)

Sr.	Students Name	Topic Name	Guide
1.	Badhe Pallavi Sharad	Textile Polymers in Medical Textiles	RVA
2.	Fegade Rajeshree Huna	Phase change Materials in Technical Textiles	RVA
3.	Navghare Amar Avinash	Modification of Polypropylene fibres	RDK
4.	Patil Mahendra Sudhakar	Recycling of Nylon fibres	RDK
5.	Sharma Ravikanth	Hygiene Textiles	SP
6.	Thakur Nivedita	Eco friendly Flame Retardant	SP
7.	Kamble Eknath Narayan	Speciality Chemicals for Textiles	US
8.	Kamble Maruti Bhimrao	Finishing of Synthetic Fibres	US
9.	Gorde Shruti Satish	Sport Textile	MDT
10.	Jadhav Akshay Chandrakant	Application of Biopolymers	MDT

M.SC. TEXTILE CHEMISTRY - PROJECTS (2011-12)

Sr.	Students Name	Topic Name	Guide
1.	Badhe Pallavi Sharad	Temperature regulating belt	RVA
2.	Fegade Rajeshree Huna	Herbal colours for Holi festival	RVA
3.	Navghare Amar Avinash	Estimation And Extraction Of Oligomers In Polyester Fibres	RDK
4.	Patil Mahendra Sudhakar	Studies in Pigment dispersion	RDK
5.	Sharma Ravikanth	Modification of Cellulose and Printing with Acid and Basic Dyes	SP
6.	Thakur Nivedita	Application of Flame retardants and Water Repellants (simultaneously)	SP
7.	Kamble Eknath Narayan	Application of Laccase Enzyme In Textile	US
8.	Gorde Shruti Satish	Studies In Jute Processing	MDT
9.	Jadhav Akshay Chandrakant	Chemical processing of non-conventional fibre	MDT
10.	Kamble Maruti Bhimrao	Application of natural dyes on textile fabric	MDT

DOCTORAL / POST-DOCTORAL RESEARCH PROJECTS

PH. D (TECH) TEXTILE PROJECTS

Sr.	Research Scholar	Project	Supervisor
1.	Chetram Meena	Ecofriendly colouration of textiles	RVA
2.	Prashant Gangawane	Advance applications in Textile processing.	US
3.	Vinay G. Nadiger	Studies on Nano-composite Polypropylene Fibres for UV Protective Sports Textile Application	SRS
4.	K. H. Prabhu	Herbal Colourants For Eco-Friendly Textile Processing	MDT
5.	R.D.Kale	Studies in Structure Property Relationship of Synthetic Fibres...	MDT
6.	Javed sheikh	Performance enhancement by polymer modification	MDT
7.	Roshan Saha	Studies in Textile Composites	MDT
8.	Armity Shukla	Studies in Textiles for Wellness	MDT
9.	Vaidya Soocheta Anagha	Studies in Vacua Plant and its application in Textiles	MDT

PH.D. (TECH) (INTEGRATED)

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Neha Khurana	ICT	Studies in Technical Textile	RVA
2	Priti Tayade	ICT	Extraction, Standardization and application of Natural Dyes	RVA

PH.D. (SCIENCE)

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1.	Madhura Nerurkar	RUIA College, Mumbai	Screening of Marine Microorganisms for the Production of Textile Enzymes	RVA
2.	Manasi Joshi	RUIA College, Mumbai	Production and Application of Marine Pectinase In Textile Processing	RVA
3.	Borse Bhushan N.	P. V. P. College, Pune	Production of lipase from microorganism and their application in polyester hydrolysis and in organic reaction	SRS
4.	Parab Yogesh S.	Sommaiya college, Mumbai	Chemical recycling of polymeric waste materials	SRS
5.	Shukla Pushkar M.	R.Y.K. College Nashik	Studies on biosorption of metals cations using cheap adsorbents.	SRS
6.	Shah Rikhil V.	Sommaiya college, Mumbai	Synthetic reactions and applications of chemically recycled products from polyester waste	SRS
7.	Borude Vasant S.		Application of ionic liquid in organic synthesis and polymer degradation	SRS
8.	Kapadi Parag U.		Polymers from renewable resources	SRS
9.	Gondhelekar Sachin C.		Removal of heavy metals from waste water using bioasorbents	SRS

10.	Singh Saurabhkumar	Khalsa college	Adsorptive separation of strategic and heavy metal ions and process characterization.	SRS
11.	Patil Namata	SNDT	Studies on colour removal from waste water	
12.	Musale Rakesh M	SSVPS college, Dhule	Studies in depolymerization of waste poly(ethylene terephthalate) and utilization of the products obtained therefrom	SRS
13.	Nilesh Waghmanre	Shri Shivaji Science College of Akola	Synthesis / Modification of polymers for enhanced absorbency	MDT

PH. D. (TECH)

Sr.	Name	Topic	Guide
1.	R D Kale	Studies In Structure-Property Relationship For Improved Performance Of Synthetic Fibres	MDT

PH.D. (SCIENCE)

Sr.	Name	Topic	Guide
1.	Yogesh Parab	Chemical recycling of polymeric waste materials	SRS
2.	Pushkar Shukla	Studies on biosorption of metals cations using cheap adsorbents.	SRS
3.	Nilesh Waghmare	Synthesis / Modification of polymers for enhanced absorbency	MDT

M. TECH.

Sr.	Name	Topic	Guide
1.	Nirmal Kumar Gupta	Eco-friendly Processing Of Textiles	RVA
2.	Satish Dasarwar	Application of Nano-Technology in Textile	RVA
3.	Navodit Kadam	Studies in finishing	MDT
4.	Nitin sharma	Studies in colouration of textiles	MDT
5.	Pumpa Pal	Value addition in finishing	MDT

M. TECH.

NIRMAL KUMAR GUPTA

GUIDE: PROFESSOR R. V. ADIVAREKAR

Application of nanotechnology for functional finishing of textile

Nanotechnology is an emerging interdisciplinary area that is expected to have wide ranging implications in all fields of science and technology such as material science, mechanics, electronics, optics, medicine, energy and aerospace, plastics and textiles.

Impact of nanotechnology on textiles indicates a clear shift to nanomaterials as a new tool to improve properties and gain multi functionalities. Organized nano structures as exhibited by either fibres , nanocoatings, nanofinishing, nanofibers and nanocomposites seem to have immense potential to revolutionize the textile industry with new functionality such as self cleaning surfaces, conducting textiles, antimicrobial properties, controlled hydrophilicity or hydrophobicity, protection against fire, UV radiation etc. without affecting the bulk properties of fibers and fabrics.

Part –I : Synthesis and application of nano Copper Oxide as an antimicrobial finish for Improved Performance.

Parallel to immediate improvement of human living, control of harmful effects of microorganism is necessary. Textile can provide a suitable substrate to grow microorganism especially at appropriate humidity & temperature in contact to human body. Recently increasing public concern about hygiene has been driving many investigations for antibacterial finishing of textiles. Nanotechnology is rapidly growing science of producing and utilizing nano-sized particles that measured in nanometers. The bactericidal effectiveness of metal nanoparticles has been investigated, which can be attributed to both their size and high surface-to-volume ratio. Such characteristics allow them to interact closely with bacterial membrane.

In present study we have synthesized the nano copper oxide. Stable and uniform Copper oxide has been obtained. Their antibacterial properties had been tested. Attempts have been made to improve the durability of applied nano particles.

Part – II : Synthesis of Nanosized copper as colloidal solution and its application to textile materials.

The bactericide properties of copper has widely reported. One of the advantage of using nano copper is that it can as bactericide, antiviral, algicide and fungicide. In this part we have synthesized nano sized colloidal copper solution prepared by chemical reduction of copper salt using sodium borohydride as reducing agent in presence of tri-sodium citrate. The particle size and particle size distribution were examined by particle size analyzer. Synthesized nano colloidal solution has been applied on cotton fabric. They show good improvement in elongation, tensile strength, fastness properties, dye uptake and antibacterial properties. The application of synthesised nano copper and evaluation of finish applied is underway. The morphology of synthesized particles by SEM and TEM is also being analysed.

SATISH DASARWAR

GUIDE: PROFESSOR R. V. ADIVAREKAR

Studies in speciality finishes

Formulation of Eco Friendly Flame Retardant based on sodium stannate and its application on textiles.

Amongst all the fire hazards known to man, the burning of the textile fabrics has a greater contribution, mainly because of its widespread use in daily life. This leads to considerable loss of life and property. Hence, the need of flame retardant textile is being felt. The majority of fire accidents are associated with burning of textiles. Flame retardant (FR) fabrics are those that ignite with difficulty, burn slowly when set on fire, and go out or self-extinguish when the source of flame is removed. Because of this, flame retardant fabrics allow more time to remove clothes or put out the fire. This little margin of safety can make a big difference in the degree and extent of burn injury.

Every year around the world, thousands of deaths and injuries occur from the ignition and burning of textile-related materials and products. These items include upholstered furniture, mattresses and bedding, draperies, curtains, floor coverings, wall coverings, and clothing. All are implicated in the loss of life and life-changing injuries that can result from these textile-related fires.

Pyrovatex which has been used as durable FR over the years also has some demerits like loss in tensile strength and release of formaldehyde. Due to demerits of previously used commercial flame retardants like THPC, THPOH and Pyrovatex there is need of eco friendly FR. Sodium stannate is found to be an eco friendly FR for cotton [3] and hence present work is carried out on this basis.

The present work is aimed at synthesizing and/or formulating an eco friendly FR for home furnishing textiles like curtains and drapes. An eco friendly FR has been formulated by using sodium stannate as main FR compound. Since nitrogen and phosphorous work in synergism urea and di-ammonium phosphate are also used to enhance the flame retardant performance. The optimisation of sodium stannate on cotton with varying concentration was studied starting with minimum concentration of 5% which showed increase in LOI upto 25% but char length was >30 cm. When higher concentrations 10%,15% and 20% of FR were used it was found that there was significant increase in LOI upto 30, 31 and 33% respectively. Also the char length of FR treated cotton was reduced to 3.5cm. The concentration of sodium stannate that can be used was optimised between 10-15%. But the durability of this FR finish to washing was found to be inadequate and hence a binder was used to enhance the durability of finish on cotton which subsequently showed good durability upto six laundering washes.

The physical property, strength of the FR treated cotton which is a major concern, is studied and it was seen that initially with 5 & 10% of FR, tensile strength was found to be increasing and further with 15 & 20% of FR there was very slight decrease in strength and it retained upto 95-98% of tensile strength which is a promising outcome.

Further study in this regard like optimisation of various binders and other process parameters is in progress.

Synthesis of Phosphorous based Eco-friendly FR for Polypropylene (PP).

Introduction of phosphorus into polyester has successfully produced a flame retardant (FR) polyester fiber, whereas use of halogenated copolymers with an antimony oxide yields flame retardant modacrylic fibers. However, development of an economical flame retardant polypropylene (PP) fiber has lagged behind and today remains a challenge for the industry.

Currently there are two systems that effectively used for flame retardant polymers - halogenated and non-halogenated. Many manufacturers would prefer non-halogenated systems such as magnesium hydroxide,

aluminum trihydrate, ammonium phosphate, etc., principally because halogenated systems have received negative publicity, particularly in Europe due to toxicity of brominated FRs and their release of harmful gases in the environment. Non-halogenated systems, however, usually require loadings of up to 60% of the flame retardant additive and the physical as well as the aesthetic properties of the polymers are adversely affected.

With the increasing concerns over the toxicological and environmental consequences of using

such chemical species on textile substrates which have high specific surface areas, and close contact with the skin, have created a barrier to the development, and applications of new chemistry.

The present work deals with simple approach of synthesising an eco friendly phosphorous based FR for polypropylene. In this work, eco friendly FR has been synthesised by using phosphorous oxychloride as main flame retarding agent. PP chips are melt blended with FR compound with varying concentration and then extruded as strands which are then spun into filaments. Filaments have been converted into sheets for the testing purpose. The flammability performance of the flame retardant PP sheets is evaluated for LOI values. Concentration of FR chemical used for compounding was varied from 5 to 15% and it showed considerable increase in LOI values of PP from 17 % for virgin PP to 20 and 23 % for 5 & 10% FR chemical respectively. Further studies on higher concentration of FR in compounding is being carried out.

PH.D. SCIENCE

PUSHKAR SHUKLA

GUIDE: PROFESSOR S. R. SHUKLA

Studies on Biosorption of metal cations using low-cost Adsorbents

"Heavy metals are continuously released in to the aquatic environment in natural and artificial way. Increasing industrial activities have resulted in the release of unprecedented amounts of heavy metals in water. Soluble salts of heavy metal ions are easily assimilated in living system. When present in high concentrations they are carcinogenic and toxic which hamper the normal functioning of many vital body organs.

Biosorption is an emerging technology which addresses the problems of effluent treatment with effective utilization of the agricultural waste, providing a cheaper alternative to conventional methods. Coir, a natural fibre, has an ability to adsorb heavy metals and is also available abundantly and at a low cost.

1. Chemical modifications of Coir Fibres: To induce morphological and chemical changes coir fibres were treated with chemicals like H2O2/NaOH, Na2CO3, NaOH, HCl, and Citric acid to enhance the removal capacity.
2. Batch Scale Studies: Batch scale adsorption studies to test the effect of the alkali treatment on coir was tested for Cu(II), Pb(II), Ni(II), Fe(II) and Cr(III) in their single metal solutions. Parameters like initial pH, contact time, solid to liquid ratio were optimized. Studies were carried out at different initial concentrations and the obtained data was analysed using various isotherms models. Time studies were carried out to elucidate the rate of adsorption. Reusability of biosorbent was tested for upto 3 cycles.
3. Biosorption in Multi-metal systems: Batch scale studies were carried out to check the efficacy of alkali treated coir (ATC) in preferential adsorption, and to judge the competing effect amongst the metal ions. Three different experimental methodologies; i) equal initial conc. ii) varying initial conc. and (iii) ratio-based variation of initial conc. were employed in the study.
4. Column Study: Techno-economic feasibility of ATC as a biosorbent was tested for different metal ions in their single metal solutions. Critical parameters like flow-rate and initial concentrations were studied. Repeated sorption-desorption of column was carried out to check the re-use efficiency."

YOGESH PARAB

GUIDE: PROFESSOR S. R. SHUKLA

Chemical recycling of polymeric waste materials

"Poly (ethylene terephthalate) (PET) possesses excellent physical and chemical properties coupled with excellent durability and comparatively cheap manufacturing and processing technology. However, the poor biodegradability of PET has led to severe waste disposal problems. Chemical depolymerization is a possible remedy to huge amount of solid waste generation as it results in degradation products that possess a potential of recyclability.

Aminolytic depolymerization of PET bottle waste using hydrazine monohydrate, ethanolamine and diethanolamine in the presence of simple (sodium acetate, sodium sulphate, nickel chloride and magnesium chloride) and heterogeneous solid inorganic acid (zeolites and montmorillonite- ksf) as transesterification catalysts, by conventional and microwave irradiation heating methods, has been attempted, to obtain pure monomers. The reaction conditions were optimized with respect to time, the catalyst concentration and the PET: amine ratio, to get maximum yield of the products, which were subjected to characterization with FTIR, DSC, NMR.

Various utility organic compounds (PBO as chain extender/cross linker, 1, 3, 4- oxadiazole derivatives as antibacterial moiety, DP- BHETA and DB- BHETA as plasticizers) have been synthesized from these monomers obtained. The synthesized compounds also were characterized and confirmed. They have been checked for respective applications followed by performance evaluation."

Aminolysis and scale up

1. Aminolytic depolymerization of PET bottle waste by conventional and microwave irradiation heating under atmospheric conditions
2. Heterogeneous catalyzed, depolymerization of PET bottle waste using ethanolamine
3. Novel synthesis of N1, N1, N4, N4- tetrakis (2- hydroxyethyl) terephthalamide (THETA) and terephthalic acid via depolymerization of PET waste
4. Scale up: PET waste depolymerization scale up (about 100 g PET flakes) by hydrazine monohydrate.

Synthesis, characterization and applications of chemical utility compounds obtained from monomers through PET aminolysis

1. Synthesis, characterization and application of 1, 4- phenylene bis oxazoline (PBO) from BHETA as chain extenders/ cross linker in polymer synthesis (In polyacrylate synthesis)

   Route 1: PBO synthesis from BClETA, BBrETA and BNO2ETA (intermediates)

   Route 2: One step PBO synthesis from BHETA using polyphosphoric acid
2. Microwave synthesis and antibacterial activity of 1, 4-Bis (5-aryl-1, 3, 4-oxadiazole-2-yl) benzene Derivatives from terephthalic dihydrazide
3. Synthesis, characterization and applications of diacid esters (DP- BHETA and DB- BHETA) as plasticizers from BHETA

NAVODIT KADAM
GUIDE: USHA SAYED

Studies in Finishing

The term finishing, in a broad sense, covers all the processes which the fabric undergoes after leaving the loom or the knitting machine to the stage at which it enters the market. The term finishing includes all the chemical and mechanical processes used commercially to improve the quality of textiles and to make them more appealing to the consumer. Thus the term also includes bleaching, dyeing, mercerizing etc., but normally the term is restricted to the final stage in the sequence of the treatment of woven fabrics after bleaching and dyeing.

Part 1 - ENZYMES AND ITS APPLICATION

Section 1 – "Biomimicking of Enzymes and one bath bleaching and finishing"

Enzymes have increasingly gained importance as biocatalysts in textile wet processing. They are bulky protein compounds with only a small portion of their structure being their highly specific "active site" where the catalytic reaction occurs. Enzymes are widely used for preparation and finishing dyeing and printing of various substrates, yet to be commercialized. The key point in this project is whether enzymes could be replaced with simpler compounds that mimic the behavior of these biocatalysts.

Section 2 –"Laccase Enzyme and Its Application"

The use of enzymes in the diverse fields of industrial application has been of greater importance in recent years. Many of such potential enzymes are widely distributed in nature; laccases are one among them, which are oldest and most studied enzymatic systems. Laccases (benzenediol: oxygen oxidoreductases, E.C 1.10.3.2) are multi-copper enzymes belonging to the group of blue oxidases. The applications are in bleaching, dyeing, printing and finishing like antimicrobial finish on all natural substrate and its blends. In The present project number of applications of laccase enzyme on cotton has been successfully applied such as

Discharge printing on cotton with reactive dyes

Resist printing on cotton with Azo dyes

As a coating having antimicrobial property

Anti Shrink treatment of wool

Enhance dye uptake on protein fibers have shown encouraging results.

Part 2 -SYNTHESIS OF SURFACTANTS AND ITS APPLICATIONS

Surfactants are one of the most ubiquitous and important families of organic compounds. In fact we are living because special kinds of surfactants are present in all our cell membranes. Surfactants are among the most versatile products of the chemical industry,and its applications are vast like waste water treatment. On perceiving the considerable interest generated in the synthesis of Gemini surfactant the present study was undertaken to synthesize Gemini surfactant. Fully motivated approach was under taken to synthesize a 12-2-12 2Br Gemini Surfactant having multiple properties and thus necessitating it's applicability on various textile substrate.

Various applications of the above synthesized product was carried out on various textile substrates both natural and synthesized fibers as given below.

At first the probability of the surfactant as a finishing agent was studied. Being cationic in nature it was used as a softener on cotton, wool, silk and polyester. The performance properties of the product were carried out both on undyed and dyed fabrics dyed with various classes of disperse dye.

The second feasibility of application was as an auxiliary in dyeing of polyester.

Similar studies were also carried out to evaluate its antimicrobial property.

PH.D. TECH

R D KALE
GUIDE: PROFESSOR M. D. TELI

Studies In Structure-Property Relationship For Improved Performance Of Synthetic Fibres

Synthetic fibres possess properties such as lightweight, softness, resistant to most commonly used chemicals, high durability, ability to dry quickly etc. However, there are certain limitations that are associated with synthetic fibres such as poor moisture absorption, high pilling propensity, high static charge development, high soil retention tendency etc. Also dyeing of unmodified synthetic fibres is found to be very difficult. Nanotechnology is an emerging interdisciplinary technology that has been booming in many areas including textiles and is most promising avenues for technology development.

Polyester (PET) nanocomposite fibers were spun by adding master batches of Linear Low Density Polyethylene (LLDPE) loaded with Montmorillonite (MMT) nanoclay after compatibilizing the PET and LLDPE. The spun fibers were evaluated for thermal stability as well as flame retardancy with respect to the amount of nanoclay loaded into the fiber. Effects on mechanical properties were also tested. The effect of nano clay on thermal behavior like Tg, Tc and Tm was also studied. The dyeability of the fibers and fastness properties were also evaluated.

PET nanocomposite fibers were made by adding master batches of LLDPE loaded with Triphenyl Phosphate. The spun fibers were evaluated for flame retardancy using LOI values. The presence of TPP had little effect on mechanical properties.

PET nanocomposite fibers were spun by adding master batches of LLDPE loaded with organophilic nanoclay. The spun fibers were evaluated for the effect on hydrophobicity using Zeta potential of the fibers. Effects on thermal and mechanical properties were also studied. An attempt was also made to examine the response of acid dyes to the N content of the spun fiber.

Antibacterial nanocomposite PET fibres were melt spun by adding nano ZnO LLDPE master batch to the PET chips. The influence of content of nano ZnO on the antibacterial properties, crystallization behaviour and mechanical properties was studied. The effect of presence of nano particles on thermal and mechanical properties was also studied. Encouraging results were obtained for the antimicrobial property with a acceptable loss in tensile strength.

PET and Poly (trirmethylene terephthalate) (PTT) chips were melt blended in the ratio of 90/10, 80/20 and 70/30 and melt spun to make filaments. The compatibility of the fiber blends was investigated by Differential Scanning Calorimetry (DSC) study. The melt blended fibers were dyed with high energy disperse dyes at lower temperature than the regular 1300C. An attempt was made to correlate the change in fiber structure with lower dyeing temperature due to the presence of PTT in the fiber. The wash and light fastness of the dyed melt blend samples was also tested.

NILESH WAGHMARE
GUIDE: PROFESSOR M. D. TELI

Synthesis/modification of polymers for enhanced absorbency

Superabsorbent polymer (SAP) is a new kind of functional macromolecule developed in the past 30 years. Different kinds of SAPs are commercially prepared and used in a variety of fields such as disposable diapers, soil for agriculture and horticulture, water-block tapes, and absorbent pads. As the interest in the field is growing, newer methods are being attempted to improve the absorption properties in order to widen the application fields of superabsorbents. Additionally these processes are also expected to be eco-friendly.

Large quantities of starches are chemically modified to obtain desired properties for different applications. In recent years, interest in natural based superabsorbents hydrogel has increased mainly due to high hydrophilicity, biocompatibility, non-toxicity and biodegradability of biopolymers. These materials are defined as cross linked macromolecular network that can absorb water or fluids up to many times.

The present work is based on synthesis of polymers for enhanced absorbency by using natural polymers and utilisation of their waste. In present work we have synthesised several superabsorbent polymers and superabsorbent containing nano particles, and their applications.

The work done includes: Synthesis of superabsorbents from Carbohydrate waste, Amaranthus starch, Pullulan polymer and Cassia Gum. We have also used mixed polymer system (Guar Gum and Starch) for synthesis of superabsorbent containing silver nanoparticles and their application potential in Textile and allied field is studied.

NITIN SHARMA
GUIDE: PROFESSOR M. D. TELI

Studies in colouration of textiles

The importance of use of liquid dyes in application of textile processing is going to be increasing day by day as the requirements of right first time approach become inevitable. Short delivery time, reproducibility and cost competitiveness are all connected to dyeing or coloration of textile material as per the required shade without any variations. The dye in liquid form enables one to accurately make measurements and also to use such dyes for auto dispensing systems. It also avoids use of ecologically objectionable powder dyes which are potentially hazardous.

In the present work two classes of dyes – namely disperse and reactive have been studied. The pure cake form was washed and dried to remove water and residual electrolyte. These dyes were milled to reduce the particle size and subsequently, proper dissolution or dispersion of the dyes was carried out. These stock solutions/dispersions were compared with normal powder forms in terms of storage stability and dyeability on cotton and polyester.

In the second part, since the polycarboxylic acids have been the most promising non formaldehyde durable press finishing agent for cotton to replace traditional N-methylol reagents, the dye fibre interaction has been studied of the polycarboxylic acid modified cellulosic fibres.

The electrokinetic behavior is studied in terms of zeta potential at varied pH. Also, zeta potential was determined for streaming solution containing acid and cationic dyes and the relation between the electrokinetic properties is established with the kind of modification of the fibres and the dyeability of the modified finished fabrics. Also, dyeing of the modified cotton was carried out with various dyes and results are correlated with the results of the electrokinetic studies.

PAMPA PAL
GUIDE: PROFESSOR M D TELI

Value Addition in Finishing

Functional textiles are being developed in order to provide fabrics with new properties and added value. These can be obtained either by using new chemical fibres or by incorporating functional agents to conventional fabrics. Microencapsulation is an effective method to protect these functional agents from reaction with moisture, light and Oxygen. If a fabric is treated with microencapsulated functional agents, higher durability of functionality is expected.

Pure fragrance compounds and essential oils have been used traditionally as medicine for a long time. They are in discussion now a days because of their viable pharmaceutical effects and trend to go back to natural drugs and therapies in medicine. Fragrance and essential oil have specific effect on feelings and emotions such as relaxation, exhilaration, sensuality, happiness and well being through odour via stimulation of brain. Essential oils also have antibacterial, insect repellent, and mosquito repellent properties. The fragrance compound and the essential oil are volatile substances. Making these textiles to have a prolonged life is difficult. Micro-encapsulation is an effective technique to solve this .The storage life of a volatile compound can be increased markedly by micro-encapsulation technique.

The present investigation deals with microencapsulation of essential oil with three different flash points using spray drying process. Analysis of prepared microcapsule was done. The prepared microcapsules were applied on cotton fabric by pad-dry-cure method using binder and crosslinking agent. Treated fabrics were tested for the presence of fragrance, antimicrobial activity against S.aureus and E.coli and mosquito repellency efficiency. Physical parameters of fabric like bending length, tensile strength, whiteness index were also tested.

Sr.	Name of the Awards/Scholarships/Nomination	Name of the Student	Year
1.	Asha Khemani Memorial Scholarship	Rachna Harne	Second Y M Tech
2.	Asha Khemani Best Student Award	Avinash K	Second Y M Tech
3.	Asha Khemani Memorial Scholarship	Mrunmayee Kale	Final Y B Tech
4.	Asha Khemani Best Student Award	Rahul Gupta	Final Y B Tech
5.	Dr. M. V. Nimkar – Texanlab Foundation Scholarship award	Shaswat Gupta	Second Y B Tech- 1st Ranker
6.		Anagha Hunoor	Second Y B Tech- 2nd Ranker
7.		Radhika Vyawahare	Third Y B Tech- 1st Ranker
8.		Siddesh Pradhan	Third Y B Tech- 2nd Ranker
9.		Rahul Gupta	Final Y B Tech- 1st Ranker
10.		Sameedha Mayee	Final Y B Tech- 2nd Ranker
11.		Avinash K	Second Y M Tech
12.	Lt.Sri K.N.S. Nayar scholarship from RESIL CHEMICALS, Bangalore	Mrunmayee Kale	Final Y B.Tech.
13.	Lt.Sri K.N.S. Nayar scholarship from RESIL CHEMICALS, Bangalore	Ranveer Dhammapal	Final Y B.Tech.
14.	Lt.Sri K.N.S. Nayar scholarship from RESIL CHEMICALS, Bangalore	Dinesh Marewad	Final Y B.Tech.
15.	Lt.Sri K.N.S. Nayar scholarship from RESIL CHEMICALS, Bangalore	Eknath Kamble	Second Year M.Sc. (Textile Chemistry)
16.	Lt.Sri K.N.S. Nayar scholarship from RESIL CHEMICALS, Bangalore	Nivedita Thakur	Second Year M.Sc. (Textile Chemistry)
17.	Dr. M. V. Nimkar – Texanlab Foundation award worth Rs. One thousand for publishing quality research papers with each	Mr. Javed Sheikh	3 Awards
18.		Mrs. Madura Nerurkar	2 awards
19.		Mr Chetram Meena	1 award
20.		Mr. Yogesh Parab	1 award
21.		Mr. Rikhil Shah	1 award
22.		Mr. Bhushan Borse	1 award
23.		Ms. Khushbu Shah	1 award

Major Accomplishments of Faculty Members

PROFESSOR R.V. ADIVAREKAR

- Governor nominee to Academic Council of the North Maharashtra University, Jalgaon.
- Editor of Journal of Textile Association
- Indian Correspondent to "International Dyer"
- Member, research advisory committee of WRA, Thane

PROFESSOR S.R. SHUKLA

- Fellow of Maharashtra Academy of Sciences
- Shiksha Ratan Award has been announced and will be getting it on 26th May 2011

PROFESSOR M. D. TELI

- Fellow of Maharashtra Academy of Science
- Fellow of Textile Association of India (Honorary)
- ShikshaRatan Award
- Member of Board of Directors, Siyaram Silk Mills Ltd
- Served as Member, Board of Director,Supertex-Sarex Pvt. Ltd.
- Recipient of Honorary Fellowship and Service Memento of Textile Association, India
- Member of Jury for selection of textile machinery export promotion award by ITAMMA (2010)
- Invited to give lecture on Nanotechnology in Technion university, Israel(Dec 2010)
- Organizing committee member for world textile conference of Textile association India (May 2011)
- Chairman, editorial Board of J.T.A.
- Dean, student affairs and HRD, ICT
- Chairman, Mission reach project of TIFAC (DST) at DKTE's Textile Institute, Ichalkaranji
- Chairman Mission reach project of TIFAC (DST) at Kumarguru college, Coimbatore
- Member, research advisory committee of ATIRA, Ahmadabad

Placements

Degree	Total Batch Size	Further Studies	Placement through Campus	Salary Range (Rs. In Lakhs)
B. Tech (2011-12)	37	11	16	1.2-3.0
M. Tech.	10	5	5	3.0-5.25
M.Sc. (2011-12)	10	2	6	8.84-2.4

In-Plant Training

THIRD YEAR B.TECH. (2011-12)

Sr.	Name	Name of Industry
1.	Ankita Rajmohan	Evonik Degussa India Pvt. Ltd., Andheri.
2.	Ankita Sawarkar	Dystar India Private Limited, Rabale.
3.	Archana Bansode	Dystar India Private Limited, Rabale.
4.	Bhagyashree Dahifale	Clariant Chemicals India Limited, Thane.
5.	Jay Shah	Gaurav Dyeing and Printing mills Pvt., Ltd., Turbhe
6.	Khushbu Shah	Ridham Synthetics Pvt. Ltd., Mahalaxmi (West)
7.	Namrata Patil	Texanlab Laboratories Pvt. Ltd., Rabale.
8.	Namrata Phulaware	Clariant Chemicals India Limited, Thane.
9.	Pritam Jundare	Ridham Synthetics Pvt. Ltd., Mahalaxmi (West)
10.	Pushkar Yeola	National Aeronautics Ltd., Bangalore
11.	Rachit Shah	Alok Industries Ltd. Vapi
12.	Radhika Vyawahare	BASF India Ltd. Turbhe
13.	Ramakant Yelmatte	Colorband Dyestuff Pvt. Ltd. Rabale.
14.	Sagar Charpe	Dystar India Private Limited, Rabale
15.	Saurabh Amrutkar	Alok Industries Ltd. Vapi
16.	Siddhesh Pradhan	Alok Industries Ltd. Vapi

17.	Vaibhavi Vaidya	Hindustan Unilever Ltd.
18.	Yashlok Maurya	Alok Industries Ltd, Vapi
19.	Harit Kakkar	Grasim Bhiwani Textile Ltd., Bhiwani
20.	Shrinivas Gharote	Texanlab Laboratories Pvt. Ltd. Rabale
21.	Pranav Jain	Alok Industries Ltd. Vapi
22.	Pradyumna Sapkal	Indo Rama, Nagpur
23.	Sharmishtha Chattopadhyay	Huntsman International Ind. Pvt. Ltd. Andheri (E)
24.	Aditi Suresh	Huntsman International Ind. Pvt. Ltd. Andheri (E)
25.	Sumit Phalak	Ridham Synthetics Pvt. Ltd., Mahalaxmi (West)

M.SC. -TEXTILE CHEMISTRY (2011-12)

Sr.	Students Name	Company Name
1.	Badhe Pallavi Sharad	Dystar India Pvt. Ltd., Rabale
2.	Fegade Rajeshree Huna	Clariant Chemicals India Ltd., Thane
3.	Navghare Amar Avinash	Alok Industries Ltd., Vapi
4.	Patil Mahendra Sudhakar	Alok Industries Ltd., Vapi
5.	Sharma Ravikanth	Alok Industries Ltd., Vapi
6.	Thakur Nivedita	Clariant Chemicals India Ltd., Thane
7.	Kamble Eknath Narayan	Alok Industries Ltd., Vapi
8.	Gorde Shruti Satish	Dystar India Pvt. Ltd., Rabale
9.	Jadhav Akshay Chandrakant	Ridham Synthetics, Bombay Central, Mumbai
10.	Kamble Maruti Bhimrao	Alok Industries Ltd., Vapi

Professional Activities

PROFESSOR R. V. ADIVAREKAR

- Life Member of Textile Association (India)
- Life Member of Indian Fibre Society
- Governor nominee to Academic Council of the North Maharashtra University, Jalgaon.
- Editor of Journal of Textile Association
- Indian Correspondent to "International Dyer"
- Visiting faculty for Sophia Polytechnic
- Member of selection committee, College of home Science, Nirmala Niketan
- Member of technical/Research advisory committee of Wool Research Association
- Member of Board of studies and faculties of The Maharaja Sayajirao University of Baroda in Textile chemistry
- Member of General Advisory Committee for Research and Liason of BTRA for the period 2011-2014
- Member of 'Core Group' to function as a Sub-committee of the Council for COE in Sprotech at WRA

DR. R. D. KALE

- Member of Society of Dyers and Colorist
- Life Member of Indian Fibre Society
- Examiner for Nirmala Niketan college for B. Sc. (Home Science)
- Examiner for Veermata Jijabai Technological Institute, Mumbai

DR. SUJATA PARITI

- Member, Society of Dyers and Colourists (SDC), London, for Mumbai Region from 2001.

DR. U. SAYED

- Member of Alumni Association
- Best Ph.D.Tech Thesis Committee,
- Member of the Committee for Women's Welfare, Mumbai University.
- Member of board of studies Baroda university textile department.• Referee- for Nirmala Niketan college for M. Sc. (Home Science).
- Referee- for SNDT.
- Examiner for Nirmala Niketan college for M. Sc. (Home Science).
- Student Councilling,
- Member of AATCC.
- Trained and Lectured students of national institute of Fashion Technology [NIFT]

PROFESSOR S. R. SHUKLA

- Member, Editorial Board, Indian Journal of Fibres & Textile Research
- Life Member, Indian Fibre Society
- Member, Polymer Society, India
- Life Member, Textile Association (India)
- Life Member, Colour Group of India
- Life Member, Marathi Vigyan Parishad
- Patron Member, Association of Chemical Technologists, India

PROFESSOR M. D. TELI

- Convener, India-ITME 2012, International Symposiums
- Convener, International Conference Texsummit 2012, organized by Dept. of Fibres and Textile Processing, I.C.T.
- Chairman, Research Monitoring Committee of Mission Reach Programme of TIFAC –DST for Technical Textiles at DKTE Textile Institute, Ichalkaranji
- Member, Research Advisory Committee of ATIRA at Ahmedabad
- Chairman, Jury of selection of "Best Company in Export Performance of Textile Machinery and Parts".
- Served as Chairman, Research Monitoring Committee of Mission Research Programme of Kumarguru College Coimbatore.
- Served as Member of Task Force on Seri biotechnology, DBT, New Delhi
- Member of Research Advisory Committee, CSTRI, Bangalore.
- Served as Member of Research Advisory Committee of BTRA
- Chairman, Editorial Board, Journal of the Textile Association
- Referee for Egyptian Journal of Chemistry, Cairo University, Egypt
- Referee of Journal of Carbohydrate and Polymers, U.K.
- Patron Member of Textile Association (India)
- Patron Member of Association of Chemical Technologists, India.
- Life Member of Colour Group of India.
- Member of Editorial Board, Rossera
- Member of Editorial Board, Colourage,

Special Awards

PROFESSOR S. R. SHUKLA

- Fellow of Maharashtra Academy of Sciences (FMAS)
- Shiksha Ratan Award

PROFESSOR M.D. TELI

- Academic Excellence Award by Textile Association in World Textile Conference, given at hands of Textile Secretary for meritorious contribution to the field of Textile Education, Research and Industry.
- Shiksha Ratan Award by IFSI-Delhi
- CSIR-CNRS(France) International Research Fellowship
- Awarded GDR Fellowship for the research in Germany
- Conferred Honorary Fellowship of Textile Association India
- Conferred Fellowship of Maharashtra Academy of Sciences
- Conferred Service Memento of Textile Association, India for distinguished service to Textile Industry.
- Member, Board of Management of I.C.T., Deemed University
- Member of Board of Directors, Siyaram Silk Mills
- Served as Member of Board of Directors of Supertex-Sarex Pvt. Ltd.
- Received more than about dozen awards and honours for being top rank holder in B.Sc. (Tech.) and M.Sc. (Tech.) Examinations

Endowment lectures/Invited lectures for the students & Alumni conducted by the Department

- Student Paper presentation competition Texquest 2012 at Institute of Chemical Technology, Mumbai on 22nd March 2012
- Cultural function of the Textile dept, Texpression 2012 at Institute of Chemical Technology, Mumbai on 22nd March 2012
- Dr. M.V. Nimkar Endowment Lecture delivered by Dr. M.L. Gulrajani, Emeritus Professor of Indian Institute of Technology, New Delhi at Institute of Chemical Technology, Mumbai on March 16, 2012 on the topic of "Enzymatic Functionalisation of Textiles for the production of smart and Intelligent textiles"
- Class of 1966 Visiting Fellowship Endowment Lecture delivered by Dr. S. Sreenivasan, Former Director, Central Institute for Research on Cotton Technology at Institute of Chemical Technology, Mumbai on April 20, 2012 on the topic of "Current Status of Indian cotton and its Potential and Prospects for Diversified Utilization"
- L.N.Chemical-ICT Diamond Jubilee Visiting Fellowship Endowment Lecture delivered by Dr. A.N. Desai, Director, BTRA at Institute of Chemical Technology, Mumbai on April 20, 2012 on the topic of "Disruptive Technologies in Text
- Lecture of Mr. A.K. Prasad, Clariant (Chemicals) India Ltd. at Institute of Chemical Technology, Mumbai on "Current Trends in Textiles" on 22nd March 2012

Other Relevant Information

PROFESSOR M. D. TELI

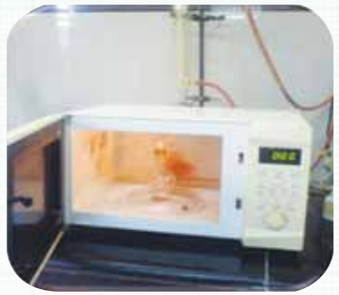
- Right from the beginning I assisted our HOD in bidding for COE in Sports Textiles. Almost 6-8 months our efforts were on ,and almost all major meetings were attended by me. We also tried to establish linkages/ partnership with Textile Committee, BTRA, Reliance, JCT, Kemrock, Kusumgar Associates , etc.
- In the final round, we submitted our bid independently for Centre of Excellence in Sports Textiles, worth Rs. 245 millions.
- I am extremely happy to say, with tremendous confidence and putting all the reputation earned in my Textile field all these years, I most fiercely put forward this proposal in front of Textile Secretary in Udyog Bhavan, with our HOD and I am happy that our Department of Fibres and Textile processing, first time since its inception qualified to be recipient of honour of being Centre of Excellence in Sports Textiles. This infact proved the credibility I have earned so far in the Textile Ministry and capability of our Department and my colleagues. Unfortunately, certain technicalities in operation of this project, BOM did not find it convenient to accept the same.

Instruments and Equipments

Autoclave

Atomic Absorption Spectrometer

Rota Evaporator



Modified Microwave Oven

From Left to Right : Girendra Pal Singh (M.Tech 1st year student), Sachin Patil (M.Tech 1st year student), Chetram Meena (Ph.D. student), Rachana Harane (M.Tech 2nd year student), Rachana Harane (M.Tech 2nd year student), Pallavi Madiwale (M.Tech 1st year student), Priti Tayade (Ph.D. student), Professor R.V. Adivarekar, Madhura Nerurkar (Ph.D. student), Manasi Joshi (Ph.D. student), Neha Khurana (Ph.D. student), Santosh Biranje (M.Tech 1st year student), Abhinav Nathani (M.Tech 1st year student), Avinash K. (M.Tech 2nd year student)

Research Group Photos

First Row (L-R): Prerana Kane, Umesh Kore, Aashish Banarji, Aurnab Agnihotri
Second Row (L-R): Professor R. D. Kale

First Row (L-R): Neha Parmar, Bharti Pahuja, Professor S. R. Shukla, Namata Patil, Shital Palaskar, Saurabh Singh.
Second Row (L-R): Parag Kapadi, Pankaj Mendhe, Sachin Gondhelekar, Pushkar Shukla, Rikhil Shah, Rakesh Musale, Vasant Borude, Munish Arora.

In the middle Dr. (Mrs.) Usha Sayed
Towards left 1) Kamini Sharma 2) Shilpa Wanjari 3) Praveen Kokate 4) Prashant Gangawane

First row(L-R): Aranya Ghosh, Abhilasha Rangi, Parag Bhavasar, Professor M.D.Teli, Raghav Mehra, Javed Sheikh, Pawan Desai, Sanket Walia, **Second Row (L-R):** Pravin Chavan, Navneet Singh Shekhavat

Photograph (laboratory)

Photograph (laboratory)

DEPARTMENT OF

FOOD ENGINEERING & TECHNOLOGY

First Row Left To Right

Mrs. S. S. Lele

B.Chem.Engg., M.Chem.Engg., Ph.D. (Tech.)

Fellow, Maharshtra Academy of Sciences Fellow, Biotech Research Society of India (BRSI)

Professor of Biochemical Engineering and Head

U. S. Annapure

B. Tech., M.Sc. (Tech)., Ph.D. (Tech).

Associate Professor

Second Row Left To Right

Ms. R. S. Singhal

B.Sc.(Hons.), M.Sc.(Tech.), Ph.D.(Tech.)

Fellow, Maharshtra Academy of Sciences

Fellow, Association of Food Scientists and Technologists (India)

Fellow of the Biotech Reasearch Society of India (BRSI)

Professor of Food Technology

Mrs. Laxmi Ananthanarayan

B.Sc. (Hons.),M.Sc. (Tech.), Ph.D.(Tech.)

Associate Professor, Coordinator M Tech (Food Biotechnology)

Mrs. Shalini Arya

B.Tech., M. Tech, Ph. D (Tech.)

Assistant Professor

Professor S. S. Lele
B.Chem. Engg., M.Chem.Engg., Ph.D. (Tech.)
Head of the Department

Year 2011-12 has been outstanding in terms of progress in research and development in the Food Engineering and Technology Department (FETD) as well as excellent campus placement encompassing national, international and multinational companies. The interdisciplinary masters program in food biotechnology has picked up very well. It is heartening to note that leading food companies selected these candidates with bachelor's degree in biotechnology at par with those having a degree in food technology. This endorses that the training imparted during this program, the syllabus and faculty are in line to satisfy the industry requirement in the emerging area of food biotechnology. In spite of just 5 full time faculty members in FETD (we have 3 vacant positions), our productivity has improved. It is a matter of pride for us to let you know that this year 7 fellows completed their doctoral degree, 22 completed masters and 19 students were awarded B.Tech degree. During the year, 32 international research papers were published and 2 patents were filed. Currently there are 52 PhD fellows and 40 M.Tech students working in the Department.

The FETD was established in then UDCT in 1943 offering Bachelor of Science (Tech) in chemistry of foods and drugs. Later in 1949, a full-fledged B.Sc Tech. degree course in food technology was started. In 1963, again for the first time in the country, masters program in fermentation technology was initiated and the department was christened 'Food and Fermentation Technology Department'. In the 21st century, after aligning all the graduate programs as 12+ 4 pattern, the department has focused on engineering as well. To suit the need of present times, the course in fermentation technology has been restructured as food biotechnology with special initiative on nutrigenomics.

Mission

"Establishing a center of excellence to provide demand driven, value-based and quality technical education to make India a developed country through socio-economic transformation."

Vision

- To improve food, especially Indian traditional foods, in terms of nutrition, safety and functionality employing fundamental and applied sciences.
- To produce trained personnel of highest standards for the benefit of the industry and society, in the field of food engineering & technology and food biotechnology.
- To provide leadership in areas of education, research, innovations and solutions in food and biotech sciences, technology and engineering to direct overall activity towards economic growth of India.

International collaborations in teaching as well as research have become an integrated part of the department. Dr. Mukund Karwe (Rutgers University, USA who is also our Adjunct Professor) and a few other foreign academicians visited during the year. Some of our Ph.D scholars are doing research at the University of Saskatchewan (Canada) and University of Aalto (Finland) under various research programs.

FETD also takes pride in playing leading role in co-curricular as well extension activities at ICT and also through professional body, Association of Food Scientists and Technologists (India) or AFST (I). Two of our faculty members are hostel wardens and 3 are office bearers of Mumbai chapter of AFST (I) including the president. To express gratitude towards the Alma mater and pay rich tributes to Professor D. V. Rege, our beloved Guru, AFST (I) jointly held an international conference in January 2011. A handsome donation of Rs. 10 lakh was received by ICT and a new endowment Professor D. V. Rege – AFST – 2011 was formed. New awards for students and faculty are instituted from the forthcoming year. This year, the FETD in collaboration with Mumbai chapter of AFST (I) organized various events like the World Food Day celebration, several lectures, seminars including a two day seminar on 'Innovation in Food Science and Technology to Fuel the Growth of the Indian Food Industry' at XXI Indian Convention of Food Scientists and technologists' (21st ICFOST), held at Pune on January 20–21, 2012.

We are thankful to UGC for the Center of Advanced Studies Status (CAS-I) and continued support by way of Ph.D fellowships under the SAP program. ICT has been active in instituting several merit-cum-means scholarship for the needy and meritorious undergraduate students. FETD has Dr. P.J. Dubash- AFST scholarship of Rs 25,000/- per year. In addition we are also thankful to Kamani Oil Industries who have generously sponsored one more scholarship on an annual basis since 2010.

Last but not the least, I thank all the donors, well wishers, alumni, UG-PG students and support staff for being with us all the time. We expect your continued support and long term association with us.

Thanks again.

Professor S. S. Lele
(Head of the Department)

PRESENT SCENARIO

The FETD comprises of the following human resources:

No. of Students:
Undergraduates- 73
Doctorates-52
Masters- 40

No. of Faculty (in place):
Professors- 2
Associate Professors- 2
Assistant Professor- 1

Vacancy: 3
Professor - 1
Associate Professor- 1
Assistant Professor- 1

Supporting Staff: 7

MAJOR RESEARCH INTERESTS

Thrust areas under CAS include –

Carbohydrate Chemistry & Technology

- Cereal science & technology
- Chemistry & technology of traditional foods
- Enzymology, enzyme applications, modification of enzymes
- Food product / process development; instant food premixes
- Food quality analysis
- Fruits and vegetable processing

FERMENTATION TECHNOLOGY & FOOD BIOTECHNOLOGY

- Fermented foods
- Fermentative production and downstream processing of enzymes / metabolites
- Nutraceuticals & natural pigments
- Nutrigenomics
- Plant tissue culture

MAJOR INSTRUMENTAL/ PROCESSING FACILITIES

Infrastructure

The FETD is well structured with equipments required for food processing that include extruders, retort processing unit, blast and fluidized freezer, pasta making machine, modified atmosphere packaging, dough sheeter, tray and IR dryer, fluidized bed dryer, fermentor, high pressure homogenizer, ultrasonic processor, RO and ultrafiltration unit, spray dryer, and twin screw extruder.

The FETD also houses many analytical instruments such as HPLC, HPTLC, GC, GCMS, spectrophotometers, Hunter lab colorimeter, image analyzer, Brookfield rheometer, texturimeter, Haake viscometer, electrophoresis unit, protein purification system, PCR thermal cyclers, RT-PCR, and differential scanning calorimeter (DSC).

ACHIEVEMENT IN LAST FIVE YEARS

Major Grants:
UGC, TEQIP, RGSTC, MOFPI, ICAR, DBT, DAE, AICTE.

Total amount:
Rs. 4.6 Crores approximately.

Research Publications:
International: 162
Patents: 10

Degrees Awarded:
Doctorates: 26
Masters: 106
Bachelors: 76

MAJOR AWARDS / HONOURS RECEIVED IN 2011-12

- Professor S. S. Lele was video interviewed by Marico Industries Ltd. on the occasion of their first Science day on June 14, 2012.
- Professor S. S. Lele is the elected President of AFST (I), Mumbai Chapter for the years 2011-12 and 2012-13.
- Professor S. S. Lele received award of excellence (in science) by Navi Mumbai Mahanagar Palika, on Women's Day, 2011.
- Professor S. S. Lele is nominated as a council Member of committee for the subject Food Technology formed for "Internatinal Union of Food Science and Technology (IUFoST) – Indian National Science Academy (INSA) " activities at International and national level.
- Professor R. S. Singhal was elected as the Fellow, Biotech Research Society of India (BRSI), 2011.
- Professor R. S. Singhal received the best feature article award for the paper entitled 'Drug nutraceutical interactions: a safety consideration' Published in Indian Food Industry, AFST (I) Conference held at Pune, January, 2012.
- Dr. Uday S. Annapure is the elected Vice President of AFST (I), Mumbai Chapter for 2011-12 and 2012-13.

YEARWISE STATISTICS OF RESEARCH AND ACADEMIC ACTIVITIES

Year	Ph.D.	Masters	Graduates	Research papers		Reviews	Books Chapters / Patents	Sponsored projects
				International	National			
2007-08	2	19	15	34	2	7	2 / 0	9
2008-09	3	19	13	31	--	4	1 / 0	11
2009-10	5	22	14	40	1	3	2 / 0	10
2010-11	9	25	15	25	--	1	3 / 8	7
2011-12*	7	21	19	32	--	5	0 / 2	4

*Upto 30th June

COURSES OFFERED IN FETD

S.N.	Degree	Comments	No. of seats
1	B.Tech. (Food Engineering & Technology)	AICTE Approval in 2002 and later in 2008 (12 + 4) Pattern.	16
2	M.Tech. (Food Engineering & Technology)	AICTE Approval in 2008.	5
3	M.Tech. (Food Biotechnology) (Restructured Fermentation Technology course)	AICTE Approval in 2008.	10
4	M.Tech. (Bioprocess Technology)	DBT Supported Interdisciplinary course with Chemical Engineering & Pharmaceuticals Department.	30*
5	M.Tech. (Perfumery & Flavors)	The Perfumery & Flavors Association of India (PAFAI) supported Interdisciplinary course with Chemical Engineering, Oils, Pharmaceuticals & Dyes Department.	5*
6	Ph.D. (Tech.) & Ph.D. (Sci.)	10 UGC-SAP fellowships from 2007. 15 UGC-SAP fellowships (Food 10 + 5 BPT) from 2009.	15

Mrs. S. S. Lele

B.Chem.Engg., M.Chem.Engg., Ph.D. (Tech.)

Fellow, Maharshtra Academy of Sciences Fellow, Biotech Research Society of India (BRSI)

Professor of Biochemical Engineering and Head

ss.lele@ictmumbai.edu.in, dr.smita.lele@gmail.com

Subjects Taught

Food engineering, Fermentation technology, Fundamentals of food process engineering, Advances in food engineering & technology, Biochemical engineering, Fundamentals of food science and technology.

Research interests

Food product/process development, Microalgal metabolites, Enzyme production from indigenous strains, Biological effluent treatments, Fruit and vegetable based dehydrated and nutritious Product development.

Research students

Ph.D. (completed) - 17
Masters (completed) - 52
Ph.D. (ongoing) - 13
Masters (ongoing) - 5

Research publications

International - 71
International (this year) - 10
National - 9
Conference Proceedings - 30
Book - 1

Patents

7 (applied)
2 (this year)

Sponsored projects

Government – 8 (completed)
ongoing - 3

Professional Activities

- Council Member, Indian National Science Academy (INSA-ICSU), 2012-15.
- Member of the organizing committee at The XXI Convention of Indian Food Scientists and Technologists held at Pune on 20-21 January, 2012.
- Expert committee member, Biotech Industrial Training Program, 2012-13.
- Expert Member, Alcoholic drinks-reg FSSAI, Delhi, 2011.
- Council Member of Biotech Research Society of India (BRSI), 2009-11, 2011 -13.
- Member, Research Recognition Committee for Biotechnology, University of Mumbai.
- Referee of several International Journals in Biotechnology and Food Engineering.
- Life member of a number of national and international professional bodies engaged in activities related to Science & Technology and Women Scientists, AFST, AMI, BRSI, IIChE, UAA.

Ms. R. S. Singhal

B.Sc.(Hons.), M.Sc.(Tech.), Ph.D.(Tech.)

Fellow, Maharshtra Academy of Sciences

Fellow, Association of Food Scientists and Technologists (India)

Fellow of the Biotech Reasearch Society of India (BRSI)

Professor of Food Technology

rs.singhal@ictmumbai.edu.in

Subjects taught

Food Chemistry, Food additives and ingredients, Current topics in food science and technology, Nutraceuticals and functional foods, Modern techniques in food analysis, Food safety and toxicology, Biotechnology of fermented foods.

Research interests

Food quality, Food chemistry, Biopolymers, Lipid chemistry and technology, Food product development, Food processing, Fermentative production and downstream processing of biomolecules, Traditional foods.

Research students

Ph.D. (completed) - 16
Masters (completed) - 69
Ph.D. (ongoing) - 20
Masters (ongoing) - 11

Research publications

International - 246
International (this year) - 21
National - 8
Conference Proceedings - 104
Book chapters- 29

Patents

1 granted
2 applied

Sponsored projects

Government – 2 (ongoing)
Government – 2 (completed)
Private – 2 (completed)

Professional Activities

- Editor, Journal of Food Science and Technology, Published by Springer.
- Editor, Bombay Technologist, Journal of the Technological Association, ICT, Mumbai.
- Member, Editorial Board, International Journal of Food Science and Nutrition.
- Member, Editorial Board, Plant Foods for Human Nutrition.
- Member, Selection committee for promotions, BARC, Mumbai.
- Member, Expert group in the area of secondary agriculture, Department of Biotechnology, Government. of India.
- Member, Board of Studies in Microbiology, University of Mumbai.
- Member, Selection committee, appointment of Assistant Professors and Associate Professors, Shivaji University, Kolhapur.
- Expert, UGC-DSA Programme, University of Mysore.
- Life Member, Association of Food Scientists and Technologists (India).
- Life Member, Association of Carbohydrate Chemists and Technologists, India.
- Member, Advisory Board, Trends in Carbohydrate Research, published by ACCT (I).
- Member, BIPP and BIRAP, Department of Biotechnology, Government of India
- Referee, International Journal of Food Science and Nutrition.
- Referee, Carbohydrate Polymers.
- Referee, Journal of Food Engineering.
- Referee, Food Chemistry.
- Referee, Drying Technology.
- Referee, Biosystems and Bioprocess Engineering.
- Referee, Food and Bioprocess Technology.
- Referee, Plant Foods for Human Nutrition.
- Referee, Indian Journal of Biotechnology.
- Referee, Journal of Food Science.
- Referee, International Journal of Food Science and Technology.
- Referee, Bioresource Technology.
- Referee, Process Biochemistry.
- Referee, LWT-Food Science and Technology.
- Referee, Food Research International.
- Referee, Journal of Agricultural and Food Chemistry.
- Examiner, Ph.D thesis at some universities in India

U. S. Annapure

B. Tech., M.Sc. (Tech)., Ph.D. (Tech).

Associate Professor

us.annapure@ictmumbai.edu.in

Subjects taught

Principles of food preservation and food engineering, Current topics in food science and technology, Food analysis & food processing Lab, Advances in food technology, Carbohydrate chemistry and technology, Biotechnology of fermented foods

Research interests

Extrusion processing – process and product development, Drying and dehydration of foods, Frying - chemistry and technology, Nutraceuticals – chemistry, technology and product development, Carbohydrates - chemistry and technology of minor grains and tubers, Traditional foods, Product

and technology development, Enzyme applications in food processing, Plant tissue culture, Downstream processing-enzymes, antioxidants, antibiotics and biomolecules

Research students

Ph.D. (completed) – 1
Masters (completed) – 34
Ph.D. (ongoing) – 12
Masters (ongoing) – 9

Research publications

International - 26
International (this year) - 6
National- 3
Conference Proceedings – 30

Sponsored projects

Government – 2 (ongoing)
Private – 1 (ongoing)
Government – 1 (completed)

Consultancy: (Rs. 1, 80,000/-)

- PepsiCo Holdings India Pvt. Ltd.
- Kamani Oil Industries Pvt. Ltd.
- Marico Ltd.
- Global Exim, Mumbai.

Professional Activities

- Life Member, Association of Carbohydrate Chemists and Technologists of India (ACCTI).
- Life Member, Biotech Research Society of India (BRSI).
- Life Member, Association of Food Scientists and Technologists, India [(AFST (I)].
- Member, International Society of Food Engineering (ISFE), USA.
- Vice-President, Association of Food Scientists and Technologists, India (AFSTI), Mumbai Chapter.
- Member, Board of Governors, UDCT Alumni Association.
- Member, Board of Studies, Biochemistry and Nutrition, Marathwada Agricultural University, Parbhani.
- Member, Ad-hoc Board in Food Science and Technology at Shivaji University, Kolhapur.
- Referee, Carbohydrate Polymers
- Referee, Journal of Agricultural & Food Chemistry
- Referee, Bioresource Technology
- Referee, Journal of Food Science
- Referee, International Food Research Journal
- Referee, Ultrasonics Sono-chemistry
- Member, BITP Selection Committee, Biotech Consortium India Limited.
- Member, Selection Committee for Lecturer in Food Technology at SNDT University, Mumbai.

Mrs. Laxmi Ananthanarayan

B.Sc. (Hons.),M.Sc. (Tech.), Ph.D.(Tech.)

Associate Professor, Coordinator M Tech (Food Biotechnology)

l.ananthanarayan@ictmumbai.edu.in

Subjects taught

Chemistry of food constituents, Nutrition, Technology of plantation products, Food packaging, Current topics in food science and technology, Biochemistry lab, Food preservation lab, Food tech lab, Food biotech lab, Advances in nutrition, Nutrigenomics, Biotechnology of fermented foods.

Research interests

Traditional foods, Fermented foods, Fruit and vegetable Processing, Millet based products, CAP / MAP technology, Extrusion technology, Protein purification, Enzymology, Nutraceuticals, Natural pigments, Microbial metabolites.

Research students

Ph.D. (ongoing) – 6
Masters (completed) – 52
Masters (ongoing) – 8

Research publications

International - 22
National - 1
Book Chapter- 1

Professional Activities

- Life Member, Association of Food Scientists and Technologists (India)..
- Life Member, UDCT Alumni Association.

Mrs. Shalini Arya

B.Tech., M. Tech, Ph. D (Tech.)

Assistant Professor

ss.arya@ictmumbai.edu.in

Subjects taught

Chemistry of food constituents, Food microbiology, Laboratory course in technical analysis–I

Research interests

Indian traditional foods, Chemistry and preservation of foods, product development and processing, Cereals and cereal products, Starch chemistry and technology, Preservation of foods, Newer technologies in preservation of traditional foods.

Research students

Ph.D. (ongoing) – 2
Masters (completed) – 6
Masters (ongoing) – 6

Research publications

International - 11
National- 02
Conference proceedings- 18

Professional Activities

- Tresurer, Association of Food Scientists and Technologists (I), Mumbai Chapter.
- Life Member, Biotechnology Research Society of India (BRSI), India.
- Life Member, Association of Carbohydrate Chemists and Technologists of India.
- Member, Society of Chemical Industry (SCI), London.
- Member, International Society of Food Engineering (ISFE), Pullman, USA.
- Member, CFT-PBN Alumni Association (CPAA), Mumbai.

Support Staff

Mrs. Sagarika Jadhav
Laboratory Technician

Mr. Datta Dingankar
Laboratory Assistant

Ms. Sangeeta Dhakne
Laboratory Assistant

Ms. Chitra Koli
Laboratory Assistant

Mr. Ganesh Bhagat
Laboratory Attendant

Mr. Santosh Rajam
Laboratory Attendant

Mrs. Pramila Pawar
Laboratory Attendant

B.TECH. (FOOD ENGG. & TECH.)

- Dr. Lambert Rodrigues, Ex-Reader, FETD., ICT, Matunga, Mumbai.
- Dr. Rashmi Motey Kolhe, 403, Gagangiri Avenue, Panchpakhadi, Thane.
- Dr. Hormaz Patwa, Technical Executive, Sensient India Pvt. Ltd., Powai, Mumbai.

M.TECH. (FOOD ENGG. & TECH.) AND (FOOD BIOTECHNOLOGY)

- Dr. Lambert Rodrigues, Ex-Reader, FETD, ICT, Matunga, Mumbai.
- Dr. J.R. Bandekar, Head, Food Microbiology Section, BARC, Mumbai.
- Dr. Subhada Nayak, 6A, Udaygiri, Anushaktinagar, Mumbai.
- Dr. Hema Purandarey, A-11, Elco Arcade, Hill road, Bandra, Mumbai.
- Dr. Sanjog Surve, E-17 Konark Indraprasth, Mulund, Mumbai.
- Mr. N. C. Saha, Director, IIP, Mumbai.
- Dr. Saptarshi Paul, 602, Orion Towers, E.V. Homes, Plot# 120, Sector 50, Seawoods, Nerul, Navi Mumbai.
- Dr. V. Venugopal, Flat No. B-602, Skyline Villa, Opp. IIT Main Gate, Powai, Mumbai.
- Mr. M. M. Chitale, Consultant, A/7, Shartiniketan CHS, Kopri Rd., Near Anand Cinema, Thane (W).
- Mr. Prabodh Halde, Head, Product Integrity, MARICO LTD., C-10 Dalia Industrial Estate, Off Link Road Andheri (W), Mumbai.
- Dr. Malathy Venkatesh, 2C-704,Great Eastern Links, Ram Mandir Road, Goregaon (W), Mumbai.

As a part of the curriculum, every student of final year B.Tech student and first year M.Tech student presents a specific technical topic and submits a written review in the form of a seminar. The faculty members of FETD actively participate in guiding the undergraduate (B. Tech.) and postgraduate (M. Tech.) students for their seminars, project reports and other curricular activities which are tabulated below:

(SSL: Professor S. S. Lele; RSS: Professor R. S. Singhal; USA: Dr. U. S. Annapure; LA: Dr. L. Ananthanarayan; SSA: Dr. S. S. Arya)

(* Indicates women student)

B. TECH. (FOOD ENGINEERING & TECHNOLOGY) SEMINARS

S.N.	Name of the Student	Title	Guide
1	Harshit Agarwal	Newer trends in extrusion processing	USA
2	Tanay Chandra	Electronic tongues and noses: promising analytical tools for the quality evaluation of foods	SSA
3	Youthika Chauhan*	Dairy products as functional food	SSL
4	Chinmaya Gawde	Recent developments in coffee and its consumption: benefits and risks	SSA
5	Bhagyashree Giri*	Bioavailability of nutrients	USA
6	Vinay Gurav	Recent developments in applications of enzymes in fruit and vegetable processing	SSL
7	Prashant Indalkar	Application of nanotechnology in food packaging	SSL
8	Neha Jayakar*	Polylactic acid: production and application	USA
9	Neeraj Kamath	Smart polymers in food packaging	LA
10	Mahesh Kharat	Spices as functional foods	SSA
11	Monali Patili*	Functional microorganisms for functional food quality	SSA
12	Rohit Phalak	Pseudo cereals: importance and utilization	USA
13	Anuj Purohit	Spherulites from biopolymers	RSS
14	Shruti Rathi*	Newer developments in infant nutrition and infant foods	LA
15	Ridhi Jagani*	Bioactive peptides: chemistry, sources, mechanism of action and nutritional implications	LA
16	Pratima Bawa*	Nutraceuticals for management of diabetes	RSS
17	Devashish Nikte	Biogenesis of natural flavor compounds in foods	LA
18	Pallavi Kulkarni*	Ribose: nutritional and nutraceutical significance	RSS
19	Pankaj Rathod	Metal- amino acid chelates as food ingredients	RSS

B. TECH. (FOOD ENGINEERING & TECHNOLOGY) PROJECTS

S.N.	Name of the Student	Title	Guide
1	Harshit Agarwal	Osmotic dehydration as a pretreatment for fried foods	RSS
2	Tanay Chandra	Gourd family vegetable juice	SSL
3	Youthika Chauhan*	Multigrain *khakra*	SSA
4	Chinmaya Gawde	*Khoa (mawa)* substitute	USA

5	Bhagyashree Giri*	Flaxseed preparations	SSA
6	Vinay Gurav	Gluten-free casings for traditional Indian fried products	RSS
7	Prashant Indalkar	Amla candy	USA
8	Neha Jayakar*	Croissant base	SSA
9	Neeraj Kamath	Eggless mayonnaise powder	USA
10	Mahesh Kharat	Preservation of lemon juice	RSS
11	Monali Patili*	Vegetable juice	LA
12	Rohit Phalak	Banana flour- preparation and applications	RSS
13	Anuj Purohit	Fruit and vegetable jelly and candies	SSL
14	Shruti Rathi*	Instant premixes for traditional beverages	LA
15	Ridhi Jagani*	Fruit shake premix	SSL
16	Pratima Bawa*	Healthy snack food	LA
17	Devashish Nikte	*Sevai* vermicelli preparations	SSA
18	Pallavi Kulkarni*	Instant premixes for traditional confections	LA
19	Pankaj Rathod	Watermelon processing and products	USA

M.TECH. (FOOD ENGINEERING & TECHNOLOGY) SEMINARS

S.N.	Name of the Student	Title	Guide
1	Kunal Rathi	Role of sodium and potassium in human health	SSL
2	Sumit Pandey	Wheat constituents and their role on wheat product quality	LA
3	Nirali Shah*	Bioavailability of nutraceuticals	RSS
4	Sheetal Chauhan*	Peanut products and their health benefits	SSA
5	Suheel Hamed	Effect of pulsed electric field on enzymes	USA

M.TECH. (FOOD BIOTECHNOLOGY) SEMINARS

S.N.	Name of the Student	Title	Guide
1	Apoorva Gupta*	Biotransformation of polyphenols	RSS
2	Nupur Nagavekar*	Nutraceuticals from fruits and vegetables	SSL
3	Pavitra K*	Folates: production and role in human health	SSA
4	Pandurang Marpalle	Sources, production and potential health benefits of omega-3 fatty acids	SSA
5	Parag Kolekar	Enzymatic debittering of fruits	RSS
6	Shaila Sonawale*	Rapid methods of microbiological assay	LA
7	Rati Gupta*	Effect of processing on plant based bioactive compounds	LA
8	Richa Arora*	*In vitro* meat production	USA
9	Ashu Verma	Edible vaccines	USA
10	Deepak Kadam	*Moringa oliefera*: A review of phytochemistry and bioavailability	SSL

M.TECH. (BIOPROCESS TECHNOLOGY) SEMINARS

S.N.	Name of the Student	Title	Guide
1	Onkar Waingankar	Acarbose: fermentative production and downstream processing	USA
2	Vishal Revankar	Spectroscopic characteriazation of mab	USA
3	Bhumika Pathak*	Production & application of microbial phytases	RSS
4	Anuradha Gadkar*	Enzyme immobilization using novel polymers	RSS
5	Shafiq Shaikh	Conversion technologies for covering algae to biofuel	LA

MASTERS RESEARCH PROJECTS

M.Tech. programs involve full time research during Semester III and IV. Every student carries out a project involving laboratory experiments on a predefined problem from the field of specialization and later submits the thesis that is evaluated by an external expert.

M.TECH. (FOOD ENGINEERING & TECHNOLOGY)

S.N.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Ganesh Vidhate	ICT, Mumbai	Novel extraction techniques for coca butter alternatives	Feb 2011	RSS
2	Isha Chhoker*	UDCT, Aurangabad	Shelf life enhancement of nuts	Feb 2011	RSS
3	Madhavi Wagh*	LIT, Nagpur	Studies in extrusion processing	Feb 2011	USA
4	Sudarshan Narwade	MAU, Parbhani	Studies in application of food flavours	Feb 2011	LA
5	Sachin Sonawane	UDCT, Aurangabad	Utilization of fruits and vegetables to develop neutraceutical product	Feb 2011	SSA

M. TECH. (FOOD BIOTECHNOLOGY)

S.N.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Narinder Kaur*	Thapar University, Patiala	Fermentative production of enzymes and their application	Feb 2011	SSL
2	Reena Machamangalath*	ICT, Mumbai	Tropical fruit wines	Feb 2011	SSL
3	Nimisha Mehrotra*	Thapar University, Patiala	Fermentative production of transglutaminase & application in gluten-free products	Feb 2011	RSS
4	Sneha Dhar*	KIT, Kolhapur	Development of a novel synbiotic	Feb 2011	RSS
5	Dipti Sugandh*	Dr. D. Y. Patil University, Navi Mumbai	Studies in natural food colour	Feb 2011	USA
6	Kishor C.Nale	KIT, Kolhapur	Studies in xylitol production & its application	Feb 2011	USA

7	Hema Rajwani*	Thadomal Shahani College, Mumbai	Studies on health beneficial biomolecules from legumes	Feb 2011	LA
8	Navneet D. Satpute	KIT, Kolhapur	Studies in fermentative production of transglutaminase	Feb 2011	LA
9	Pranita S. Joshi*	Tatyasaheb Kore Institute, Warananagar	Studies in the development of dairy based functional food	Feb 2011	LA
10	Shrinivas Deshmukh	KIT, Kolhapur	Studies in production of folate by microorganisms isolated from Indian traditional fermented foods	Feb 2011	SAA

M. TECH. (BIOPROCESS TECHNOLOGY)

S.N.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Amol Joshi	NDMVPS College of Pharmacy, Nashik	Fermentative production and downstreaming of succinic acid	Dec 2010	RSS
2	Vivek Jain	NDMVPS College of Pharmacy, Nashik	Production and recovery of microbial metabolite	Dec 2010	LA
3	Vilas Jaybhaye	NDMVPS College of Pharmacy, Nashik	Fermentative production and downstreaming of cutinase enzyme	Dec 2010	RSS
4	Prakash Hirpara	Arihant School of Pharmacy & B.R.I. Gandhinagar	Fermentative production and downstream processes of lutein	Dec 2010	USA
5	Rajendra Wahule	NDMVPS College of Pharmacy, Nashik	Studies in beta glucan	Dec 2010	SAA

The ongoing doctoral research projects in the FETD are as follows:

PH.D (TECH.) [FOOD ENGINEERING AND TECHNOLOGY (FET)/ FOOD BIOTECHNOLOGY (FBT) / BIOPROCESS TECHNOLOGY (BPT)]

S.N.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Shripad Ambekar (UGC SAP)	ICT, Mumbai	Studies in processing of fruits and vegetables with special emphasis on nutritional aspect (BPT)	Oct 2008	SSL
2	Sandip Bankar (UGC SAP)	ICT, Mumbai	Studies in fermentative production and downstream processing of poly-lysine (BPT)	Nov 2008	RSS
3	AshwiniTilay * (UGC SAP)	ICT, Mumbai	Fermentative production & downstream processing of polyunsaturated fatty acid (BPT)	Aug 2008	USA
4	Asmita Phule * (UGC SAP)	MAU, Parbhani	Studies in deep-fat fried foods (FET)	April 2008	USA
5	Yogita Chavan * (UGC SAP)	SLIET, Punjab	Extraction, separation and purification of polyphenols from areca nut (FET)	Aug 2009	RSS
6	Shatabhisha Sarkar* (UGC SAP)	SLIET, Punjab	Microencapsulation of sensitive food ingredients (FET)	Aug 2009	RSS
7	Lalit Kagliwal (DBT/CSIR)	ICT, Mumbai	Isolation, purification and characterization of antioxidants from natural sources (BPT)	March 2010	RSS
8	Shirish Harde (UGC-SAP)	ICT, Mumbai	Studies on isolation, purification and stabilization of forskolin (BPT)	March 2010	RSS
9	Bikash Sarkar (UGC SAP)	ICT, Mumbai	Encapsulation of sensitive bioactive food constituents (FET)	July 2010	RSS
10	Manisha Jadhav* (UGC SAP)	SLIET, Punjab	Development of extruded food products based on sorghum (FET)	Sept 2010	USA
11	Roji Waghmare* (UGC SAP)	ICT, Mumbai	Preservation of fresh produce by modified atmosphere (FET)	Sept 2010	USA
12	Azza Silotry* (UGC SAP)	ICT, Mumbai	Studies in development of functional foods for inflammatory disorder (FBT)	June 2011	SSL
13	Devshri Bhotmange* (UGC SAP)	ICT, Mumbai	Fermentative production and downstream processing of chondroitin sulphate (BPT)	June 2011	RSS
14	Amruta Bawane* (UGC SAP)	SLIET, Punjab	Newer techniques in extraction of plant constituents (FET)	In-process	RSS
15	Vinit Bajaj (UGC SAP)	ICT, Mumbai	Utilization of waste material for value added products (BPT)	July 2011	USA
16	Rahul Rathod (UGC SAP)	ICT, Mumbai	Development of extruded food product (FET)	In-process	USA
17	Neha Srivastava* (UGC SAP)	D.Y.Patil, Navi Mumbai	Biotechnologiical aspects of *idli* batter fermentation (FBT)	June 2011	LA
18	Shital Giri* (UGC SAP)	LIT, Nagpur	Studies in development of low glycemic index foods (FET)	June 2011	LA
19	Yogesh Gat (UGC SAP)	SLIET, Punjab	Studies on extrusion cooking technology (FET)	May 2011	LA
20	Chetan Joshi (UGC SAP)	ICT, Mumbai	Fermentative production & downstream processing of zeaxanthin (BPT)	In-process	RSS
21	Sandip Choudhari (UGC SAP)	ICT, Mumbai	Fermentative production, downstream processing and applications of microbial cutinase (BPT)	In-process	RSS
22	Aashish Waghmare (UGC SAP)	ICT, Mumbai	In-process (BPT)	In-process	SSA
23	Shanoba Palamthodi* (UGC SAP)	SRM, Chennai	Studies on gourd family vegetables for their biotechnological applications with special emphasis on *Lagenaria siceraria* (FBT)	In-process	SSL

24	Bincy Bhaskar* (DBT)	D.Y.Patil, Navi Mumbai	Studies on bioactive peptides from selected legumes commonly consumed in India (FBT)	In-process	LA
25	Anuja Kulkarni* (UGC-SAP)	D.Y.Patil, Navi Mumbai	Studies in biotechnological aspects of food allergens (FBT)	In-process	LA
26	Sonali Gaikwad* (UGC-SAP)	MAU, Parbhani	In-process (FET)	In-process	SSA
27	Jay Ranjan Kar (UGC SAP)	D.Y.Patil, Navi Mumbai	In-process (FBT)	In-process	RSS

PH.D. SCIENCE [BIOTECHNOLOGY (BT)/BIOCHEMISTRY (BC)]

S.N.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Amol Mali	Dept of Biotechnology, University of Mumbai	Studies in utilization of fruit and vegetable waste for nutraceutical applications (BT)	May 2007	SSL
2	Heena Shah* (UGC SAP)	K.J. Somaiya, Mumbai	Studies in biotechnological aspects of lesser studied tubers of India (BT)	Feb 2008	SSL
3	Prakruti Singh*	G. N. Khalsa College, Mumbai	A study on gene variants and micronutrients in relation to coronary artery disease (BT)	Feb 2008	SSL
4	Jyoti Chougle* (UGC SAP)	K.J. Somaiya, Mumbai	Production & downstream processing of ketocaroteniods (BT)	Jan 2008	RSS
5	Chetana Deshpande* (UGC SAP)	KET's V.G. Vaze College, Mumbai	Studies on gene polymorphisms in relation to lipoprotein metabolism and diet in coronary artery disease (BT)	Feb 2008	RSS
6	Ashwini Tilak* (DBT)	KET's V.G. Vaze College, Mumbai	A study on metabolism of thiopurine drugs-identification of normal & non-normal metabolizers on the basis of gene variants and phenotype (BT)	Feb 2008	RSS
7	Yoginee Budhkar* (CSIR)	University of Pune	Metabolic engineering for biosynthesis of isoprenoids in *E. coli* (BT)	Jan 2008	RSS
8	Chirag Desai (UGC SAP)	R. J. College, Mumbai	Studies on fermentative production and downstream processing of ectoine (BT)	Jan 2008	RSS
9	Shilpa Jayakar* (UGC SAP)	ICT, Mumbai	Studies on fermentative production and downstream processing of lipoic acid (BT)	May 2008	RSS
10	Shruti Baadkari* (UGC SAP)	KET's V.G. Vaze College, Mumbai	Genetic basis of adult-type hypolactasia in Indian subjects (BT)	April 2009	SSL
11	Anupam Bhagat (UGC SAP)	Institute of Science, Mumbai	Studies on fermentative production and downstream processing of thermozymes (BT)	April 2009	SSL
12	Sandhya Iyer* (DBT)	KET's V.G. Vaze College, Mumbai	Identification of genetically determined slow metabolizers of pyrimidine antimetabolites used in chemotherapy of solid tumors (BT)	April 2009	RSS
13	Mangesh Inarkar (UGC SAP)	Department of Biotechnology, University of Mumbai	Studies for carbon sequestration produced by alcohol distillery (BT)	Aug 2009	SSL
14	Supriya Raut * (RGC)	G.N. Khalsa College, Mumbai	Studies in carbonate degrading & precipitation microorganisms in materials (BT)	Aug 2009	SSL
15	Harshali Bandekar* (UGC SAP)	St. Xavier's College, Mumbai	Studies on *Ficus benghalensis* using biotechnological approach (BT)	Sept 2010	SSL
16	Dhiraj Gohil (UGC SAP)	Institute of Science, Mumbai	Fermentation of dietary fibers in vitro with human colonic bacteria (BT)	Sept 2010	SSL
17	Jayshree Subramaniam* (UGC SAP)	Ruia College, Mumbai	Fermentative production & downstream processing of fucoxanthian (BT)	Aug 2010	RSS
18	Swarali Hingse * (UGC SAP)	KET's V.G. Vaze College, Mumbai	Studies in production of vanillin using biotechnological approaches (BT)	Sept 2010	USA
19	Shraddha Digole* (UGC SAP)	Institute of Science, Mumbai	Fermentative production & downstream processing of mycophenolic acid using biotechnological approach (BT)	Sept 2010	USA
20	Swati Jadhav* (DBT)	SIES College, Mumbai	Studies on improvement of stability of enzymes (BT)	In-process	RSS
21	Mugdha Dabir*(UGC SAP)	NMU, Jalgaon	In-process (BC)	In-process	LA
22	Suprama Datta*(CSIR)	Birla College, Mumbai	In-process (BT)	In-process	USA
23	Vaishali Bagul*(UGC SAP)	KTHM College, Nashik	In-process (BT)	In-process	USA
24	Prajakta Insulkar*(UGC SAP)	Birla College, Kalyan	In-process (BT)	In-process	SSL
25	Momin Bilal M. Rahman	Institute of Science, Mumbai	In-process (BT)	In-process	USA

M. TECH. (FOOD ENGINEERING & TECHNOLOGY)

S.N.	Name of the Student	Title	Guide
1	G.R. Anitha*	Development of wheat based traditional specialty product	SSL
2	Rajesh Tupe	Process and product development for plant pigment	SSL
3	Gauri Awalgaonkar*	Chemistry and technology of *papad*	RSS
4	Sayantan Khan	Extraction and modification of starch from damaged cereals	RSS
5	Ganesh Tammewar	Utilization of starch from waste cereals	RSS
6	A. E.Karthikeyan	Studies in drying of value added food product	SSA
7	Rahul Borde	Studies in extrusion	USA
8	Mahesh Satpute	Extraction and utilization of β-carotene	USA
9	Joshna Badgujar*	Development of low GI foods	SSA
10	Sonal Patil*	Optimization, preservation and quality improvement of *thepla*	SSA

M. TECH. (FOOD BIOTECHNOLOGY)

S.N.	Name of the Student	Title	Guide
1	Salma Mukhtar Mir*	Genome based identification of any locally available food commodity	SSL
2	Sneha Deshpande*	Quality assessment of powdered spices using molecular biology techniques	SSL
3	Essakkiyappan Konar	Bioprocessing of spent ginger	RSS
4	K. V. Umesh	Bioprocessing of spent turmeric	RSS
5	Gopal Lakwal	Studies in enzymatic processing of fruits	USA

M.TECH. (BIOPROCESS TECHNOLOGY)

S.N.	Name of the Student	Title	Guide
1	Vaishali Kulkarni*	Fermentative production and downstreaming of an lipase enzyme using indigenous isolates	SSL
2	Vrushali Kulkarni*	Fermentative production and downstreaming of an protease enzyme using indigenous isolates	SSL
3	Mahesh Bhosale	Fermentative production and downstream processing of a ketocarotenoid	RSS
4	Sandip Choudhari	Bioprocessing of agro-industrial waste	RSS
5	Aashish Waghmare	Studies on utilization of fruit waste for production of value added products	SSA
6	Febin Pappachan	Studies in production and purification of therapeutic enzymes using microbial sources	SSA

PH.D. (TECH) [FOOD ENGINEERING AND TECHNOLOGY (FET)/ BIOPROCESS TECHNOLOGY (BPT)]

S.N.	Name of the Student	Title	Guide
1	Mehraj Shaikh Fatima	Studies on acrylamide formation in traditional Indian foods (FET)	RSS
2	Huzaifa Choonia	Studies in biotechnological aspects of finger millet and its microbial isolates (*Lactobacillus* sp.) (BPT)	SSL
3	Supriya Saptarshi*	Studies on fermentative production & downstream processing of L-asparaginase (BPT)	SSL
4	Prafulla Mahajan	Studies on fermentative processing & downstream processing of nattokinase (BPT)	SSL
5	Suhas Rajeeva	Product and process development for thermosensitive biomolecules (BPT)	SSL

PH.D. SCIENCE (BIOTECHNOLOGY)

S.N.	Name of the Student	Title	Guide
1	K.M. Sreenivas	Studies in *Benincasa hispida* (ash gourd) for nutraceutical applications	SSL
2	Parijat Kanetkar	Studies in phytochemicals from Indian medicinal plants using biotechnological approaches	RSS

GOVERNMENT AGENCIES

Sponsor	Title	Duration	Amount	Principal Investigator:	Co-investigator:
University Grants Commission (UGC), Govt. of India	UGC CAS Phase – I	April 2008 – March 2013	Rs. 100 lakhs	Professor S. S. Lele	Professor R. S. Singhal
Rajiv Gandhi Science and Technology Commission	Preservation & processing of fruits & vegetables using sustainable technologies	February 2007 – March 2012	Rs. 189 lakhs	Professor S. S. Lele	Dr. Laxmi Ananthanarayan
Ministry of Food Processing Industries, Govt. of India	Creation of infrastructural facilities for existing courses in food technology	2006-2011	Rs. 48, 27,000/-	Dr. U. S. Annapure	
University Grants Commission (UGC), Govt. of India	Augmenting of research facilities to further facilities in research work under the scheme of UGC-BSR One time grant	March 2012-March 2013	Rs.7, 00,000/-	Professor S. S. Lele	

Research Publications

Research Papers, Reviews, Book Chapters, Patents

PROFESSOR S. S. LELE

Publications		
TITLE	AUTHOR	Journal
Isolation and PCR amplification of genomic DNA from traded seeds of nutmeg (*M. fragrans*)	Deshpande, S. and Lele, S. S.	Journal of Biology, Agriculture and Healthcare, 1: 1-6 (2011).
Gene polymorphism and low dietary intake of micronutrients in coronary artery disease.	Singh, P. R., Lele, S. S. and Mukherjee, M. S	Journal of Nutrigenetics and Nutrigenomics, 4: 203-209 (2011).
Effect of gamma Irradiation on total phenolic content and in vitro antioxidant activity of pomegranate (*Punica granatum* L.) peels	Mali, A. B., Khedkar, K. and Lele, S. S.	Food and Nutrition Sciences, 2: 428-433 (2011).
Chemical pre-treatments and partial dehydration of ash gourd (*Benincasa hispida*) pieces for preservation of its quality attributes	Sreenivas, K. M., Singhal, R. S. and Lele, S. S.	LWT Food Science and Technology, 44: 2281-2284 (2011).

Folate gene polymorphisms MTR A2756G, MTRR A66G, and BHMT G742A and risk for coronary artery disease: A meta- analysis	Singh, P. R. and Lele, S. S.	Genetic Testing & Molecular Biomarkers, 16: 471-475 (2012).
In vitro propagation of *Dioscorea alata* var. purpurae	Shah, H. J. and Lele, S. S.	Applied Biochemistry and Biotechnology, Epub (2012).
Extraction and characterization of sugarcane peel wax	Inarkar, M. and Lele, S. S.	ISRN Agronomy, Epub (2012).
Extraction of diosgenin, a bioactive compound from natural source *Dioscorea alata* Var purpurae.	Shah, H. J. and Lele, S. S.	International Journal of Analytical & Bioanalytical Techniques, Epub (2012).
Dehydration of arvi using convective hot air tray drying.	Shah, H. J., Gokhale, S. V. and Lele, S. S.	Journal of Science & Technology, Epub (2012).
Solid state fermentation of pomegranate seed for lovastatin production: A bioprocessing approach	Naik, A and Lele, S	Advances in Bioscience and Biotechnology, Epub (2012).

Patents		
Title	Inventors	Year
Recovery of anthocyanin from the skin of eggplant (*Solanum meongena* var. oriental)	Lele, S. S. , Ambekar, S. and Tupe, R.	2011
Iron fortified legume based flour premixes, and method of manufacture thereof	Lele, S. S., Ambekar, S. , Laxmi, A. and Shah, H. J.	2012

PROFESSOR R. S. SINGHAL

Publications		
TITLE	AUTHOR	JOURNAL
Kinetic analysis of colour degradation in tomato puree (*Lycopersicon esculentum* L.)	Nisha, P., Singhal, R. S. and Pandit, A. B.	Food & Bioprocess Technology, 4 (5): 781-787 (2011).
Metabolic precursors enhance the production of poly-ε-lysine by *Streptomyces noursei* NRRL 5126	Bankar, S. B. and Singhal, R. S.	Engineering in Life Sciences, 11: 253-258 (2011).
Effect of formulation and processing parameters on acrylamide formation: a case study on extrusion of blends of potato flour and semolina	Mulla, M. Z., Bharadwaj, V. R., Annapure, U. S. and Singhal, R. S.	LWT-Food Science & Technology, 44:1643 – 1648 (2011).
Acrylamide content in fried chips prepared from irradiated and non-irradiated stored potatoes	Mulla, M. Z., Bharadwaj, V. R., Annapure, U. S., Variyar, P. S., Sharma, A. and Singhal, R. S.	Food Chemistry, 127: 1668-1672 (2011).

Production of Cyclosporin A by static fermentation using *Tolypocladium inflatum* MTCC 557	Survase, S. A., Annapure, U. S, and Singhal, R. S.	Agriculture, Food and Analytical Bacteriology, 1: 105-115 (2011).
An efficient, catalyst- and solvent-free N-formylation of aromatic and aliphatic amines	Dhake, K. P., Tambade, P. J., Qureshi, Z. S., Singhal, R. S. and Bhanage, B. M.	Green Chemistry Letters and Reviews, 4 (2): 151 – 157 (2011).
Effect of dissolved oxygen and agitation on the production of serratiopeptidase by *Serratia marcescens* NRRL B-23112 in stirred tank bioreactor and its kinetic modeling	Pansuriya, R. and Singhal, R. S.	Journal of Microbiology and Biotechnology, 21 (4): 430 – 437 (2011).
Improved poly-ε-lysine biosynthesis using *Streptomyces noursei* NRRL 5126 by controlling dissolved oxygen during fermentation	Bankar, S. B. and Singhal, R. S.	Journal of Microbiology and Biotechnology, 21 (6): 652 – 658 (2011).
Separation of bioactives from seabuckthorn seeds by supercritical carbon dioxide extraction methodology through solubility parameter approach	Kagliwal, L. D., Patil, S. C., Pol. A. S., Patravale, V. B., and Singhal, R. S.	Separation and Purification Technology, 80: 533 – 540 (2011).
Sequential optimization of production of Cephamycin C using *Nocardia lactamdurans*: Effect of nutritional supplements, metabolic precursors and inducers	Kagliwal, L. D., Survase, S. A. and Singhal, R. S.	Current Trends in Biotechnology and Pharmacy, 5 (3): 1325 – 1337 (2011).
Esterification of guar gum hydrolysate and gum Arabic with n-octenyl succinic anhydride and oleic acid and its evaluation as wall material in microencapsulation	Sarkar, S. and Singhal, R. S.	Carbohydrate Polymers, 86: 1723 – 1731 (2011).
Chemical pretreatments and partial dehydration of ash gourd (*Benincasa hispida*) pieces for preservation of its quality attributes	Sreenivas, K. M., Singhal, R. S. and Lele, S. S.	LWT-Food Science and Technology, 44: 2281- 2284 (2011).
Optimization of fermentative production of keratinase from *Bacillus subtilis* NCIM 2724	Harde, S. M., Bajaj, I. B. and Singhal, R. S.	Agriculture, Food and Analytical Bacteriology, 1 (1): 54-65 (2011)
Fermentation kinetics of production of ubiquinone-10 by *Paracoccus dinitrificans* NRRL B-3785: Effect of type and concentration of carbon and nitrogen sources	Bule, M. V. and Singhal, R. S.	Food Science and Biotechnology, 20 (3): 607-613 (2011).
Improved activity and stability of *Rhizopus oryzae* lipase via immobilization for citronellol ester synthesis in supercritical carbon dioxide	Dhake, K. P., Deshmukh, K. M., Patil, Y. P., Singhal, R. S. and Bhanage, B. M.	Journal of Biotechnology, 156: 46-51 (2011).
Investigation of steapsin lipase for kinetic resolution of secondary alcohols and synthesis of valuable acetates in non-aqueous reaction medium	Dhake, K. P., Deshmukh, K. M., Wagh, Y. S., Singhal, R. S. and Bhanage, B. M.	Journal of Molecular Catalysis B: Enzymatic, 77: 15 – 23 (2012).
Continuous two stage acetone-butanol-ethanol fermentation with integrated solvent removal using *Clostridium acetobutylicum* B 5313	Bankar, S, B., Survase, S. A., Singhal, R. S. and Granström, T.	Bioresource Technology, 106: 110-116 (2012).
Microencapsulated lycopene for pre-extrusion colouring of foods	Chaudhari, S. M., Bajaj, I. B., Singhal, R. S. and Karwe, M. V.	Journal of Food Process Engineering, 35: 91-103 (2012).
Development of efficient designs of cooking systems - I: experimental,	Joshi, J. B., Pandit, A. B., Patel, S., Bhide, G., Singhal, R. S., Mariwala, K., Devidayal, B., Danao, S., Gudekar, A., Chavan, P. and Shinde, Y.	Industrial and Engineering Chemistry Research, 51 (4): 1878 – 1896 (2012).
Development of efficient designs of cooking systems-II: computational fluid dynamics & optimization	Joshi, J. B., Pandit, A. B., Patel, S., Bhide, G., Singhal, R. S., Mariwala, K., Devidayal, B., Danao, S., Ganguli, A., Gudekar, A., Chavan, P. and Shinde, Y.	Industrial and Engineering Chemistry Research, 51 (4): 1987-1922 (2012).
Development of efficient designs of cooking systems - III: kinetics of cooking and quality of cooked food including nutrients, anti-nutrients, taste and flavor	Singhal, R. S., Pandit, A. B., Joshi, J. B., Patel, S. Danao, S., Shinde, Y., Nisha, B. and Tarade, K. M.	Industrial and Engineering Chemistry Research, 51 (4): 1923-1937 (2012).

Review papers

Title	Authors	Journal (Year)
Poly (glutamic acid) – An emerging biopolymer of commercial interest	Bajaj, I. B. and Singhal, R. S.	Bioresource Technology, 102 (10): 5551-5561 (2011).
Cyclosporin A – A review on fermentative production, downstream processing and pharmacological applications	Survase, S. A., Kagliwal, L. D., Annapure, U. S. and Singhal, R. S.	Biotechnology Advances, 29: 418 – 435 2011).

Melatonin: a review on the lesser known potential nutraceutical	Soundarajan, J. J. , Bhattacharjee, P. and Singhal, R. S.	International Journal of Pharmaceutical Sciences and Research, 2: 1975-1987 (2011).
Safety considerations of drug-nutraceutical interactions	Soundarajan, J. J. , Kagliwal, L. D. and Singhal, R. S.	Indian Food Industry, 29 (6): 29-43 (2010).
Galactooligosaccharides: chemistry, production, properties, market status and applications - A review	Konar, E., Sarkar, S. and Singhal, R. S.	Trends in Carbohydrate Research, 3 (3): 1-16 (2011).

DR. U. S. ANNAPURE

Publications		
TITLE	**AUTHOR**	**Journal**
Effect of formulation and processing parameters on acrylamide formation: a case study on extrusion of blends of potato flour and semolina	Mulla, M. Z., Bharadwaj, V. R., Annapure, U. S. and Singhal, R. S.	LWT-Food Science & Technology, 44:1643 – 1648 (2011).
Acrylamide content in fried chips prepared from irradiated and non-irradiated stored potatoes	Mulla, M. Z., Bharadwaj, V. R., Annapure, U. S., Variyar, P. S., Sharma, A. and Singhal, R. S.	Food Chemistry, 127: 1668-1672 (2011).
Production of Cyclosporin A by static fermentation using *Tolypocladium inflatum* MTCC 557	Survase, S. A., Annapure, U. S. and Singhal, R. S.	Agriculture, Food & Analytical Bacteriology, 1: 105-115 (2011).
Application of response surface methodology for production of capsaicin from *Capsicum annum* L.	Sangwan, L. A., Survase, S. A. and Annapure, U. S.	International Journal of Biotechnology research, 4: 11-18 (2011).
Enhanced production of glutathione from *Saccharomyces cerevisiae* using metabolic precursor and purification with new approach	Rajpurohit P., Tilay A., Survase S. A. and Annapure U. S.	Current Trends in Biotechnology and Pharmacy, 6: 241-254 (2012).
Review		
Cyclosporin A — A review on fermentative production, downstream processing and pharmacological applications	Survase, S. A., Kagliwal, L. D., Annapure, U. S. and Singhal, R. S.	Biotechnology Advances, 29: 418 – 435 2011) .

ENDOWMENT LECTURES

S.N.	Date	Fellowship	Distinguished Speaker / Affiliation	Title of Lecture
1	June 30, 2011	Professor J. V. Bhat Memorial Lecture	Dr. Rohini Kelkar, Professor and Head, Dept. of Microbiology, Tata Memorial Hospital, Parel.	Infection Control & "Food Safety" in Hospitals
2	June 30, 2011	Professor A. Sreenivasan Endowment Lecture	Dr. G. M.Tewari, GM (Retd), The Coca-Cola Company	Water Crises.
3	January 24, 2012	Marico Industries Endowment Lecture	Ms. Chinmayee Deulgaonkar, Manager, Business Build, DET Norske Varitas (DNV), Mumbai	Hazard Analysis in Food Industry
4	February 9, 2012	Professor B. D. Tilak Fellowship Lecture	Dr. Rajendra Kokane Professor and Head, Livestock Product Technology, Veterinary College, Mumbai	Protecting the Safety of Milk
5	February 17, 2012	Lupin Visiting Fellowship Lecture	Dr. Girish B. Mahajan, Senior Group Leader, Anti-infective Screening & Prokaryote Isolation, Department of Natural Products, Piramal Healthcare	Microbes : A Source for New Antibiotics for Bad Bugs
6	February 22, 2012	Professor A. Sreenivasan Endowment Lecture	Dr.Kalpagam Polasa, Head, Food & Drug Toxicology Research Centre, National Institute of Nutrition (ICMR), Hyderabad	Innovations in Food Safety-Challenges and Opportunities Including Nanotechnological Applications
7	June 15, 2012	Professor A. Sreenivasan Endowment Lecture	Mr. Balaji Shetty, Oxyrich	Package Drinking Water-Safety Issues and Growth
8	June 15, 2012	Professor J. V. Bhat Memorial Lecture	Dr. Anil Patil, Jain Irrigation Systems Ltd.	Tissue Culture-Way Forward to Food Security

PROFESSOR S. S. LELE

- Challenges in treatment of industrial effluent, a lecture delivered as a resource person at UGC-sponsored Teacher's refresher course in biological sciences on the theme "Current Advances in Biological Sciences' organized by G.N. Khalsa College, Mumbai on October 12, 2011.
- Attended a two days workshop on 'Development of educational framework for human resource in food safety sector', organized by FSSAI in collaboration with IGNOU at New Delhi, November, 2011.
- Regulations: Role in Innovation at "FOODWORLD INDIA 2011, lecture delivered at conference organized by FICCI on November 16-17, 2011.
- Industry-Academia Partnership, a talk at 'Quality & Excellence in Higher Education', a conference organized by Karmaveer Bhaurao Patil College, Vashi on November 18-19, 2011.
- In vitro fermentative prebiotic activity of gourd family vegetables, a lecture delivered at NHBT-2011 international conference organized and hosted by National Institute for Interdisciplinary Science and Technology (NIIST), CSIR, and The Biotech Research Society of India (BRSI), Trivandrum, November 21-24, 2011.
- Women in science; yesterday today and tomorrow, a talk at a conference organised by National Centre for Science Communicators at Kolkata, January 1, 2012.
- Personality development and career prospects, a talk delivered at Jadavpur University, Kolkata, January 8, 2012.
- Appropriate career selection and planning, a talk delivered at Mahatma Education Society's Pillai's College of Arts, Commerce and Science, New Panvel on January 17, 2012.
- Challenges in biological effluent treatment, a lecture delivered at Goa University, July 23, 2011.
- Personality development and career selection, a speech delivered at Goa University, July 23, 2011
- Human resources and entrepreneurship development in food processing, a lecture delivered at XXI Indian Convention of Food Scientists & Technologists (ICFOST) organized by Association of Food Scientists and Technologists (India) at Pune, on January 20-21, 2012.
- Attended a workshop on 'Fungal Biotechnology: Tools to manipulate aspergillus genome", organized by Maharashtra Academy of Sciences and National Chemical Laboratories, Pune on May 8, 2012.

PROFESSOR REKHA S. SINGHAL

- Outlining the latest range of cost-effective ingredients and elucidating enzymatic solutions for early innovation in the value chain to increase and enhance F & B categories in India, a lecture delivered at FI India Conference Series 2011, organized by FI Conferences and UBM, Bombay Exhibition Centre, Mumbai, October 3-5, 2011.
- Drug-nutraceutical interaction: a safety consideration, a lecture delivered as a resource person for the UGC-sponsored Teacher's refresher course in biological sciences on the theme 'Current Advances in Biological Sciences', G. N. Khalsa College of Arts, Science and Commerce, Mumbai – 400 019, October 12, 2011.
- Studies in microbial production of polylysine, a lecture delivered at International Conference on New Horizons in Biotechnology and 8th Annual Convention on The Biotech Research Society of India, at Trivandrum, November 21-24.
- Attended XXI Indian Convention of Food Scientists and Technologists – ICFOST 2012, organised by Association of Food Scientists and Technologists India), Pune, January 20-21, 2012
- Challenges for food technologists in geriatric nutrition, Rekha S. Singhal, a lecture delivered on the occasion of World Health Day celebration organized by the Departments of Pharmacy & Food Technology, SNDT University, Mumbai, April 11, 2012.
- Frying of foods: an overview, a lecture delivered at UGC-sponsored refresher course on 'Process Control and Analytical Techniques in Food Processing and Quality Evaluation', Jadavpur University, June 25, 2012.

DR. U. S. ANNAPURE

- Attended XXI Indian Convention of Food Scientists and Technologists – ICFOST 2012, organised by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.
- "Food and Oil Safety & Quality Systems (FOSQS-2012)", attended a National Workshop jointly organized by Division of Food Technology and Division of Oil Technology at University Department of Chemical Technology, North Maharashtra University, Jalgaon, on March 16, 2012.
- Genetically modified foods: safety concerns, a lecture delivered at 'National Workshop on Food and Oil Safety & Quality Systems (FOSQS-2012)' organized jointly by Division of Food Technology and Division of Oil Technology at University Department of Chemical Technology, North Maharashtra University, Jalgaon, March 16, 2012.
- Modified and controlled atmosphere packaging, a lecture delivered at 'National Training Course on Nanocellulose and its Composites in Agriculture', organised by Central Institute for Research on Cotton Technology (CIRCOT), Mumbai, October 20, 2011.
- Nanotechnology: application in food packaging, a lecture delivered at 'National Training Course on Nanocellulose and its Composites in Agriculture', organised by Central Institute for Research on Cotton Technology (CIRCOT), Mumbai, October 20, 2011.
- Advances in nonthermal processing of food, a keynote address delivered on the occasion of World Food Day Celebration at Department of Chemical Technology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, October 16, 2011.
- A green route for extraction of nutraceutical and production of natural flavours, a lecture delivered as a resource person for the refresher course on "Chemistry and Chemical Technology', organised by Department of Chemical Technology, North Maharashtra University, Jalgaon on behalf of UGC Academic Staff College, Pune University, Pune, September 23, 2011.

DR. LAXMI ANANTHANARYAN

- Attended an international conference on 'New Horizons in Biotechnology-2011', organized and hosted by National Institute for Interdisciplinary Science and Technology (NIIST), CSIR, and The Biotech Research Society of India (BRSI), Trivandrum, November 21-24, 2011.
- Role of diet in health and disease', a lecture delivered delivered at XXI Indian Convention of Food Scientists and Technologists – ICFOST 2012, organised by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.
- Attended a faculty development programme (BIFP-2012) on 'Biotechnological Interventions in food

Processing", sponsored by All India Council for Technical Education (AICTE), New Delhi and organized by Department of Food Engineering and Technoloy, Sant Longowal Institute of Engineering and Technology, Punjab on March 12-17, 2012.

DR. SHALINI ARYA

- Applications of enzymes in food processing & food quality, a talk given at a conference on 'Biomolecules & Biocatalysts', organized by Department of Biochemisty, St. Aloysius College, Manglore, March 8-9, 2012.

Oral/Poster Presentations

PROFESSOR S. S. LELE

1. A novel low cost iron fortified premix 'FERRO-POWER", Ambekar, S. and Lele, S. S., an oral presentation delivered at 'Developing Solutions for Developing Countries Competition', organized by Institute of Food Technologist (IFT) – 2011, New-Orleans, USA, June 11 -14, 2011.
2. Following posters were presented at International Conference on New Horizons in Biotechnology and 8th Annual Convention on The Biotech Research Society of India, Trivandrum, November 21-24, 2011.

- Invitro propagation of *Dioscorea alata* var. Pupurae, Shah, H.S. and Lele, S. S.
- Solid state fermentation of cauliflower leaves for production of glucoamylase by *Aspegillus niger*, Mali, A. B. and Lele, S. S.
- A study on interplay between genetic and dietary factors in relation to coronary artery disease, Singh, P. R., Mukherjee, M. S. and Lele, S. S.
- Genetic analysis of lactase non-persistence in regional populations of India, Baadkar, S. V., Mukherjee, M. S. and Lele, S. S.
- Development of callus and suspension culture of *Ficus benghalensis* Linn, Bandekar, H. S. and Lele, S. S.
- Solid state fermentation of pomegranate seeds for lovastatin production, Naik, A. S. and Lele, S. S.
- Fruit wine using kokum (*Garcinia indica*) and banana juice, Machamangalath, R. V. and Lele, S. S.

3. Following posters were presented at National Seminar on Role on Bioactive Compounds in Foods on Human Health, November 14-16, 2011,

- Extraction of diosgenin, a bioactive compound from natural source *Dioscorea alata* Var purpurae, Shah, H.S. and Lele, S. S.
- Extraction and characterization of wax from sugarcane peel, Inarker, M. B. and Lele, S. S.

4. Following posters were presented at 'XXI Indian Convention of Food Scientists & Technologists (ICFOST) organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.

- Value addition to fruit and vegetable waste through solid substrate fermentation, Naik, A. S., Mali, A. B. and Lele, S. S.
- Development and application of molecular marker (RAPD based) for the identification of grass seed adulteration in cumin powder, Kaur, N., Mir, S. and Lele, S. S.

5. Quality assessment of traded nutmeg powder using random amplified polymorphic DNA, Deshpande, S. and Lele, S. S., a Poster presented at 'National Conference on Biotechnology, Bioinformatics and Bioengineering', organized by Society for Applied Biotechnology (SAB), Kolhapur, February 24-25, 2012.

PROFESSOR REKHA S. SINGHAL

1. Following posters were presented at International Conference on New Horizons in Biotechnology and 8th Annual Convention on The Biotech Research Society of India, Trivandrum, November 21-24, 2011.

- Three phase partitioning of lipoic acid (LA) from *Saccharomyces cerevisiae*, Jayakar, S. S. and Singhal, R. S.
- Production of bioethanol as a value-added product from spent turmeric, Chaudhari, S., Umesh, K. V., Harde, S., Bankar, S. B. and Singhal, R. S.
- Coding and promoter region polymorphisms of paraoxonase (PON1) and hepatic lipase (LIPC) in native Asian Indians: determination of allele frequencies, apolipoproteins levels and coronary risks, Deshpande, C. S., Mukherjee, M. S. and Singhal, R. S.
- Study on slow-metabolizer alleles of pyrimidine antimetabolites in adult Indian population, Iyer, S. N., Mukherjee, M. S. and Singhal, R. S.
- Study on slow-metabolizer alleles of thiopurine drugs in Indian population, Tilak, A. V., Mukherjee, M. S. and Singhal, R. S.

2. Following Posters were presented at XXI Indian Convention of Food Scientists & Technologists (ICFOST), organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.

- Development of gluten-free traditional Indian wheat-based staples from sorghum and black gram and processing aids therefor, Mehrotra, N. and Singhal, R. S.
- Three-phase partitioning: a novel extraction technique for cocoa butter alternatives, Vidhate, G. and Singhal, R. S.
- Astaxanthin production in *Paracoccus* MBIC 01143: investigation of factors influencing its production and triggering it by metabolic precursors, Chougule, J. A. and Singhal, R. S.
- Shelf-life enhancement of shredded almonds by modified atmosphere packaging, Chokker, I. and Singhal, R. S.
- Characterization and sensory evaluation of co-crystallized cardamom oleoresin with gum Arabic in a sucrose matrix, Sardar, B. R., Tarade, K. and Singhal, R. S.
- Separation of bioactives constituents from arecanut seeds (*Areca catechu* L.) by solvent extraction: an optimization study, Chavan, Y. and Singhal, R. S.

DR. U. S. ANNAPURE

1. Extraction of polyunsaturated fatty acids from biomass using supercritical CO_2 technique, Tilay, A., Azargohar, R., Dalai, A., Kozinski, J. and Annapure, U. S., an oral presentation delievered at Canadian Chemical Engineering Conference in London, Ontario, Canada, October 23-26, 2011.
2. Abstract on 'Supercritical fluid extraction and selective fractionation of polyunsaturated fatty acids from fungal biomass', Dalai, A. K., Tilay, A., Azargohar, R., Kozinski, J. and Annapure, U. S. was published in 242nd ACS National Meeting and Exposition Book of Abstracts, (2011).
3. Enzymatic treatment for extraction of anthocyanins from jamun (*Syzygium cumini*) pulp, Sugandh, D. and Annapure, U. S., oral presentation at XXI Indian Convention of Food Scientists & Technologists (ICFOST), organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.
4. Following posters were presented at 'XXI Indian Convention of Food Scientists & Technologists (ICFOST)

organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.

- Effect of hydrocolloids on oil absorption of legumes (chickpea and green gram splits), Phule, A. and Annapure, U. S. (**Received Best Poster Award**)
- Screening of plant sources for carotenoids, Satpute, M., Surve V. D. and Annapure, U. S.
- Studies on vari rice extrusion, Rathod, R. and Annapure, U. S.
- Physical and sensory characteristics of extruded sorghum snacks, Jadhav, M. and Annapure, U. S.
- Development of noodles from rice and pigeon pea, Wagh, M. and Annapure, U. S.
- Modified atmosphere packaging of minimally processed papaya, Waghmare, R. and Annapure, U. S.

5. Unsaturated fatty acids: fermentative production and successive microencapsulation for improved oxidative stability, Tilay, A. and Annapure, U. S., a poster presented at 11th Agricultural Biotechnology International Conference in Sandton Convention Centre, Johannesburg, September 6-9, 2011.

DR. LAXMI ANANTHANARAYAN

- Studies on anti-hypertensive peptioles from Indian traditional fermented food, Rajwani, H. and Anathnarayan, L., a poster presented at Fifth International Conference on 'Fermented food, health status & social well-being: challenges & opportunities' organized by CFTRI, Mysore, December 15 -16, 2011 (**This was awarded first prize**).
- Evaluation of prebiotic properties of dietary fibres from selected plant sources, Joshi, P. and Ananthanarayan, L., a poster presented at XXI Indian Convention of Food Scientists & Technologists (ICFOST) organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.

DR. SHALINI ARYA

- A poster on Characterization and identification of microorganisms from *kurdai*- an Indian traditional fermented snack food, Deshmukh, S. and Arya, S. was presented at Fifth international conference on fermented foods, health status and social well-being: challenges & opportunities, organized by Swedish South Asian Network on Fermented Foods on Dec 15-16, 2011 at Central Food Technological Research Institute, Mysore.
- A poster on 'Utilization of undried banana peel for production of bioethanol', Waghmare A and Arya, S. was presented at World Congress of Biotechnology, Hyderabad in May 3-5, 2012.

SEMINARS / WORKSHOPS ORGANIZED

The FETD jointly with AFST (Association of Food Scientist &Technologist, India), Mumbai Chapter Organized following events at ICT:

1. World Food Day Celebration Seminar, October 15, 2010.
2. Two day seminar on 'Innovation in Food Science and Technology to Fuel the Growth of the Indian Food Industry at XXI Indian Convention of Food Scientists and technologists' (XXIICFOST), January 20 – 21,2012 at Pune, by the Association of Food Scientists and Technologists (India).

The FETD also organized a two day industrial visit jointly with UAA, for the second, third & final year B.Tech students at Mapro Foods, Wai and Morde foods, Chakan, February 25-26, 2012.

- Rajwani, H. G. (M.Tech.) secured First Prize for presenting the poster in Fifth International Conference on 'Fermented Food, Health Status & Social Well-Being: Challenges & Opportunities' organized by CFTRI, Mysore, December 15 -16, 2011.
- Phule, A. (Ph.D.) received First Prize for the poster presented at 'XXI India Convention of Food Scientists & Technologists (ICFOST) organized by Association of Food Scientists and Technologists (India), Pune, January 20-21, 2012.
- Mulla, M. Z. received the Ambuja Cement Best Thesis award for her Ph.D (Tech) work on 'Acrylamide formation in Indian traditional foods' at the 2012 Annual Day function. She worked under the guidance of Professor R. S. Singhal.

ACADEMIC PERFORMANCE AWARDS

S.N.	Name of Student	Class	Endowment	Criteria	Prize
1	Jayakar, N.*	Final Year B.Tech	Shri Aswin J. Desai Prize	-	Best all rounder day scholar
2	Indalkar, P.	Final Year B.Tech	Shri Aswin J. Desai Prize	-	Best All Rounder Hostelite

SCHOLARSHIPS

S.N.	Name of Student	Class	Endowment	Criteria	Scholarship
1	Indalkar, P.	Final Year B.Tech	Protein Foods and Nutrition Development Association of India, merit-cum-means Scholarship, 2011	-	Rs.8000/-
			Professor P. J. Dubash Memorial-AFST(I) Mumbai Chapter Endowment Scholarship	-	Rs.25,000/-
2	Patil, M.*	Final Year B.Tech	Kamani Oils merit-cum means Scholarship	-	Rs.25,000/-
3	Kaur, S.*	Final Year B.Tech	Mrs. Usha M. Joshi/S.M. Joshi Scholarship	Final.Y.B.TechRank in college – III	Rs.5,000/-
			The Association of Food Scientist and Technologist (I) Bombay Chapter Award	First Rank in Final Y. B.Tech. (Foods)	Rs.400/-
4	Sahastrabudhe, S.* Samant, S.* Ravishankar, S.*	T.Y.B.Tech	Professor P. J. Dubash Memorial-AFST(I) Mumbai Chapter Endowment Scholarship	Highest marks in the subject of Food Chemistry	Rs.2,000/-
5	Giri, B.*	Final Year B.Tech	Sandra Shroff merit-cum-means Scholarship	-	Rs.8000/-

6	Vispute, S.	S.Y.B.Tech.	Kapoor Charitable Trust Scholarship	-	Rs.12,000/-
7	Kharat, M.	Final Year B.Tech	Fine Organic Industries merit-cum-means Scholarship	-	Rs.7500/-
8	Mandre, R.	S.Y.B.Tech.	Ambuja Cement merit-cum-means Scholarship	-	Rs.10,000/-
9	Jagani, R.*	Final Year B.Tech	Ratan Tata Trust Scholarship for Meritorious Student	-	Rs.10,500/-
10	Nayak, S.*	T.Y.B.Tech	Ratan Tata Trust Scholarship for Meritorious Student		Rs.10,500/-

COCURRICULAR AWARDS

S.N.	Name of Student	Class	Event	Activity	Prize
1	Rajwani, H.*	M.Tech-II Food Biotechnology	World Food Day-2011(ICT)	Recipe development-high fibre competition	1st
	Joshi, P.*				
	Kaur, N.*				
2	Deshpande, C.*	Ph.D.(Sc)	World Food Day-2011(ICT)	Recipe development-high fibre competition	2nd
	Tilak, A.*				
	Iyer, S.*				
3	Desai, C.	Ph.D.(Sc)	Exergy – 2012	Amazing Race	1st
	Bandekar, H.*				
4	Nayak, S*	T.Y.B.Tech	Exergy – 2012	Amazing Race	3rd
	Malpure, K.*				
5	Jagani, R. *	Final Year B.Tech	Exergy – 2012	Dexter's Lab	3rd
6	Desai, C.	Ph.D.(Sc)	Manzar – 2012	Treasure Hunt	1st
	Bandekar, H.*				
7	Phalke, S.	S.Y.B.Tech	Manzar – 2012	Drama	2nd
			UDPL	Football	
8	Samant, S.*	T.Y.B.Tech	YICC-2012	Industrial problem by DBT-ICT centre	1st
	Ravishankar, S.*				
	Malpure, K.*				
9	Nayak, S.*	T.Y.B.Tech	Manzar – 2012	Fine Art	2nd
10	Sahastrabudhe, S.*	T.Y.B.Tech	Manzar – 2012	Antakashari	2nd
11	Golash, N.	T.Y.B.Tech	YICC- 2012	Industrial Problem by Chemrux Industries	1st
			Exergy – 2012	Review Paper	1st
				Research Paper	1st
12	Sharma, P.*	S.Y.B.Tech	Sportsag-2012	Volleyball	1st
	Joshi, I.*				
13	Awade, A.*	S.Y.B.Tech	Sportsag-2012	Badminton	1st
14	Nayak, S.*	T.Y.B.Tech	Sportsag-2012	Throwball	2nd
	Malpure, K.*				
15	Mantri, R.*	T.Y.B.Tech	Sportsag-2012	Athletics-Discussthrow	2nd
				Highjump	1st
16	Ivalley, K.*	T.Y.B.Tech	Sportsag-2012	Marathon	2nd
17	Chandhok, A.	S.Y.B.Tech	Sportsaga 2012	Football	2nd
			Manzar-2012	Treasure hunt	
			Literary Club 2012	Lit-a-thon	
			UDPL	Football	
18	Dev, A.	S.Y.B.Tech	Sportsaga 2012	Marathon	1st
				Football	2nd
			Yuvam 2012	Football	1st
			UDPL	Football	3rd

(* Indicates woman student)

Placement

The FETD actively attempts to place the graduates in various national and multinational industries in the field of food and biotechnology. Various companies visit the campus to select best of the students.

PLACEMENT OF B.TECH. (FOOD ENGINEERING & TECHNOLOGY)

		Graduates Employed	Higher Studies	
Year	Passed	Industry	India	Abroad
2008	13	10	-	3
2009	14	2	5	7
2010	15	7	-	5
2011	19	3	1	8
2012*	19	8	-	1

*up to June 30, 2012

PLACEMENT OF M. TECH. (FOOD ENGINEERING & TECHNOLOGY)

		Masters Employed	Higher Studies	
Year	Passed	Industry	India	Abroad
2008	8	7	1	-
2009	5	5	-	-
2010	9	3	-	-
2011	10	2	-	-
2012*	15	12	-	-

*up to June 30, 2012

PLACEMENT OF PH.D. (TECHNOLOGY / SCIENCE)

		Doctorates Employed		Higher Studies
Year	Passed	Industry	Academics	Abroad
2008	3	2	1	-
2009	5	3	1	1
2010	9	4	2	3
2011	7	6	1	-
2012	7	6	1	-

*up to June 30, 2012

CAMPUS PLACEMENTS 2010-11

S.N.	Name of the Company	Name of the Student	Degree
1	Nestle India	Charu Kapoor	B. Tech
		Omkar Joshi	B. Tech
2	General Mills, Mumbai	Sherin Thomas	B. Tech
3	Cadbury India, Delhi	Shrushti Chavan	B. Tech
4	Zaika Foods, Nigeria	Kathikeyan A. E.	M. Tech, Food Tech.
5	Omniactive	Joshna Badgujar	M. Tech, Food Tech.
6	Perkin Elmer, Mumbai	Umesh K.V.	M. Tech, Food Biotech
7	Zytex	Chaitanya Bhokare	B. Tech
8	Godrej India, Mumbai	Purna Thamankar	B. Tech
9	Mother Dairy, Delhi	Mahesh Satpute	M. Tech, Food Tech.
10	Evalueserve, Gurgaon	Gauri Awalgaonkar	M. Tech, Food Tech.
11	Dolcera, Hyderabad	Anitha G.R.	M. Tech, Food Tech.
12	ITC, India	Sayanthan Khan	M. Tech, Food Tech.
		Konar Essakkiyappan	M. Tech, Food Biotech
13	Mapro Foods, Wai	Siddhesh Khade	B. Tech
		Priya Mundra	B. Tech
		Rahul Borade	M. Tech, Food Tech.
		Sonal Patil	M. Tech, Food Tech.
		Gopal Lakhwal	M. Tech, Food Biotech

CAMPUS PLACEMENTS 2011-12

Sr. No.	Name of the Company	Name of the Student	Degree
1	Godrej and Boyce Mfg Ltd, Mumbai	Prashant Indalkar	B. Tech
2	Nestle India	Neeraj Kamat	B. Tech
		Ridhi Jagani	B. Tech
3	Evalueserve, Gurgaon	Chinmaya Gawde	B. Tech
4	Kancor ingredients Ltd., Kerala	Ganesh Vidhate	M. Tech, Food Tech.
5	Mapro Foods, Wai	Sudarshan Narwade	M. Tech, Food Tech.
6	Aaranka	Sneha Dhar	M. Tech, Foodbio Tech.
7	Kraft Foods Pvt. Ltd., Mumbai (Cadbury India)	Reena Machamangalath	M. Tech, Foodbio Tech.
		Hema Rajwani	
8	Marico India	Isha Chhoker	M. Tech, Food Tech.
9	Synthite Kerala	Madhavi Wagh	M. Tech, Food Tech.
		Pranita S. Joshi	M. Tech, Foodbio Tech.
		Shrinivas Deshmukh	
10	Pepsico India	Nimisha Mehrotra	M. Tech, Foodbio Tech.
11	IFFCO, Dubai	Vinay Gurav	B. Tech
		Dipti Sugandh	M. Tech, Foodbio Tech.
		Navneet Satpute	
12	General Mills, Mumbai	Shruti Rathi	B. Tech
13	General Mills, Mumbai	Heena Shah	Ph.D, Biotech
14	Gulf Extrusions Co. Dubai	Harshit Agarwal	B. Tech
		Tanay Chandra	

Annexure A
Abstracts of Thesis

PH.D. (TECH) (FOODS / BIOPROCESS TECHNOLOGY)

Research Scholar: Ashwini Tilay
Research Supervisor: Dr. Uday S. Annapure

STUDIES IN FERMENTATIVE PRODUCTION AND DOWNSTREAM PROCESSING OF POLYUNSATURATED FATTY ACID

Polyunsaturated Fatty Acids (PUFAs) are fatty acids having more than one double bond. These are of various interests because they are precursor of prostaglandins, thromboxanes, leukotrienes, prostacyclins, and so on, having hormone like activities. In addition to this, PUFAs exhibit several unique biological activities, such as lowering of plasma cholesterol level leading to prevention of thrombosis, prevention of heart disease and for the relief of eczema. Accordingly, PUFAs are highly important substances in the pharmaceutical, medical, and nutritional fields.

A novel simple and rapid method was developed for the screening and isolation of PUFAs producing bacteria and named as H_2O_2-Plate assay. The oxidative stability of PUFAs in growing bacteria towards added H_2O_2 allows distinguishing between the PUFAs producers and non-PUFAs producers by direct visualization. The confirmation of method was done using GCMS after primary screening by plate assay. In order to minimise the time required for analysis as well as economic losses, this method gives the suitable solution for large number of samples screening which are abundant in the marine environment and capable of producing PUFAs.

Optimization of fermentative production of PUFAs by *Mortierella* sp. NRRL 1458 was carried out using one factor at-a-time method as well as statistical approach. Effect of various amino acids and vitamins on PUFAs production was studied. Supplementation of medium precursors and amino acids found to give decreased PUFA production. Further optimization using EVOP increased specific PUFAs like AA and EPA production to

211 mg/l and 1.34 mg/l, resp. A kinetic model for understanding the fermentation process for production of PUFAs by *Mortierella* sp. 1458 was proposed. Logistic and Luedeking-Piret models provided a good description of product fermentation.

Aeration and agitation played an important role in fermentative production of PUFA. Increased aeration and agitation supported biomass and product formation. Optimized TLC, biomass and fatty acids (AA and EPA) production were obtained at 400 rpm agitation and 3 vvm aeration. Maximum TLC was achieved till 4.4g/L and DCW- 11 g/L. While specific PUFAs like AA- 684 mg/L and EPA- 4.92mg/L.

Fatty acids extracted by supercritical CO_2 at the optimum operating conditions were more than 70% of total bio-oil available in the biomass. Co-solvents (DCM and ethanol) were used for complete extraction of PUFAs from fungal biomass in a 3-step SC-extraction process. The addition of polar co-solvents such as ethanol and DCM to SC-CO_2 resulted in solubility enhancements of fatty acids in the supercritical mixed solvents as compared to those with pure carbon dioxide. Co-solvent effects were found more pronounced for the SC-CO_2+10% ethanol mixed solvent system. Heating value of SC-CO_2 extracted bio-oil fraction was 33.8 MJ/kg. Also bio-oil showed good lubricity properties for blending with standard diesel fuel at 2 vol%.

Microencapsulation by spray drying technique used to improve photo, oxidative and thermal stability of fungal oil enriched with PUFAs. The microencapsulation was done using different carrier materials such as malto dextrin (MD), gum acacia, modified starch, β-cyclodextrin, sodium alginate. An emulsion using 1% (w/v) TW-20 as an emulsifier at 10% loading of a dispersion medium containing 20% (w/v) MD gave microcapsules of PUFA on spray drying with best encapsulation and entrapment efficiency. Encapsulated PUFA was significantly stable at 30±2°C as well as under UV light as compared to free PUFA. SEM shows formation of smooth spherical surface coated microcapsules of PUFA of 1 μm to 4 μm range.

Attempts were made to separate various PUFAs extracted from fungal biomass by silver silica gel chromatography. The column chromatography reveals the partial separation of fatty acids instead complete separation.

Further, attempts were made for application of the extracted fungal oil enriched with PUFAs to manufacture fortified food product. Rajgira *chikki* was selected to incorporate the fungal oil to study its stability and overall increase in its nutritional value. The optimization of composition of Rajgira *chikki* with sugar and jaggery was done on the basis of texture and sensory analysis. The stability study of each added fatty acid is in process to find out best suitable formulation.

Research Scholar: Sandip Bankar
Research Supervisor: Professor Rekha S. Singhal

STUDIES IN FERMENTATIVE PRODUCTION AND DOWNSTREAM PROCESSING OF POLYLYSINE

Poly-ε-lysine (ε-PL), an unusual naturally occurring homopolyamide of L-lysine having linkage between ε-amino and α-carboxyl groups, is biodegradable, edible and non-toxic towards human and environment. It is preferentially produced by streptomyces species. Potential applications of ε-PL and its derivative have been of multifarious interest in foods, pharmaceuticals and medicine. In spite of commercial production and availability of ε-PL in a few countries, there are knowledge gaps still existing on many aspects of its production and downstream processing. This work was undertaken to look into a few of these aspects.

Initially, various marine strains were screened for the ability to produce ε-PL among which a strain labelled as G 349 was selected for ε-PL production. Biochemical tests and 16S rRNA results showed the ε-PL producer to belong to streptomyces species. Optimization of medium components by classical optimization and with metabolic simulators was carried out. In parallel set of experiments, the production of ε-PL by *Streptomyces noursei* NRRL 5126 in shake-flask culture was optimized by identifying the most significant medium components which affect ε-PL production by Placket–Burman design and subsequently by a statistical design, viz. evolutionary operation (EVOP) to determine the optimal concentrations of these components. Variousmetabolic precursors such as amino acids, tricarboxylic acid cycle intermediates and cofactors were investigated for improved production of ε-PL. The marine strain did not produce appreciable amount of ε-PL as compared to standard strain. Hence all further work was done with the standard strain itself.

The Logistic and Luedeking-Piret equations have been proposed to describe the time course of ε-PL formation, substrate consumption and cell growth in shake flask level as well as in a fermenter. The growth kinetics of *S. noursei* NRRL 5126 was investigated under different aeration and agitation combinations in a 5.0 L stirred tank fermenter. Optimized oxygen supply (300 rpm and 2 vvm) in to the stirred tank fermenter shifted mixed growth associated biosynthesis of ε-PL to growth associated biosynthesis. A constant DO at 40% in the growth phase and 20% in the production phase increased the ε-PL yield as well as cell mass to their maximum values of 2 g/l and 20 g/l, respectively. The oxygen transfer rate (OTR), oxygen utilization rate (OUR), and specific oxygen uptake rates (qO2) in the fermentation broth increased in the growth phase and remained unchanged in the stationary phase.

Use of resting cell cultures to increase the stability and shift in metabolism toward ε-PL biosynthesis was also implied. Optimization of non growth medium to achieve uniform culture density and higher ε-PL titre with minimal degradation was aimed with the help of Box-Behnken design and artificial intelligence. A comparative study of Box-Behnken design and artificial intelligence lead to higher production of ε-PL (1 g/l) during shake flask level.

Purification of ε-PL was done by using various chromatographic techniques such as ion exchange and gel permeation chromatography. Partial characterization of the ε-PL has been done. Further characterization of the same is in progress.

Potential applications of ε-PL to increase the stability of a model enzyme (α-amylase) and to increase the solubility of pharmaceutical drug have been evaluated.

Research Scholar: Shripad Ambekar
Research Supervisor: Professor S. S. Lele

PROCESSING OF FRUITS AND VEGETABLES WITH SPECIAL EMPHASIS ON NUTRITIONAL ASPECTS

India is the second largest producer of the vegetables in the world, but less than 2% of the total vegetable production in the country is commercially processed as compared to other countries, leading to huge post harvest loss. Also lack of infrastructure in terms of cold storage chains and unorganized transport add to these losses. The first objective of this work was to preserve different vegetable and fruit powders by process optimization, while doing this utmost importance is given to maximum retention of nutritional parameters and organoleptic properties by the final product which could be in the form of flakes/ powders/ blended powder mix. The second objective of this project was to bring together agro-producers, processors at the same place to set such small scale vegetable dehydration unit in such a way that process and product cost will be economical and everyone will be the winner at the end of the day.

In the first part, focus was mainly on process development for different drying methods. Hot-air, Infra-red, and hot air assisted IR drying methods were mathematically modeled for drying of tomato, passion fruit and other leafy vegetables. This part of work included; (i) Process optimization and kinetic modeling of convective hot air drying, Infra-Red and sequential drying by both hot air and IR for tomato slices. The page model showed the best fit for hot air and IR drying experimental data with R^2 0.99 (ii) This work also report the effect of drying temperature on pigment content and antioxidant activity of tomato powder and it was found that hot air drying at 60°C showed best retention of Lycopene 1.759± 0.3 mg/gm of DW, with total phenolic content 4.23±0.11 mg/gm GAE and ABTS activity 5.38±0.15 μmol/gm TE. Also attempts were made to increase the throughput of 100 kg/batch pilot scale tray dryer (electric) and 2.5 kg/batch for lab scale IR dryer. (ii) Process optimization and kinetic modeling of convective drying, for passion fruit pulp was done and Henderson and Pabis model showed the best fit with R^2 0.99 (ii) Study of effect of drying temperature on flavor, color and antioxidant activity of passion fruit pulp was done and it was found that hot air drying at 60°C showed best retention of total phenolic content 10.70±0.62 mg/gm GAE and ABTS activity 9.62±0.49 μmol/gm TE with other organoleptic properties.

In the second part, focus was primarily on subsequent development of demand driven products like instant ready to drink (RTD) soup mixes and iron fortified ready to cook (RTC) vegetable powder mixes for healthy as well as iron deficient population. RTD format was chosen aiming at dehydration of various vegetables grown in Maharashtra by setting up a small scale demo dehydration plant in the near vicinity of the agro producers. In the case of RTC, option of cereal flour based and vegetable powder based mix was fortified by inorganic source or natural iron containing source like Haliv, was also explored. This premix can be used as good iron supplemented food in various forms in developing countries like India.

PH.D. (SCI) (BIOTECHNOLOGY)

Research Scholar: Prakruti R. Singh
Research Supervisor: Professor S. S. Lele

A STUDY ON GENE VARIANTS AND MICRONUTRIENTS IN RELATION TO CORONARY ARTERY DISEASE.

Coronary artery disease (CAD) is the most common form of heart diseases that results due to occlusion in the arteries supplying blood to the cardiac muscles. CAD is no longer confined to the affluent, industrialized world but has spread to developing economies as well.CAD in Indians is premature and the disease patterns are severe and diffuse. Several risk factors like diabetes mellitus, hyperlipidemia, obesity, physical inactivity, unhealthy diet and cigarette smoking are associated with risk of CAD but about 30% of CAD cannot be explained by these conventional risk factors. Thus, any intervention that can help understand the cause of CAD will have a tremendous impact on public health. In recent years considerable interest has developed on new probable risk factors. This study deals with two such interesting probable risk factors: Folate metabolism and Inflammation.

Part 1.1: The first part of our study deals with evaluation of DNA genetic variations (polymorphisms) in genes encoding enzymes in folate metabolism and the risk associated, if any, with CAD in Indian population. 252 CAD cases and 252 age and sex matched controls were genotyped for MTR A2756G, CBS 844Ins68, TS 28bp repeat, TS 6bpdel and BHMT G742A genetic variants. Genotype and minor allele frequencies were determined by direct count. Odds ratio with 95% confidence interval was estimated as a measure of association between genotype and CAD. A p-value of less than 5% for chi square test was considered to be statistically significant. No statistically significant association between cases and controls was observed for all the five polymorphisms when studied with respect to gender and no age barrier. However, we found that BHMT 742 G>A polymorphism is also associated with risk for early onset of CAD (p=0.04).

Part 1.2: A number of vitamins and micronutrients are co-factors in folate metabolism and deficiency of these nutrients in diet may also result in perturbation of metabolism. Therefore, second part of the study describes the correlation between genotypes, dietary intake of micronutrients and risk of CAD. Dietary assessment was based on 24 hr recall coupled to a food frequency questionnaire. For MTR A2756G, a decreasing trend was observed for vitamin B12 in cases and was found to be borderline statistically significant (p=0.06) indicating that homozygous variant genotype and low dietary intake of vitamin B_{12} can be a risk factor for CAD.

Part 2: Recent literature shows that inflammation also plays a role in pathogenesis of CAD by plaque rupture which leads to release of hydrolytic enzymes and pro-inflammatory cytokines. Thus, in this study we investigated whether DNA methylation in the IL6 promoter region is a possible contributory factor in inflammatory pathogenesis of CAD. No statisitically significant difference was observed in methylation status of the CpG sites at position -665 and -1095 of IL6 promoter between controls and CAD patients with severe disease, indicating that methylation status at these sites may not play a role in pathogenesis of CAD.

Research Scholar: Heena Shah
Research Supervisor: Professor S. S. Lele

STUDIES IN BIOTECHNOLOGICAL ASPECTS OF LESSER KNOWN TUBER DIOSCOREA

The tuber *Dioscorea alata* Var purpurae, commonly known as purple yam or kand (Hindi) is found in Western Ghats of India. 80% of the tuber is a purple colored cortex with approximately 72% moisture. Cortex is the edible portion of the tuber made up of 20% starch and 9% protein. It possesses a saponin Dioscin which on hydrolysis yields Diosgenin. Diosgenin is a well known triterpenoid having applications in pharmaceutical industries as starting material for the hemisynthesis of corticosteroid hormones and other steroidal drugs. Very little research has been carried out on the Indian variety and hence micro-propagation, fermentation studies and biotechnological application studies where taken up.

Part I deals with processing of tuber. Enzymes like cellulase, xylanase and pectinase were used for easy peeling and preparing raw material for tray drying. RSM was the statistical tool used to obtain the optimum drying conditions of: temperature: 58°C, recirculation ratio: 8, Thickness: 8mm. Dried tuber slices were powdered to 40ASTM mesh size and were seal packed for the further use throughout the project. Drapeau et al protocols with slight modification was used to extract diosgenin from fresh and dried tuber, callus and suspension culture broth. Starch was extracted in four different solutions. Best yielding solution 0.2% NaOH was used to extract starch for further work of preparing biodegradable polymer.

Part II is the analytical section dealing with proximate analysis of the tuber powder following AOAC protocol. Protein profiling to its constituent amino acids was done by Ion chromatography. Diosgenin content was analyzed by spectrophotometer, HPLC, HPTLC and GC method. GC method was found to be best method to quantify diosgenin content from all the samples. Physical properties of biodegradable polymer, like solubility, colour, texture and thermal behavior, where studied. Also its biodegradability was accounted based on total organic carbon (TOC) count.

Part III describes plant tissue culture work. Various explants like tuber, leaf and nodal segment where tried for

micro-propagation. Different permutations and combinations where tried for media components, hormones and additives to get best callus generation. MS media supplemented with 6-BAP (0.2ppm) and 2,4-D (2ppm) maintained at 25±2°C under cool-white fluorescent tubes with 16 h photoperiod gave Callus initiation from 8th to 11th day and subsequent root/ shoot initiation in nodal callus after 21 days. The callus so obtained was transferred to liquid media to get single cell suspension culture. To this phase cholesterol was added as precursor to study its impact on diosgenin content. Very slight increase was observed in diosgenin content.

Part IV has fermentation studies of dioscorea tuber powder and diosgenin. Untreated and alkali treated tuber powder was simultaneously saccharified and fermented with microorganisms like *Trichoderma ressei*, *Zymomonas mobilis* and *Saccharomyces cerevisiae* to get bio-ethanol. D-optimal statistical design was used to optimize several parameters simultaneously to get best bio-ethanol yield. In second system standard and crude diosgenin was subjected to biotransformation with nine different strains of six species. The batch was harvested after 120 hours and was analyzed using GC. The chromatogram clearly shows the peak of transformed compound B.

Research Scholar: Amol B. Mali
Research Supervisor: Professor S. S. Lele

STUDIES IN UTILIZATION OF FRUIT AND VEGETABLE WASTE FOR NUTRACEUTICAL APPLICATIONS

In an agricultural country like India, a tremendous production of fresh food is observed along with an increase in food processing facilities. This generates huge quantities of fruit and vegetable waste like peels, seeds, core etc. that are rich in enzymes, antioxidants, minerals, proteins, carbohydrates, etc. The current project aims at the utilization of this waste for exploring their potential in various nutraceutical applications.

First part deals with utilization of pomegranate (*Punica granatum* var. ganesh) peels. Solvent extraction studies were carried out for maximum extraction of total polyphenols and also to get maximum in vitro antioxidant activity. The values were found to be 19.47 ± 0.17 g GE $100g^{-1}$ DW and 23.17 mM TE $100g^{-1}$ DW respectively. Purification of polyphenols present in methanolic fractions was carried out using Sephadex LH 20 by gel filtration chromatography. Minimum inhibitory concentration and zone of inhibition studies showed that, these methanolic fractions possess antimicrobial and antifungal activities. Gamma irradiation studies were carried at various dosage levels (5.0, 10.0, 15.0 and 25.0 kGy) on pomegranate peel powder. This study showed significant increase ($p < 0.05$) in total phenolic content and in vitro antioxidant activity for 10.0 kGy irradiated dose level. Both the values were found to be positively correlated. Post irradiation storage studies also showed that, the irradiated peel powder was microbiologically safe even after 90 days of storage period at 25 °C with stable in vitro antioxidant activity.

Second part reports utilization of cauliflower (*Brassica oleracea* var. botrytis) leaves. Amino acids profile of leaf protein coagulum (LPC) was studied. This study confirms earlier reports of the presence of essential amino acids in cauliflower leaves. Solid state fermentation studies were carried out by utilizing cauliflower leaves as substrate. Supplementation with maltose (2% w/w) and ammonium sulphate (1.5% w/w) gave 568.16 ± 1.12 U gds^{-1} glucoamylase yield. An extracellular fungal glucoamylase was also purified from the culture supernatant by using ion exchange and phenyl-

Third part dealt with the nutraceutical applications of purified fractions of antioxidants, LPC and minerals from pomegranate peels and cauliflower leaves respectively. Microencapsulation studies of these fractions were carried out successfully by spray drying. In vitro protein and calcium digestibility of cauliflower leaves fractions showed protein digestibility in the range of 80.5 to 90.0 %. Formulation of these purified fractions into value added products like *Nankatai* and health drink premixes along with storage studies is in progress.

M. TECH. (FOOD ENGINEERING & TECHNOLOGY)

Research Scholar: G. R. Anitha
Research Supervisor: Professor S. S. Lele

DEVELOPMENT OF TRADITIONAL WHEAT BASED SPECIALITY PRODUCTS

Traditional foods are an expression of culture, history and lifestyle. Traditional food preparation has been known to be cumbersome and is time and energy consuming. *Puranpoli* is a wheat based speciality Indian dessert, served during auspicious occasions and during important festivals such as Holi, Padwa, Ugadi. Seviya is a cold extruded product mainly made from wheat semolina. It has been widely used in Indian traditional preparations like *Kheer* and *Upma*. With today's rapidly changing lifestyle and affordability, the consumer is reluctant to spend time and energy on preparing these foods.

The scope of present work is to develop the instant *puran* premix, instant *puranpoli* atta mix and to prepare seviya enriched with legume and cereal flour. Process and product development for instant *puran* premix was optimized. The premix formulation was optimized by one ingredient at a time for pre-gelatinized chick pea flour, sugar and flavoring agents using appropriate sensory test. The *puran poli* prepared from Instant *puran* premix was evaluated in comparison with conventionally made *puranpoli* using sensory analysis – Triangle test for difference. The result showed no difference exists between the samples with 5% significant level and had similar acceptability. In order to develop a more convenient version of the product an instant *puranpoli* atta mix was formulated with wheat flour, pre-gelatinised chickpea flour, powdered sugar and ground nutmeg as flavoring agent. The formulation containing (wheat flour (35-40%), chick pea (30-35%), sugar (30-35%) in the range had high overall acceptability.

Seviya was prepared with wheat semolina (control) and different proportions (10-40%), of legume-cereal flour blend (LCFB) by replacement of semolina. Seviya samples with 20% incorporation of LCFB had a high overall acceptability, low hydrolysis index (HI 90) and low glycemic index (GI). LCFB addition resulted in increased protein content, total dietary fibre content and total antioxidant activity of seviya

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Research Scholar: Rupesh B. Tupe
Research Supervisor: Professor S. S. Lele

PROCESS AND PRODUCT DEVELOPMENT FOR PLANT PIGMENT

Synthetic colourants in foods have posed many safety and toxicological issues, so there is an increasing demand for natural food colourants. Fruits and vegetables are one of the major sources of various natural pigments like anthocyanin, betalain and carotenoids. Due to advancement in agricultural practices, there has been a considerable increase in production of pigment rich vegetables. Eggplant (*Solanum melongena*) and beetroot (*Beta vulgaris* L.) are rich sources of anthocyanins and betalain respectively. The present work was undertaken for extraction of anthocyanin from eggplant peels and its application in food products.

The first part of research work was process optimization for extraction of anthocyanin from eggplant peel. The extraction was carried out using different varieties of eggplant, solvents, solvent/water ratio, time, pH, temperature and sample/solvent ratio. Oriental eggplant (kala-lumba brinjal) was selected for process;

acidified ethanol was found best solvent for extraction, optimized condition were acidified ethanol-water ratio 70:30(v/v), pH 1.5, 50°C with 1:40 sample/solvent ratio for 150 min. The antioxidant activity was determined by ABTS assay; results were reported to be 0.73 mM/100gm Trolox equivalent with 61.57% inhibition.

The second part of the study involves on application of anthocyanin in lemon marmalade. The parameters for marmalade jelly formation (Juice, gelling agent, sugar and water concentration) were optimized by response surface methodology (RSM) by taking response parameters like texture, colour, anthocyanin retention and overall acceptability.

The third part of study involved extraction of betalain from beetroot powder and quantitative and qualitative analysis of betalain. Qualitative analysis was done by LC-MS method, gradient elution method was developed with acetonitrile and water-formic acid (99.6:0.4 v/v) as mobile phase using MS detector.

Research Scholar: Mahesh S. Satpute
Research Supervisor: Dr. Uday S. Annapure

EXTRACTION AND UTILIZATION OF PLANT PIGMENT

The prevalence of Vitamin A deficiency in India is one of the major concerns in the world, especially among preschool children, about 31–57 percent suffers from subclinical Vitamin A deficiency and another 1–2 percent suffers from clinical Vitamin A deficiency (UNISEF, 2008). According to IUPAC, carotenoids are compounds consisting of four isoprenoid units joined in a head- to tail manner; all retinoids derived from a monocyclic parent compound containing five carbon-carbon double bonds and a functional terminal group at the terminus of the acyclic portion. Within the intestinal wall (mucosa), beta-carotene is partially converted into vitamin A (retinol) by the enzyme dioxygenase. If the body has enough vitamin A, the conversion of beta-carotene decreases. Therefore, beta-carotene is a very safe source of vitamin A and high intakes will not lead to hypervitaminosis A.

Dietary lipids are hypothesized to be an important factor for carotenoid bioavailability. Apart from cultivated types, there are number of wild growing greens which are edible, but there are no documented evidences of their pro-vitamin-A activity. Some of these less familiar leafy vegetables were screened for total carotenoids contents. India is the largest producer of moringa with an annual production of 1.1–1.3 million tones of tender fruits from an area of 38,000 ha. The present work was undertaken for extraction of beta-carotene from drumstick leaves and its application in food products.

First part of research was screening of plant sources for total carotenoid content. The extraction was carried out using plants, different drying methods, drying temperature, solvents, solvent/water ratio, time and sample/solvent ratio. Drumstick leaves was selected for process; ethanol was found best solvent for extraction, optimized condition were temperature of drying 60°C with 1:20 sample/solvent ratio for 120 min.

The second part of study involves effect of different degreening agents on chlorophyll breakdown of plant. Ethylene showed fastest degreening rate. Refined sunflower, ricebran, groundnut, soybean, and palm oil were used to extract carotenoids. Ethanolic extract containing carotenoids was added with oil and shacked at 180 rpm and extracted carotenoids were calculated. The parameters for extraction were optimized by one factor at a time. Sunflower oil showed maximum solubility. The optimized conditions were extraction conditions for temperature (70°C), Ethanol extract: oil ratios (1:5), time (150 min) were optimized. Estimation of β-carotenoids was carried out using reversed phase HPLC.

Research Scholar: Rahul B. Borde
Research Supervisor: Dr. Uday S. Annapure

STUDIES IN EXTRUSION PROCESSING

Extrusion processing is a versatile, low cost, HTST process widely used to manufacture foods and feeds. Generally it is used for preparation of breakfast cereals, snacks, pasta, noodles, baby foods, flat breads, meat analogues (TVP) and modified starches. Most commonly used materials for extrusion are maize, wheat and rice flours, but others such as potato, rye, barley, oats, sorghum, cassava, tapioca, buckwheat and legumes are also used.

India is one of the largest producers of legumes producing about 13.38 million tones annually. Majorly grown legumes in India are chick pea, black gram, green gram, soya bean, and kidney bean, of which black gram (*Vigna mungo* L.) (1.46 million tones) and green gram (*Vigna radiata* L.) (1.11 million tones) are important legume crops occupying unique position in Indian agriculture. They are good source of protein. Besides this, they are also rich in minerals like calcium, iron, phosphorus and vitamins like vitamin B_1, vitamin B_2 and niacin.

Change in lifestyle increased demand for convenience foods like pasta which are generally made from wheat, have low protein content. Again the most widely consumed extruded snacks are primarily made with cereals/grains due to their good expansion characteristics. They also tend to be low in protein and other nutrients. Therefore, there is an increasing consumer demand for more nutritious food products. In this project the attempts have been made to develop protein rich snacks and a ready to cook product using legumes by extrusion.

In first part, extrusion behavior of black gram is studied under the twin screw. The process parameters were optimized using one factor at-a-time method, such as feed moisture content (14 % to 18 %), screw speed (230 rpm to 270 rpm), and die temperature (140°C to 160°C). The effect of these processing conditions on extrudate characteristics viz., expansion ratio, bulk density, water solubility index (WSI), water absorption index (WAI), texture were carried out. In second part, effect of extrusion processing on protein digestibility of black gram is studied and process parameters are optimised to have protein sticks with high protein digestibility. Then protein content is increased by using whey protein, and fortifying level is optimised. In third part, legume based ready to cook convenience product is prepared using mixture of black gram and green gram. The process parameters were optimized using one factor at-a-time method, such as feed moisture content (14 % to 18 %), screw speed (120 rpm to 180 rpm), and die temperature (120 °C to 135 °C). The effect of these processing conditions on extrudate characteristics viz., expansion ratio, bulk density, texture and on cooking characteristics viz., cooking time, water absorption, cooking losses were carried out. Attempts have been made to reduce the cooking losses by using CMC and guar gum.

Research Scholar: Sonal P. Patil
Research Supervisor: Dr. S. S. Arya

STANDARDIZATION, PRESERVATION AND QUALITY IMPROVEMENT OF *THEPLA*: AN INDIAN VEGETABLE FLATBREAD (UNLEAVENED)

Thepla is a nutritious, traditional unleavened flatbread similar to a *chapatti* consumed in western zone of India such as Gujarat, Maharashtra and Rajasthan. It is generally prepared from whole wheat flour, oil, leafy vegetables (mostly fenugreek or spinach), salt, water and spices and baked on an iron griddle. It is

traditionally prepared at home by hand sheeting of dough and consumed fresh. The preparation of *theplas* is tedious and time consuming since it requires dough preparation, sheeting and a high skill of cooking. The increasing demand for convenience food is because of urbanization and industrialization, has, however, created a need to mechanize the preparation of those foods.

There are no reports available on the ingredients and process standardization and preservation of *thepla* though some preliminary work has been done on *chapatti* by few authors. Hence, present work aims to standardize all the ingredients and the process of thepla preparation and develop methi thepla which can sustain its nutritional, sensory and quality on the market shelf for long time. Fenugreek has many nutritional advantages to complement *thepla*.

The problems associated with *thepla* are staling and microbial spoilage. Various dough improvers and preservatives such as citric acid, calcium propionate, potassium sorbate, guar gum and carrageenan were used to overcome these problems. *Theplas* were prepared with addition of these improvers and preservatives and packed in LDPE self sealable pouches and stored at 4 ± 2°C and 30 ± 2°C. The effect of addition of these on qualities of theplas such as moisture content, tensile strength, extensibility and total plate count over a period of one month was studied. Preservation of food without disturbing its freshness and sensory characteristics is a challenge; one key technology for achieving this goal is to seal the food product in a package which contains a mixture of natural gases in carefully controlled proportions that significantly slow down the process of decay by inhibiting processes of oxidation and the growth of microbes. Hence in the present study efforts were taken to package the theplas with modified atmosphere packaging and to study the effect on various quality parameters such as moisture content, microbial spoilage, tensile strength and extensibility.

World today is conscious about the health problems. Diabetes and obesity are few of the most concerned problems due to faulty dietary patterns which may be illustrated best by the term "fast foods". Glycemic Index (GI) is one of the parameter which helps studying the effect on diabetic population. Hence present work has been undertaken to help overcoming the problems particularly by reducing the GI of the *thepla*.

Research Scholar: Joshna B. Badgujar
Research Supervisor: Dr. S. S. Arya

DEVELOPMENT OF LOW GLYCEMIC INDEX (GI) FOOD

In India changing lifestyle and eating habits has increased the evidences of diabetics even at lower age group (20% < 35 years and 50% <40 years of age). Hence a joint FAO/WHO expert consultation recommended increased consumption of low Glycemic Index (GI) foods. GI is a scale that ranks carbohydrate rich foods by how much they raise blood glucose levels. Indian traditional diet mainly consists of cereals and legumes. Sorghum is considered as the world's fifth most important cereal after wheat, rice, maize, and barley. Sorghum generally has the lower starch digestibility compared to other cereals primarily due to the endosperm protein matrix, cell wall material and tannin inhibiting enzymatic hydrolysis of the starch. Sorghum in the form of bhakri is widely consumed in rural India.

Thus in present study process parameters (thickness of *bhakri*, baking temperature and time) and ingredients (water to flour ratio and salt content) for sorghum *bhakri* was optimized. Optimized ingredients and parameters for sorghum *bhakri* was flour to water ratio of 1:1, salt content of 1.5%, sheeted *bhakri* thickness of 3mm, baking time of 5min at 170°C. Further quality of *bhakri* was tried to improve with various improvers such as guar gum, SSL, gluten, CMC, HPMC. The *bhakri* quality was improved by all additives tested; however the highest improvement in overall quality of *bhakri* was brought about by guar gum at 0.75%.

Legumes are known to be low GI food. Most commonly consumed Indian legume flours were selected namely black gram, green gram, soybean (defatted), chickpea and fenugreek seeds and added at different levels (5-20%) in sorghum *bhakri*. These samples were evaluated for sensory analysis, samples received highest sensory score were analyzed for GI by in vitro enzymatic method. Furthermore from this study three legumes were selected having lowest GI namely chickpea, black gram and soybean (defatted) to investigate effect of combination of legumes on GI of *bhakri*. D-optimal mixture design was constructed using the software Design Expert Version 6.0.10.

The response surface methodology (RSM) was used to investigate the effect of milling conditions namely aperture, feed rate and moisture content of sorghum grain on damaged starch, GI, dough stickiness and bhakri quality. Aperture was varied as 2, 3 and 4mm in a stone mill, feed rate as 0.25, 0.68 and 1.11min for 200g sorghum grains and grain moisture content as 7.5, 13.75 and 20% w/w. Flour containing varying amount of damaged starch ranging from 6.18% to 23.03% were obtained. These were evaluated for GI, dough stickiness and *chapatti* quality. GI increased with decreased in aperture. Dough stickiness was increased with decreased in aperture. With decrease aperture and increased moisture content softness of *bhakri* was improved.

Research Scholar: Gauri S. Awalgaonkar
Research Supervisor: Professor Rekha S. Singhal

CHEMISTRY AND TECHNOLOGY OF *PAPADS*

Papad is a delicious traditional Indian snack food prepared from various legumes, cereals and their blends with the addition of common salt, spices and alkaline additives. It is India's contribution to the world menu. In India, *papad* industry is predominantly a cottage industry and is mainly started for women empowerment and social welfare. This sector of the industry faces many challenges in terms of making of *papads*, maintenance of quality, and its storage. The present work was undertaken to address some of these issues.

Papads are consumed in fried, microwaved and roasted forms. The wide acceptance of fried *papads* lies in their unique organoleptic characteristics including flavour, texture and appearance. Due to the consumer demand for low fat products, many approaches to develop low fat or fat-free products are being sought but without any changes in the existing machinery or currently used practices. Gellan gum is reported to reduce oil uptake in a few products, but not in *papads* which are widely different in composition and geometry from those reported. Hence, the effect of addition of gellan gum on the quality characteristics of black gram based *papad* dough texture (hardness and stickiness) and fried papad viz. oil uptake, texture, colour, expansion, and sensory characteristics were evaluated. Gellan gum at 0.5 % (w/w) reduced the oil uptake significantly without altering the sensory quality. A similar study was carried out with *papads* based on flour from green gram splits, and its blend with black gram flour.

Papad making is a very painstaking and laborious process. The black gram papad dough is very hard to handle and is difficult to roll. Besides, the women are paid on the basis of number of papads rolled. Since black gram contain pentosans, it was thought that partial breakdown of the same with xylanase as a processing aid could ease the problem. Accordingly, the effect of xylanase concentration and dough resting time were optimized for dough texture and fried *papad* quality as above. A significant improvement was observed which was confirmed by actual trials using volunteers.

Further work was undertaken to evaluate the stability of the antioxidants in frying oil and in the oil present in fried *papads* by quantifying them during after repetitive frying cycles. The antioxidants chosen were propyl gallate, butylated hydoxy anisole (BHA) and tertiary butyl hydroquinone (TBHQ) at 200 ppm in the oil. Propyl gallate was found to be present in negligible amounts in the fried *papads* and its content decreased drastically after the second frying cycle in the frying oil. Studies with BHA and TBHQ are in progress.

Research Scholar: Sayantan Uday Khan
Research Supervisor: Professor Rekha S. Singhal

EXTRACTION AND MODIFICATION OF STARCH FROM DAMAGED CEREALS

Wheat is one of the major staple food crops, feeding almost 1/3rd of the world population. It is the third most abundant food crop grown in the world and India ranks second with an annual production of 80.7 million metric tonnes (2009-10). Shortly after harvesting, wheat grains are packed in gunny bags and stored in warehouses, or in specially designed structures called silos with the provision of air-circulation through the grains. Proper storage requires a moisture content of 14% to be maintained, besides protection from variations in temperature and humidity, rain, direct sunlight and pests. Inadequate and improper storage facilities cause a major proportion of our wheat produce to be stored under Cover and Plinth (CAP) and in poorly maintained warehouses, resulting in a sizable loss of the total annual produce. Wheat constituting about 72% w/w starch is damaged due to the activation of starch-degrading enzymes during germination of the grains. Fungal and pest infestation also cause considerable damage, making it unsafe for human consumption and even as animal feed. Storage-damaged wheat is no longer useful, and is usually dumped or burned.

The present work was undertaken to extract the residual starch from the damaged grains and study its physicochemical properties. Changes caused due to germination were studied and techniques for starch extraction were reviewed. The Martin process was selected for starch isolation and storage-damaged starch was simulated in the laboratory by imbibing the wheat grains with water for 16 h, followed by germination in the dark at 25^{0}C for 24 h and 48 h. A drastic fall in viscosity of gelatinized starch was observed for starch from germinated wheat. Therefore a need was felt to modify the extracted starch to improve its physicochemical properties so as to make it suitable at least for non-food applications.

Carboxymethylation was chosen to be an apt method due to its extensive applications in the textile industry. Process parameters of carboxymethylation such as reaction temperature, etherification time, NaOH concentration, sodium monochloroacetate concentration and starch-liquor ratiowere optimized for native wheat starch, and starch from wheat germinated for 24 h and 48 h, by one factor at a time. The carboxymethyl starches (CMS) so obtained were evaluated for their degree of substitution (DS). The physicochemical properties of the obtained starches were evaluated for their viscosity, freeze-thaw stability, swelling power, and cold-water solubility.

The starch samples thus obtained viz. (a) native wheat starch, (b) CMS of DS 0.36 from 24 h, and (c) CMS of DS 0.35 from 48 h germinated wheat were evaluated as a thickener in textile printing. Vat dyes were used for the study and printing was done on cotton fabric. Colour strength (K/S) and fastness properties of the printed samples are being studied to determine the suitability of the prepared starch for the aforesaid purpose.

Research Scholar: Ganesh R. Tammewar
Research Supervisor: Professor Rekha S. Singhal

UTILIZATION OF STARCH FROM DAMAGED CEREALS

Since ancient times, wheat is the staple cereal consumed and grown in world. In 2010 world production of wheat was 682.40 million tons, making it the third most-produced cereal after maize and rice. India is one of the main wheat producing and consuming country in the world. India is estimated to have produced a record 84.27 million tons of wheat in 2010-11 crop year ending June. Due to insufficient storage facilities, India is facing a problem of storage of this huge stock of wheat. Improper storage conditions causes germination of wheat and also make it more susceptible to microbial attack making it unfit for human and animal consumption. Starch degrading enzymes like amylases are activated during germination which degrades the starch into simple sugars. This leads to a drastic fall in the starch viscosity post gelatinization, a property which can be improved by chemical modification, for instance, by hydroxypropylation.

In this work, initial experiments were designed to utilize damaged wheat by isolating starch at different extents of damage and study its physicochemical properties as compared to native starch. Damaged grains were simulated in the laboratory by imbibing the wheat with water for 16 h, followed by germination in the dark at ambient temperature for 24 h and 48 h. Subsequently, process parameters for hydroxypropylation were optimized for native wheat starch and starch from wheat germinated for 24 h and 48 h, using one factor at a time methodology. The hydroxypropyl starches (HMS) so obtained were evaluated for their molar substitution (MS).

The physicochemical properties of the obtained starches were evaluated for their viscosity, freeze-thaw stability, free swelling capacity, and solubility at various temperatures. Subsequently, hydroxypropylated starch obtained from wheat germinated for 24 h and 48 h were utilized for textile printing using vat dyes. Printed samples were studied for color strength (k/s) and fastness properties to check the suitability of starch for the proposed purpose.

Research Scholar: A. E. Karthikeyan
Research Supervisor: Dr. S. S. Arya

STUDIES IN DRYING OF VALUE ADDED FOOD PRODUCT

The preservation of foods by drying is the most common method used by humans. Drying is also used in the food processing industry. Dehydration of food is one of the most important achievements in human history, making humans less dependent upon a daily food supply under adverse environments conditions. Though in early times drying was dependent on the sun, now a day many types of sophisticated equipment's and methods are used to dehydrated foods. During the past decades, considerable efforts have been made to understand some of the chemical and biochemical changes that occur during dehydration and develop methods for preventing undesirable quality losses.

Studies were carried out to determine the effect of temperature on drying time and color value (L,a & b). Various parameters studied are chlorophyll content, carotenoids content and color values. 60°C was found to be the optimized temperature for the drying of vegetables.

Blanching is a primary step in processing of vegetables employed in order to avoid the enzymatic degradation. However, chemical degradation may be takes place. A loss of green color in food product is associated

with pheophytin formation, in which the Mg^{2+} of the chlorophyll is replaced by H^{+}. Attempts were made to analyze the effect of different blanching treatment viz water, water and KMS, salt solution, $MgCl_2$on chlorophyll, total carotenoid retention of fenugreek, dill and colocasia leaves.

Processing parameters like processing temperature, time, method of cooking etc have certain influence on the stability of color. Therefore the effect of Mg^{2+} ion on color degradation in fenugreek and dill leaves over a range of temperature was studied along with the degradation of color in different cooking methods such as open pan method and pressurecooking method was studied in the present work. The study was further carried out to develop vegetable paper using all the above optimized parameters.

M. TECH. (FOOD BIOTECHNOLOGY)

Research Scholar: Salma Mukhtar Mir
Research Supervisor: Professor S. S. Lele

GENOME BASED AUTHENTICATION OF ANY LOCALLY AVAILABLE FOOD COMMODITY

Powdered spices are known to be adulterated with synthetic substances as well as natural products. Biological adulterants are difficult to be detected by physical, chemical/biochemical and immunological methods. Hence the objective of the present study was to develop a simple qualitative method for the detection of adulteration by random amplified polymorphic DNA (RAPD) fingerprinting in two spices 1) powdered cumin 2) powdered coriander

Cumin and coriander are most commonly adulterated with colored grass seeds. RAPD offers advantages like low operating cost, ability to discriminate different botanical species and no prior requirement of sequence information.

A single DNA isolation protocol for obtaining DNA from authentic powdered spice, adulterant species and market samples of powdered spice was standardized by trying various commonly used DNA isolation protocols. DNA was obtained from all the samples by slightly modifying Chen et al., 2009 method. The DNA was quantified spectrophotometricaly and quality was checked by electrophoresis on 0.8 % agarose gel. Different random primers (single or in combinations) were screened and conditions of PCR were optimized for developing RAPD pattern to authenticate powdered cumin and coriander. RAPD fingerprint was developed in presence of two primer combinations 5'TGCTGCTGGT3' and 5'GGACCCAACC3' to authenticate powdered cumin.

A 300 bp marker sequence was seen in all the authentic and market samples of cumin. The four market samples of cumin were analyzed for the presence of five different grass seed adulterants and were found to be free from adulteration by these species. RAPD fingerprint development for authentication of coriander is in progress.

Research Scholar: Sneha Deshpande
Research Supervisor: Professor S. S. Lele

QUALITY ASSESSMENT OF POWDERED SPICES USING MOLECULAR BIOLOGY TECHNIQUES

Adulterant detection and authenticity testing of traded spices assume special importance for value assessment; to check unfair competition and to assure consumer protection. DNA based molecular tools can detect inferior quality varieties even of the same species very effectively due to wide DNA variation and thus, are gaining importance for adulterant detection in traded commodities of plant origin.

The present work focuses on developing a quick qualitative Randomly Amplified Polymorphic DNA (RAPD) based assay for detecting adulteration in traded powders of nutmeg (*M. fragrans*) {adulterant: False nutmeg (*M. malabarica*)} and cardamom (*E. cardamomum*) {adulterant: large cardamom (*A. subulatum*)}.

Isolation of DNA from *E. cardamomum* powder and market samples was carried out using protocol reported by Syamkumar et al. (2005) and the quality was assessed using 1% agarose gel. High molecular weight conspicuous bands were observed for the authentic and market samples. Work is in progress for isolation of genomic DNA for large cardamom (*A. subulatum*).

Isolation of DNA from seed powders of *M. fragrans* (authentic), *M. Malabarica* (adulterant) and market samples was successfully carried out by modifying the protocol as reported by Chen et al. (2009) and the quality was assessed using 1% agarose gel. High molecular weight conspicuous bands observed on the gel confirmed the presence and good quality of DNA. PCR parameters were standardised for authentic varieties of nutmeg, their adulterants and market samples to obtain RAPD pattern. The presence or absence of a unique band obtained from the RAPD pattern of the adulterant, in the RAPD pattern of market samples will reveal whether the sample is adulterated or is pure.

Research Scholar: Umesh K. V.
Research Supervisor: Professor Rekha S. Singhal

BIOPROCESSING OF SPENT TURMERIC

India is the largest producer of turmeric (*Curcuma longa* L.), supplying 78% of the world's demand. According to the Spices Board India (2009), the production of turmeric was 892,213 tonnes and that exported was 52,500 tonnes for the year 2008-09. Turmeric oleoresin is obtained by solvent extraction from turmeric which constitutes about 4 - 10% of turmeric constituents and the remaining 90% being treated as waste. The objective of the project is to utilize the waste (spent turmeric) to produce bioethanol. The overwhelming advantage of bioethanol for the environment is its potential to be carbon neutral on a life cycle basis.

For determining the process scheme for the production of bioethanol, the proximate analysis and carbohydrate profiling of the spent turmeric sample was performed. Saccharification or hydrolysis of biomass was achieved by dilute acid hydrolysis and enzymatic hydrolysis. Based on the comparative study of both enzymatic and acid hydrolysis, acid hydrolysis was selected to further carry out the fermentation. In enzymatic hydrolysis, the parameters like optimum pH, temperature and time of incubation were optimized. In acid hydrolysis, the effect of various parameters such as concentration of sulphuric acid, substrate loading, temperature and time were optimized by using one factor at a time method.

Fermentation of the reducing sugars obtained from the spent turmeric was carried out using the hydrolysis media (optimized condition obtained from saccharification step) and *Saccharomyces cerevisiae* as source. The effect of many fermentation parameters like seed age of the yeast culture, inoculum size, pH and effect of stirring were monitored. Further work to enhance the bioconversion rate is in progress. Work related to separation and purification of desired product using various distillation and extraction techniques is also in progress.

Research Scholar: Konar Esakkiyappan M.
Research Supervisor: Professor Rekha S. Singhal

BIOPROCESSING OF SPENT GINGER

Ginger (*Zingiber officinale* L.) is one of the most important and widely used spices in the world. According to Spices Board India, ginger production was 7,95,028 tonnes in the year 2008-09 and exported around 5000 tonnes in the same year. Ginger is exported in various forms such as fresh ginger, dry ginger, ginger powder and ginger oleoresin. Oleoresin contains the aroma as well as the taste constituents of a spice in a concentrated form. Ginger oleoresin has also found applications in pharmaceuticals and perfumery industries. In ginger, oleoresin constitute about 4-10% on an average of dry weight of raw rhizome. After oleoresin extraction, about 90% of mass is left behind as 'spent' or 'residue' from an industrial perspective. This residue is a rich source of carbohydrates. Currently, the spent ginger is just thrown away or used as a solid fuel to run boilers in industries. The presence of starch as the major fraction of carbohydrates propelled the thought of converting it as a bioresource for production of bioethanol which in turn could be used in-house by the industry producing the oleoresin itself.

Two ginger spent samples were procured from two recognized oleoresin manufacturers and were subjected to proximate analysis and carbohydrate profiling studies, initially, and found to be rich in carbohydrates. Two approaches i.e. dilute acid and enzymatic hydrolysis were carried out for saccharification of carbohydrates present in sample. In dilute acid hydrolysis, maximum release of sugars was obtained at 25% substrate loading, 1% H_2SO_4, 120^{0}C and 40 min. enzymatic hydrolysis was executed by means of two different enzyme systems i.e. a) Spezyme Alpha (α-amylase) and Distillase L-400 (glucoamylase) and b) Stargen 002 (blend of α-amylase and glucoamylase). Here, the parameters optimized for both the systems by using one factor at a time method were substrate load, enzyme load, temperature, pH and time. Stargen yielded significant release of sugars than the two enzyme system.

The sugars thus released were subjected to fermentation using *Saccharomyces cerevisiae* 3059. The effect of pH and substrate constituents present in the hydrolyzed media on the yeast growth were also studied. Vital parameters which are optimized for fermentation are sugar concentration, inoculum size, pH, fermentation time and stirring effect. We have achieved 80% conversion efficiency of utilizable sugars to ethanol. Further work to enhance the bioconversion is in progress.

Research Scholar: Gopal C. Lakwal
Research Supervisor: Dr. Uday S. Annapure

STUDIES IN ENZYMATIC PROCESSING OF FRUITS

India is the second largest producer of fruits and vegetables in the world next to China as reported by Maharashtra Economic Development Council, 2010. However, in India, only 2.2 % of the total production is processed in contrast to other countries which process almost 80% or more of their fruits and vegetables produced. At present, India's per capita consumption of fruit juice is 20 ml compared to that of China with 1500 ml as reported by Ministry of food processing (Government of India,2009), hence there is a huge potential for the development of juice sector with exotic and lesser-known fruit. Fruit beverages have gained importance among consumers over the synthetic beverages because of their health nourishing properties. Processing of fruits would assist to improve economy, foreign exchange of the country and reduces the post harvest wastage. Present work deals with production of fruit beverages from fig (*Ficus carica*) and pomegranate (*Punica granatum*) cultivated in subtropical region of India having production 1,25,000 and 5,00,000 tons/annum respectively. Both the fruits are rich in vitamins and phytochemicals having antioxidant activity, which is beneficial for health.

Proximate analysis and carbohydrate profiling of fig fruit was performed and pectinase, cellulase enzymes were selected for juice clarification. Enzymatic action was optimized by one factor at a time method for different enzyme concentrations, incubation temperature and time. Both the enzymes were incorporated into fig pulp individually and in combination. It was found that synergistic action of enzymes [pectinase (0.06%) : cellulase (0.028%), temperature (50^{0}C) and time (90 min)] had better acceptability score than the individually processed one, which were analyzed in terms of percentage viscosity reduction, clarity, colour, anthocyanin content and overall sensory score. Further study of enzymes were carried out by immobilizing pectinase and cellulase by entrapping in calcium alginate beads. Immobilized condition were optimized by varying concentration of sodium alginate, calcium chloride and bead size. It was found that pectinase and cellulase immobilization yield were 53 % and 60 % respectively and can be used for four consecutive cycles with satisfactory results.

Statistical optimization of enzymatic treatment for pomegranate juice clarification was carried out. Response surface methodology, based on quadratic model using CCRD was applied to determine the effect of pectinase, cellulase, incubation time and temperature on clarity of juice with optimum anthocyanin, polyphenol concentration. The optimized conditions for juice obtained from RSM has increased the clarity from 3%T to 94.6% T, total anthocyanin from 26.5 mg/100ml to 39.31 mg/100ml and total polyphenol from 269 mg/100ml to 296 mg/100ml. Pre-optimized immobilized conditions were studied in pomegranate juice. It was found that initial six repetitive cycles showed satisfactory results.

M.TECH. (BIOPROCESS TECHNOLOGY)

Research Scholar: Vaishali M. Kulkarni
Research Supervisor: Professor S.S.Lele

FERMENTATIVE PRODUCTION AND DOWNSTREAM PROCESSING OF LIPASE ENZYME USING INDIGENOUS STRAINS

Lipases (triacylglycerol acylhydrolases, EC 3.1.1.3) catalyze the hydrolysis and the synthesis of esters formed from glycerol and long-chain fatty acids. Among lipases of plant, animal and microbial origin, it is the microbial lipases that find immense application. This is because microbes can be easily cultivated and their lipases can catalyze a wide variety of hydrolytic and synthetic reactions. Hence the present study aims at fermentative production and downstream processing of lipase enzyme from indigenous isolates from Nainital (kindly, provided by Kumayun University, Nainital).

Submerged fermentation was chosen for lipase production. Media screening was done by screening various best reported media for lipase. The media which gave highest lipase activity (6 U/ml) was selected for further studies. Media optimization was performed by using conventional one factor at a time and statistical methods – Central Composite Design was selected. One factor at a time was done by varying different physical and chemical factors. Effects of inducers were also studied as lipase is known to be an inducible enzyme. After one factor at a time the lipase activity increased to 16 U/ml (an increase of 60 %). While after statistical optimization using RSM lipase activity increased by 3 times to 52 U/ml.

The purification of the lipase enzyme was carried out using ultrafiltration, ammonium sulfate precipitation, dialysis and ion-exchange chromatography. Characterization and application of purified lipase is in progress.

Research Scholar: Vrushali M. Kulkarni
Research Supervisor: Professor S. S. Lele

FERMENTATIVE PRODUCTION AND DOWNSTREAM PROCESSING OF PROTEASE FROM INDIGENOUS STRAINS

Proteases are enzymes which carry out proteolysis. Proteases are a unique class of enzymes, since they are of immense physiological as well as commercial importance. Proteases are physiologically necessary, they occur ubiquitously in animals, plants, and microbes. However, microbes are a goldmine of proteases and represent the preferred source of enzymes in view of their rapid growth, ease of cultivation, and ready accessibility to genetic manipulation. Most bacterial species possess the ability to produce proteases, although very few are recognized as commercial producers. Only those microbes producing substantial amounts of extracellular enzyme are of industrial importance. Microorganisms account for two-third share of commercial protease production in the world. Microbial proteases have been extensively used in various industries like food, dairy and detergent, photographic and pharmaceutical industries since ancient times.

Objective of the project was to study the fermentative production and downstream processing of protease enzyme using the marine isolate ICTF2, on which work has been carried out previously where it was suspected to show protease activity. Media optimization was done by conventional one factor at a time to maximize protease production. Physiological factors effecting enzyme production such as seed age (8h), inoculum size (5% v/v), pH (6.0), temperature (37°C), and incubation time (48h) were optimized for maximum yield. Different carbon sources and nitrogen sources were evaluated. Maltose, yeast extract and soy peptone increased the production level. The amidolytic activity was increased 3.7 times, i.e. 4829 IU. Using statistical experiment design amidolytic activity was increased 5 times, i.e. 6604 IU.

Research Scholar: Sandeep A. Chaudhari
Research Supervisor: Professor Rekha S. Singhal

BIPROCESSING OF AGROINDUSTRIAL WASTES

India is the largest producer and exporter of a variety of spices and contributes significantly to the foreign trade exchange. A large number of vital components like alkaloids and oleoresins are extracted from these spices for several applications viz. therapeutic, flavour, food industry, perfumery, and pharmaceuticals.

Among the spices, black pepper or dried ripe fruits of Piper nigrum is the most important and is also referred to as a 'black gold'. The annual production of black pepper in India during the year 2008-09 was 46745 tonnes, of which around 40% is utilized for the production of oleoresin. India exports about 90% of pepper oleoresin to many countries all over the world. Pepper contains an alkaloid piperine (5-9%), volatile oil (1-2.5%), pungent resin (6%), piperine (3-4%) and starch (about 30%). Extraction of oleoresins containing both volatiles and non-volatiles is a routine industrial practice. After extraction of the oleoresin, the spent black pepper residue comprising 80% of the starting raw material, are discarded. The present work was undertaken to convert such agro-industrial waste into bioethanol by bioprocesses and could be used 'in house' for industrially useful purposes.

Two samples of spent black pepper from industrial houses were evaluated for their carbohydrate contents by direct and fractionation method. Enzymatic and acid hydrolysis was optimized for maximum hydrolysis of the carbohydrate biopolymers to readily utilizable sugars. One factor-at-a-time methodology was employed to investigate the effect of various parameters such as enzyme concentration, substrate concentration, incubation time, temperature and pH for the enzymatic reaction. For acid hydrolysis, acid concentration, substrate concentration, incubation time and temperature for dilute acid hydrolysis were evaluated. Many vital factors that affect ethanol production such as seed age, inoculum size, pH and nitrogen source were optimized using one factor-at-a-time. We have achieved 60% conversion efficiency of utilizable sugars to ethanol. Further work to enhance the bioconversion is being carried out. Work related to separation and purification of ethanol using various distillation and extraction techniques is also in progress.

Research Scholar: Aashish Waghmare
Research Supervisor: Dr. S. S. Arya

STUDIES ON UTILIZATION OF FRUIT WASTE FOR PRODUCTION OF VALUE ADDED PRODUCTS

According to Indian Horticulture Data base (2008),India is the second largest producer of fruits in the world. India accounts 63 million tons per year of 512 milliontons per year of fruitsharvested globally. The amount of organic waste arise makes troublesome scenario to manage effectively.

The expenses connected to the problem of hygiene and odour of the fruit waste could possibly be turned into an advantage by transforming the fruit waste to "value added products" by applying innovative ideas yielding new products and meeting the requirements of essential products required for human and animal as well as pharmaceutical industry.

The present work deals with systematic analysis and utilization of six most common fruit wastes namely apple pomace, banana peel, mosambi pomace, mosambi peel, papaya peel and watermelon waste into various values added products. From initial study it was found that water melon waste powder had good water holding capacity 15 ml/gm which could be used as bulk forming laxative in combination with soluble polysaccharide. The formulationwas developed and evaluated for bulk density, tap density, angle of repose, Carr's index, Husner's ratio and swelling index. The resultant product was compared with marketed formulation andtheresults were comparable and advantageous over marketed formulation. Similarly, Water melon powder had high swelling index making it suitable for used as disintegrant in paracetamol tablet and further evaluated for various parameters.

Unripe banana peel is rich source of starch that was used for bioethanol production by fermentation. Initially, hydrolysis of starch was optimized by two methods namely, acid hydrolysis using H_2SO_4 and enzymatic hydrolysis using α–amylase and amyloglucosidase. Screening of three different strains was done for maximum ethanol production by considering various characteristics. The maximum ethanol producing yeast strain was selected for optimization of fermentation parameters of hydrolysate.

Fruit waste powders were found to be good source of soluble dietary fibers and insoluble dietary fiber. Three types of fruit waste powders were selected on the basis of palatability, odour, taste and microbial count to study the effect on glycemic index (GI) of *thepla* by adding in various concentration of fruit waste powder.

Research Scholar: Mahesh Bhosale
Research Supervisor: Professor Rekha S. Singhal

FERMENTATIVE PRODUCTION AND DOWNSTREAM PROCESSING OF A KETOCAROTENOID

Canthaxanthin is a bright red keto-carotenoid pigment mainly found in green microalgae, bacteria, and halophilic archaea. Like other carotenoids, it is also an antioxidant in nature and has widespread application

as colourants, feed supplements, neutraceutical, cosmetics and medicine. Canthaxanthin can also be used as feed additive for hen, fish and as tanning agent for human skin. Conventionally canthaxanthin is obtained by chemical synthesis but it has low acceptance due to hypersensitivity and allergy. Hence alternative methods for production of canthaxanthin using fermentative production by archaebacteria have been attempted.

Optimization of fermentation parameters for canthaxanthin production was carried out by one factor at-a-time method and by statistical method with *Haloferax alexandrinus*. The canthaxanthin production of 1.6 mg/l was achieved at the end of one factor at-a-time method. Response Surface Methodology (RSM) using Box-Behnken was applied to determine optimum concentration of the media components. The optimized medium components by RSM were NaCl (25%), $MgSO_4$ (4%) and beef extract (2%). Canthaxanthin production increased after supplementing different TCA intermediate and amino acids in the medium. α-ketoglutarate and glutamine increased canthaxanthin production up to 1.9 mg/l and 3.0 mg/l respectively

Downstream processing involved the cell disruption techniques by using glass beads, ultrasonication, probe sonication, and osmolysis. Osmolysis was found to be effective for cell disruption and was used for further purification studies. Solvent extraction using organic solvents (acetone and hexane) was used for further purification of canthaxanthin. Reverse phase chromatography (RPC) involved screening of various RPC matrices and HPLC analysis was followed characterization of the purified canthaxanthin using NMR and IR spectrometric techniques.

Research Scholar: **Febin Pappachan**
Research Supervisor: **Dr. S. S. Arya**

STUDIES IN PRODUCTION AND PURIFICATION OF THERAPEUTIC ENZYMES USING MICROBIAL SOURCES

Superoxide dismutase (SOD, EC 1.15.1.1) is an endogenously produced intracellular enzyme present in, essentially every cell in the body. SOD constitutes the first line of defense against oxidative damage by catalyzing the dismutation of superoxide anions ($O_2^{\bullet-}$) to molecular oxygen (O_2) and hydrogen peroxide (H_2O_2). In turn, hydrogen peroxide is degraded by catalases and peroxidases. SOD's are metallo enzymes that can be classified in to Cu/Zn-SOD, Fe-SOD, Mn-SOD and Ni-SOD depending on the metals identified in their active sites. Present study deals with the production and purification of the therapeutically important antioxidant enzyme superoxide dismutase from microbes.

Ten strains were selected based on the sequencing data and nature of the microorganism. Screening of the selected microorganisms was carried out by submerged fermentation to find the potential SOD producing strain. Among ten strains studied, *Bacillus licheniformis* NCIM 2051 showed 41.78±0.07 U/ml SOD like activity which was selected for further fermentation optimization by one factor at a time method and statistical analysis. Presence of 1% (w/v) proteose peptone, 1% beef extract, 0.25% lactose and 16 ppm $MnSO_4H_2O$ in the media showed significant changes in the SOD production. At the end of one factor at a time method the SOD activity was increased to 105.70±2.02 U/ml. Response Surface Methodology (RSM) by Central Composite Design didn't show improvement in the activity compared to that of one factor at a time method.

Cell disruption was performed by sonication throughout the project. Presence of SOD was confirmed by Nitro-blue tetrazolium (NBT) activity staining of Native-PAGE gels. Partial purification of SOD was carried out by ammonium sulphate precipitation, dialysis and ion exchange chromatography.

IN-HOUSE COMMITTEES & RESPONSIBILITIES

FACULTY

S.N.	Faculty Name	Department Level Responsibility	Institute Level Responsibility
1	Professor S. S. Lele	• Head, FETD • Coordinator UGC-CAS	• Chairperson , Garden Committee • Chairperson , Canteen Committee • Member, Academic Calendar Com. • Member, Legal Cell, Appellate Com.
2	Professor R. S. Singhal	• Incharge- Analytical Instruments • B.Tech /M.Tech in-plant training • Campus recruitment • Departmental coordinator, TEQIP	• Member, Students' welfare • Editor, Publication (Bombay Technologist) • Member, Resource Mobilization • Coordinator, Faculty Development Program, TEQIP
3	Dr.U. S. Annapure	• Incharge- processing equipment	• Coordinator, M.Tech Food Biotech upto June 2011 • Convenor of Faculty Coordinators • Committee for Training & Placement Cell, • Member, AICTE Accreditation Com. • Member, Admission Committee • Member, Anti-Ragging Committee • Warden, Hostel No.4
4	Dr. Laxmi Ananthanarayan	• Seminar • Projects • Academics	• Coordinator, M.Tech Food Biotech since July 2011 • Member, Welfare of Support Staff
5	Dr. Shalini Arya	• Incharge: CAP-MAP and other equipments • Safety incharge • Nutrition day, Education day, Endowment lectures	• Warden, Ladies Hostel • Member,Equal Opportunity Cell (EOC) • Unfair Means in Examinations and Vigilance squad committee • Member Cultural Activity Committee • Member, Anti-Ragging Committee

SUPPORTING STAFF

S.N.	Laboratory Technician/Assistants	Department Level Responsibility
1	Mr. Datta Dingankar	Overall management of Labs; Maintenance, stores related activities
2	Ms. Sangeeta Dhakne	Overall maintenance of equipments, AMC, Log book, etc
3	Mrs. Sagarika Jadhav	Placing orders, procurement mainly related to DBT/RGC grants
4	Ms. Chitra Koli	Assisting in data & annual report compilation

Annexure C

CO-CURRICULAR EVENTS AND PERSONNEL TRAININGS

- **IFT-2011 (Developing Solutions for Developing Countries Competition)**

Institute of Food Technologist (IFT) organized annual meeting and food expo from 11th June to 14th June 2011 at New-Orleans, USA. Thousands of the world's top food science and technology professionals, representing the most prominent organizations in the food sector, attended the 2011 IFT convention. The Student Association of IFT has organized "The Developing Solutions for Developing Countries (DSDC)" competition, with a theme "Utilize Food Science and Technology to Address the Issue of Iron Deficiency in Developing Countries".

For the first time, from India a team from the Department of Food Engineering and Technology, Institute of Chemical Technology, Mumbai, participated in the DSDC competition. A novel low cost iron fortified premix 'FERRO-POWER' was developed for this competition. Our project proposal was selected in top six teams (out of 30 teams all over the world) for oral presentation and finally we secured third place in the international category at the end of this competition.

The Ferro-Power team members were:

Professor S. S. Lele (Faculty Mentor)
Dr.Laxmi Anananthanarayan (Faculty Mentor)
Lead student: Mr.Shripad Ambekar
Additional supporting students: Ms.Heena Shah, Mr.Sreenivas K.M. & Ms.Shamika Kulkarni

- **8th Technology Led Entrepreneurship Programme**

Ms. Heena Shah, PhD research fellow of FET Department attended the 18 days training program on "Technology Lead Entrepreneurship Management Programme" organized by HRDG, CSIR & RMD, IICT, Hyderabad from 4-18 July 2011 at IICT, Hyderabad.

Module's covered: Spirit of Entrepreneurship; Entrepreneurial Perseverance & Resilience; Entrepreneurial inspiration: personal & organizational vision; Technology-driven business opportunities; Major hurdles/ barriers in technology driven ventures & their solutions; Pursuing excellence in Science & Technology; Measuring & accomplishing excellence in Science & Technology in contemporary settings; Attitudes, Facilitation & Commitment for excellence; Introducing, initiating & extracting "Entrepreneurship/Intrapreneurship" attributes in the context of contemporary research activities; Company Law & commercial Knowledge for technological ventures; General understanding of economic environment; Finance & Accounts: Financial statements; Communication skills; Strategic thinking in Technology Ventures; Marketing in Technology-Led Ventures; Finance & Accounts: Costing in technological ventures; Finance & Accounts: Capital budgeting in technological ventures; Finance & Accounts: Managing working capital & cash flows in technological ventures; Patenting system in India as well as US & EP patent law; IPRs in context of CSIR; IPR management; IPRs- valuation & pricing & technical & legal aspects of patents; Business plan presentation.

Personal achievements: Prepared a business plan for setting up a diagnostic lab "9Tech Diagnocure" in Lucknow. For starting up this business the initial investment was 14 Lakhs with Debt: Equity: 1.8: 1 and Payback period : 1 year 8 months.

- **Dassera Pooja 2011**

On the occasion of Dasera pooja, FETD's research students organized a fun-filled award function for supporting staff and research students. The festive spirit of Dasera was kept alive by drawing of colourful rangoli in all the labs.

- **World Food Day 2011**

FETD jointly with AFST (I), Mumbai Chapter celebrates World Food Day on October 16 every year. This year, a seminar was organized in association with AFST (I), Mumbai on October 15, 2011 to celebrate this day. The seminar was supported by UGC-CAS programme. The program was organized in two sessions. The morning session was inaugurated by Professor S. R. Shukla Registrar, ICT who shared his views about current global food scenario. Professor Smita Lele in her welcome address highlighted the theme of program and importance of world food day celebrations. Morning session was totally dedicated to students participation in the event, and was conducted at FETD. Another activity of the day was 'Innovative high fibre recipe development competition'. The contestants were given a challenge to develop a high fibre recipe out of a set of ingredients provided to them. Total six groups participated in the contest and made a variety of mouth watering recipes from the limited ingredients supplied to them. First prize went to the group of M.Tech. Food Biotech students from ICT (Pranita Joshi, Hema Rajwani, Narinder Kaur), and second prize was won by Ph.D. students group of ICT (Sandhya Iyer, Ashwini Tilak, Chetana Deshpande). The sensory analysis of product was done by Dr. Vandana Patravale, Mrs. Sheetal Chavan, Ms. Sanghamitraa Bhavsar, ICT. The afternoon session included memorial lectures and presentation of Dr.K.U.Naram Awards, V.B. Chitale and B.A. Parvatikar Award as part of World Food Day celebrations that was held at the Central Institute for Research on Cotton Technology, Matunga.

- **ACTREC's Open Day 2011**

ICT, FETD M.Tech. (FBT) was invited by ACTREC for open day visit at Kharghar, Navi Mumbai campus on Dec 1, 2011. The students were accompanied by Dr. Shalini Ghodke for that visit.

The day in ACTREC started with poster presentations which gave the students a good insight of the work that is being carried out in the area of cancer. Poster presentation was followed with lab visits for which two volunteers were assigned to co-ordinate. During our lab visit the team happened to visit following labs:

1. Ray Lab: Working in the area of ovarian cancer
2. Instrumentation Lab: Centrifuge, Ultrasonic cell disruptor, Dual beam spectrophotometer, Microplate absorbance reader.
3. Imaging Lab
4. Simulator
5. Animal Lab
6. Animal Imaging Facility
7. Proteomics and MS facility

Lab visit gave a good exposure of the work that is being carried out there. The visit to ACTREC was quite informative. This visit was coordinated by Professor S.S Lele and Dr. Shalini Arya.

- **Women's Day Celebration 2011**

The Institute of Chemical Technology celebrated International Women's Day on March 7, 2012.The entire programme 'LAVANYA' was based on 'Empowerment of Women'. Eminent lady professors of ICT like Professor Smita Lele, Professor R.V. Jayaram, Dr. Jayshree Nagarkar and Mrs. Rita graced the function with their esteemed presence. Different media were used to convey the theme. After the Vice Chancellor of ICT, Professor G.D. Yadav inaugurated the function; the programme was initiated with a thought-provoking speech by Rama Kulkarni, a T.Y student. The atmosphere buoyed up with Nupur Rathi and Rohini Tanksale (M.Chem students) singing a famous, ever-inspiring melody from 'Roja' in their dulcet voices. This was followed by a sombre skit in Marathi named 'stree', which highlighted the major hurdles encountered by a modern Indian woman today and her resolution to overcome them with dignity. The play, with a brilliant script and heartfelt performances by the students, left an ever-lasting impression on the audience. An instrumental jugalbandi performed by Shreeya Ravisankar and Aditi Suresh (both T.Y students) filled the air with varying musical notes followed by Dipesh Suvarna, a T.Y.B.Pharm student presenting 'The Feminine Timeline'. The audience was in for a pleasant surprise as Dr. Jayshree Nagarkar amazed everyone with her impromptu recital of a famous Marathi poem. Mrs. Rita shared her words of wisdom with the students admiring the strength that a woman possesses and her divine power. Professor Lele concluded the programme with her powerful words emphasizing on sacrifice and relations and how they should be managed by a working woman, thereby signing-off on a very positive note. The guests appreciated the sincere efforts put in by the whole team involved in organizing the Women's Day programme. The team was motivated and lead by the Ladies Representative of ICT, Kalyani Malpure, a T.Y.B.Tech (Foods) student, who played a phenomenal role in making the programme a roaring success. The function proceeded with another wonderful poetry recital by Shilpa Samant, a T.Y.B.Tech (Foods) student, depicting the uniqueness and special feeling of being a woman.

PROUD TO BE A WOMAN

A few moments before my existence
Gracing the beauty of human earth
I looked into the All-Mighty's eyes
And asked him the fate of my birth.

'I want you to be strong,' he told me
'A little more than just mere human'
Before I realized what he meant
He blessed me – 'be born a woman'.

'Spread happiness with your smile
Share love with your selfless care
You are sensitive, emotional and yet
Bestowed upon with inner strength to bear.'

'You are a daughter, foremost
The apple of your daddy's eye
Mom's pride, who always wonders
When u marry, would she be happy or would she cry?'

'You are then a caring sister
A guardian, a true friend
Innocence is what characterizes you
As you shower your love, no end.'

'And then a handsome price enters your life
You transform into a beautiful wife
A new family, anew responsibility
But before you realize, it has become your life.'

'The most important role lies ahead
I give you the power, above every other
You are God then as you can give life
Embrace the special emotion of being a mother.'

'But be careful, my lovely lady
While striving for the happiness of all
Make sure you remember yourself
Hold your poise high, never let that fall.'

'Be born a woman' – God blessed me again
'for I gift this birth to very lucky few.'
My eyes swelled with pride and dignity
But all I could mutter was a 'thank you'…

- **Third Advisory Committee Meeting 2012**

Third advisory committee meeting of M.Tech.Food Biotechnology (FBT) Course was held on January 10, 2012 at ICT, Mumbai. The agenda for the meeting included the presentation by Dr. Laxmi Ananthanarayan, coordinator of M.Tech.FBT course on the progress of the M.Tech. FBT course. Many useful suggestions, by the advisory committee members were given. Following are the members of the advisory committee that were present for the meeting: Professor G. D. Yadav, Dr. Suman Govil, Dr. Laxmi Ananthanarayan, Professor Anand Patwardhan, Professor K. G. Akamanchi, Professor S. S.Lele, Dr. U. S. Annapure, Dr. Shubhada Nayak, Dr. S. K. Samant and Dr. Bina Desai.

- **Industrial Visit to Central Institute of Fisheries Education (CIFE)**

On February 14, 2012 the M.Tech.(FBT) Students of Sem-II along with Dr. Venugopal Menon, Visiting faculty for Marine Biotechnology, visited The Central Institute of Fisheries Education, Versova, Mumbai. It was an opportunity to learn about various activities of CIFE, namely education initiatives, Research activities and academic programmes. The students got an insight into various facilities of CIFE, such as Marine fishing vessels, National library & fish farms. Research activities or various departments, such as fish gemomics and biotechnology, fish physiology, biochem and pharmaceuticals and fish pathology were discussed. Students also visited the fish processing and instrumentation laboratory. Several industry aspects of marine biotechnology were also discussed.

- **Release of Book on "Indian Women Scientists"**

To commemorate the International Year of Chemistry 2011 and 100th anniversary of the Nobel Prize awarded to Madame Marie Curie, ICC brought out a book titled "Indian Women Scientists". This book is a compilation of articles written by Indian Women Scientists which were published in various issues of CHEMICAL NEWS, the monthly Journal of ICC. Professor S.S. Lele's article "Women in science; yesterday today and tomorrow" was the first in the book.

- **Personnel Trained**

Students from various institutes visited the FETD. A Departmental tour to various labs was organized by our faculty. Food processing equipments and other facilities were shown to them. The details of the institutes and number of students who visited the Department are given below.

S.N.	Name of the institute	Date of Visit	Background of the students	No. of students
1	Dr.Bhanuben Mahendra Nanavati College of Home Science, Matunga	November 01, 2011	M.Sc. (Food Science and Quality Control)	40
2	ICT, Matunga(ACTREC's Open Day 2011)	November 02, 2011	M.Tech.(Foodbiotechnology)	10
3	Ruia College, Matunga and Nirmala Niketan College of Home Science	March 02-03, 2012	M.Sc. (Botany)	40

Annexure D

ACKNOWLEDGEMENT

We thankfully acknowledge the following Industries and Institutes for accommodating our Food Engineering and Technology students for summer training.

IN-PLANT TRAINING: T. Y. B. TECH (FOOD ENGG. & TECH.) MAY-JUNE-2011

Sr. No.	Name	Company For IPT	Place
1	Agarwal Harshit	Vista Foods	Taloja
2	Chandra Tanay	Modern Foods Ltd.	Goregaon
3	Chauhan Youthika	Cadbury India Ltd.	Thane
4	Gawde Chinmaya	Pawal Canning	Ratnagiri
5	Giri Bhagyashree	Vista Foods	Taloja
6	Gurav Vinay	Pepsico	Wada
7	Indalkar Prashant	General Mills	Vikhroli
8	Jayakar Neha	General Mills	Vikhroli
9	Kamath Neeraj	Raptakos	Thane
10	Kharat Mahesh	Pawal Canning	Ratnagiri
11	Patil Monali	Mapro Foods	Mahabaleshwar
12	Phalak Rohit	Modern Foods Ltd.	Goregaon
13	Purohit Anuj	Modern Foods Ltd.	Goregaon
14	Rathi Shruti	Raptakos	Thane
15	Jagani Ridhi	Cadbury India Ltd.	Thane
16	Bawa Pratima	Mapro Foods	Mahabaleshwar
17	Nikte Devashish	-	-
18	Kulkarni Pallavi	Vistan Foods	Taloja
19	Rathod Pankaj	Modern Foods Ltd.	Goregaon

IN-PLANT TRAINING: T. Y. B. TECH (FOOD ENGG. & TECH.) MAY-JUNE 2012

Sr. No.	Name	Company For IPT	Place
1	Nisharg Golash	Sensient India Pvt Ltd	Andheri
2	Rishabh Barguzer	Mother Dairy Unit	Delhi
3	Shreya Sahatrabudhe	General Mills	Vikhroli
4	Shreeya Ravishankaran	General Mills	Vikhroli
5	Radha Mantri	Jain Irrigation Systems	Jalgaon
6	Shaila Nayak	Parle Products Pvt Ltd	Vile Parle
7	Kaji Mushtafa	Cadbury India Limited	Pune
8	Swapnil Mali	Cadbury India Limited	Pune
9	Shilpa Samant	Cadbury India Limited	Thane
10	Krutika Invalley	Cadbury India Limited	Thane
11	Sachin Aher	Mapros	Panchgani
12	Noopur Gosavi	General Mills India Private Limited	Nashik
13	Kalyani Malpure	General Mills India Private Limited	Nashik
14	Aditi Phalak	Tetra Pak India Private Limited	Pune
15	Nikhil Kulkarni	Mapro Foods Pvt Ltd	Wai
16	Shriraj Tatte	Parle Products Pvt Ltd	Vile Parle
17	Haran G.	Britannia Industries Ltd	Chennai

We would also like to thank the following bodies for their generous support through donation

DONATIONS

Sr. No.	Name of the Company/Person	Amount(Rs.)
1	AFST, Mumbai Chapter	10,00000/-
2	Dr. Supriya Saptarshi	2000/-
3	Dr. Nilesh Amritkar	2200/-

Annexure E

MAJOR GRANTS RECEIVED IN THE LAST FIVE YEARS

S.N.	Sponsoring Agency	Amount / Year	Title
1.	UGC	Rs. 7 lakhs	Augmenting of research facilities to further facilities in research work under the scheme of UGC-BSR One time grant
1	UGC	Rs.30 lakhs, 2009	Infrastructures refurbishment
2	UGC	Rs.100 lakhs 2008-2013	UGC CAS Phase – I
3	DBT	Rs. 148 lakhs 2008-2011	M.Tech (Food Biotechnology) course
4	UGC	Rs. 30 lakhs, 2008	Infrastructures refurbishment
5	UGC	Rs. 20 lakhs, 2007	Infrastructures refurbishment
6	World Bank (TEQIP)	Rs.15 lakhs 2007-2008	Service to society
7	Rajiv Gandhi Science and Technology Commission (RGC)	Rs. 189 lakhs 2007-2012	Preservation and processing of fruits and vegetables using sustainable technologies
8	Ministry of Food Processing Industries, New Delhi	Rs. 48 lakhs 2006-2011	Creation of infrastructure facilities for existing B.Tech. M.Tech. and Ph.D. (Tech) courses in Food Technology
9	UGC, New Delhi	Rs.12 lakhs 2006-2009	Studies in acrylamide formation in traditional Indian processed foods

F.Y.B.Tech.(Food)

Final Y.B.Tech.(Food)

S.Y.B.Tech.(Food)

M.Tech 1St Year Food

T.Y.B.Tech.(Food)

M.Tech. 2nd Year Food

Photographs

M.Tech. 1st Year Food biotech

M.Tech. 2nd Year Food biotech

Research Group Photo

Bottom row (L-R): Supriya Raut, Heena Shah, Professor Smita Lele, Narinder Kaur,
Middle row (L-R): Harshali Bandekar, Shanooba Palamthodi, Azza Silotry, Shruti Baadkar, Nupur Nagavekar
Top row (L-R): Amol Mali, Anupam Bhagat, Kunal Rati, Reena Machamangalath, Dhiraj Gohil, Deepak Kadam

Bottom row (L-R): Shilpa Jayakar, Ashwini Tilak,Sandhya Iyer,Yogita Chavan, Professor. Rekha Singal, Swati Jadhav,Devshri Bhotmange
Middle row (L-R): Chetana Deshpande, Nirali Shah, Apoorva Gupta, Sneha Dhar, Amruta Bawane
Top row (L-R): Parag, Sandip Bankar, Ganesh Vidhate, Chirag Desai, Shirish Harde, Sandip Choudhari

Research Group Photo

Bottom row (L-R): Roji Waghmare, Manisha Jadhav, Shraddha Digole, Dr. U.S. Annapure, Suprama Datta, Tilay Ashwini
Middle row (L-R): Richa Arora, Madhavi Wagh, Swarali Hingse, Vedprakash Surve, Prakash Hirpara
Top row (L-R): Onkar Waingankar, Rahul Rathod, Anu Verma, Suheel, Vishal Revankar, Kishor Nale

Bottom row (L-R): Neha Shrivastava, Hema Rajwani, Dr. Laxmi Ananthanarayanan, Shital Giri, Bincy Bhaskar
Middle row (L-R): Rati Gupta, Pranita Joshi, Shaila Sonawane, Anuja Kulkarni, Mugdha Dabir
Top row (L-R): Shafique, Navneet Satpute, Sudarshan Narwade, Vivek Jain, Yogesh Gat, Sumit Pande

Bottom row (L-R): Sheetal Chauhan, Dr. Shalini Arya, Pavitra Kumar
Middle row (L-R): Sachin Sonawane
Top row (L-R): Ashish Waghmare, Ashish Choudhari, Shrinivas Deshmukh, Pandurang Marpalle

DEPARTMENT OF

OILS, OLEOCHEMICALS & SURFACTANTS TECHNOLOGY

First Row Left to Right

Prakash M. Bhate
B.Sc. (Tech), Ph. D.
I/c, Head of the Department

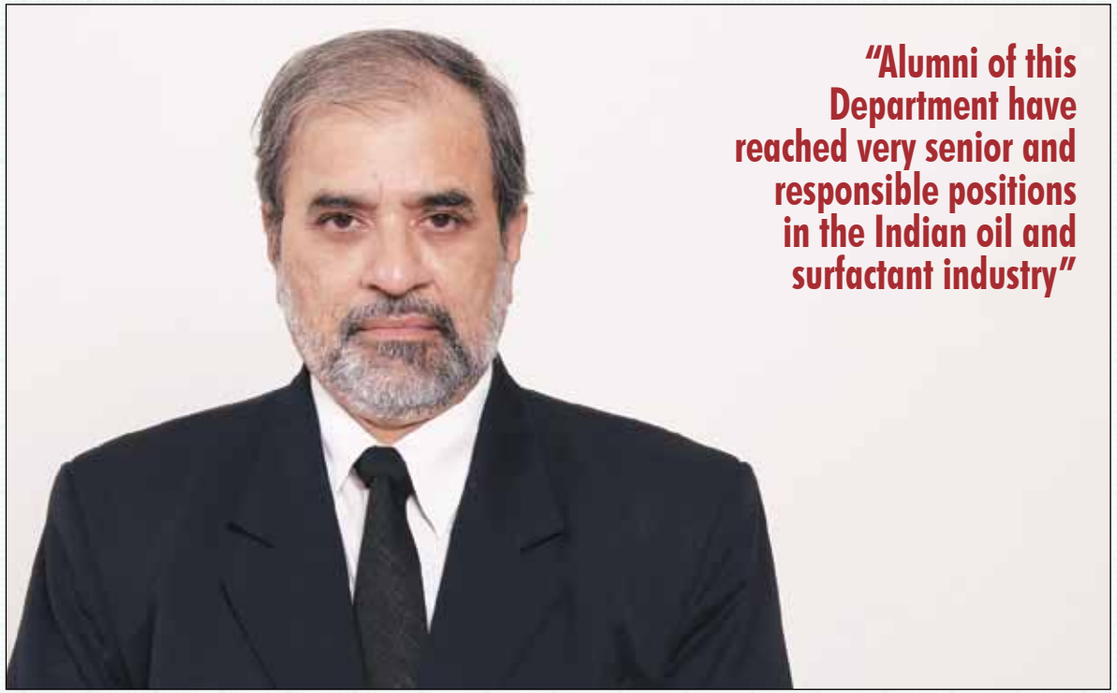
D. N. Bhowmick
B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)
Professor and Dean - Academic Programmes

Second Row Left to Right

S. A. Momin
B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)
Professor and Head of Department

A. P. Pratap
B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)
Assistant Professor

J. S. Waghmare
B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)
Assistant Professor



Professor Prakash M. Bhate

B.Sc. (Tech), Ph. D.

I/c, Head of the Department

This Department was started as Division of Oils, Fats and Waxes in 1943 offering a 2-year course B.Sc. (Tech.) [Technology of Oils, Fats and Waxes] after B.Sc. (Chemistry). The duration of this course was increased to 3years from 1965. In 1998, this Division was renamed as Division of Oils, Oleochemicals and Surfactants. The undergraduate course was changed to a 4-year course, namely B. Chem. Tech. [Technology of Oils, Oleochemicals and Surfactants]. Students are admitted on the basis of MHCET and AIEEE after 12th Grade. The course is a combination of theory, practicals, seminars, inplant trainings, industrial visits and project work. The course syllabus has been designed keeping in mind the requirement of the industry and international institutions. It is updated from time to time. Nearly 30% of our undergraduate students choose to pursue further education in top most universities abroad. Some of them opt for jobs in the edible oils, surfactants, cosmetics, perfumery, paints, and related industries. A few of them start their own industries. Students are generally well placed before the completion of their graduate course. The Department also offers a Post Graduate and Doctoral Program. The Department has done pioneering work in the field of Oil Technology. From the time of its inception, faculty members have maintained a close interaction with industry and have been associated with the development of the oil industry. Several short and long term projects instituted by sponsoring bodies for process/product development at this Department have been supervised by faculty as part of their routine research activity. Alumni of this Department have reached very senior and responsible positions in the Indian oil and surfactant industry.

The Department has excellent facilities for research and is equipped with advanced instruments such as: Gas Chromatograph GE17A. Gas Chromatograph-4890D, UV-Spectrophotometer, Automatic Tensiometer, Karl Fischer Titrino, HPLC, HPTLC, Spray Dryer LSD-48, Lab Pervaporation Unit, Glycerol Evaporation pilot plant, Toilet Soap Plant, Refining Plant, Filtration Plant, High Pressure Autoclave, Short Path Distillation Unit, Batch Solvent Extraction Plant, Turg-O-Tometer, Rotary Vaccum Evaporator, CEC Biodegradability test, Brookfield Viscometer, Pour Point Apparatus, Shear Stability Testing Unit, Rancimate.

Major thrust research areas are:

- Edible oils and their products
- Oil seed processing and Utilisation
- Tribology of Oils and Fats
- Biodegradable Lubricants and Specialty Products
- Natural Products
- Surfactants and Applications
- Perfumery and Cosmetics

D. N. Bhowmick

B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)

Professor and Dean - Academic Programmes

Subjects taught during 2011-12 :
Biochemistry, Advances Advances in Technology of Oils & Fats

Research interests :
Separation Processes, Membrane Technology, Novel surfactants

Number of research students :
Ph.D. (Tech.) – 01
Ph.D. (Sc.) - 02

Number of research publications :
International- 07
National- 01

Number of sponsored projects :
Private-01

Professional Activities :
- "Life Member" of Oil Technologists' Association of India - Western Zone.
- "Life Member" of Alumni Association of UDCT

S. A. Momin

B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)

Professor and Head of Department

Subjects taught during 2011-12 :
Cosmetic Science I & II, Analysis of surfactants, Processing of Soaps Detergents, Oleochemicals and glycerin, Advance Chemistry of fats and fatty acids production and applications of soaps, Surfactants and detergents, Essential oils and their applications

Research interests :
Nutraceuticals, surfactants, natural products,
Cosmetics and perfumery

Number of research students :
Ph.D. (Tech.) - 01
M.Tech. -02

International publication:
01

Professional Activities:
- "Life Member" of Oil Technologists' Association of India - Western Zone."Life Member" of Alumni Association of UDCT
- Life member of Indian Society of Oilseed Research, Hyderabad
- Member of American Chemical Society, USA

A. P. Pratap

B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)

Assistant Professor

Subjects taught during 2011-12 :
Technology of Oil and Fat Production, Processing of Oil Bearing Materials, Processing of Oils, Fats and Waxes, Fat Based Products, Cosmetics and Perfumery, Processing of Oleochemicals and Cosmetics, Processing of Soaps, Detergents, Oleochemicals and glycerin, Triboapplication Laboratory, Waxes, Lubricants and Greases, Technology of Fat Based Products

Research interests :
Tribology of oils and fats, Lubricants, Additives and Speciality products, Biosurfactants

Number of research students :
Ph.D. (Tech.) - 01
Ph.D. (Sc) – 02
M.Tech. -06

Number of research publications :
International- 07
National- 01

Indian patents filed :
1313/ MUM/ 2010:Process for production and purification of Sophorolipids
1314/ MUM/ 2010: Process for production and purification of Rhamnolipids

Professional Activities:
- "Hon. Jt. Secretary" of Oil Technologists' Association of India - Western Zone.
- "Secretary", Department of Oils, Oleochemicals and Surfactants Technology, UICT.
- "Life Member" of Oil Technologists' Association of India – Western Zone. "Life Member" of Alumni Association of UDCT
- "Life Member" of Indian Society for Surface Science and Technology (ISSST)
- "Life Member" of Indian Association Nuclear Chemists' and Scientists (IANCAS)

J. S. Waghmare

B. Sc. (Tech), M. Sc. (Tech), Ph. D. (Tech)

Assistant Professor

Subjects taught during 2010-11 :
Analysis of oils and fat production Technology of edible fat production

Research interests :
Nutraceuticals, Application of surfactant, Cosmetics, Perfumery, Enzymology

Number of research students :
M. Tech. – 2

Number of research publications :
National- 2

Professional Activities:
- Member of Oil Technologist Association of India
- Member of Indian society for surface science and Technology
- Member of American oil chemist society
- Member of Society of Chemical Industry, UK

Support Staff

Smt. V.M. Patil
Sr. Tech. Asstt.

Shri A.B. Jogi
Jr. Analyst

Shri S.D. Mahadik
Sr. Laboratory Assistant

Shri S. S. Dhadve
Laboratory Assistant

Shri R.L. Kalmabate
Laboratory Attendant

Shri S.A. Parab
Laboratory Attendant

UNDER GRADUATE (SEMINARS)

No.	Name of Student	Seminar Topic	Guide
1.	KuchekarChetan	Effluent treatment in petroleum industry	Professor D.N.Bhowmick
2.	KalekarMangesh	Catalytic Conversion Processes	Professor D.N.Bhowmick
3.	BharadwajNandini	Pollution control and effluent treatment in edible oil industry	Professor D.N.Bhowmick
4.	Deshmukh Vishal	Control and influence of trans fatty acids in vanaspati	Professor D.N.Bhowmick
5.	GhoshSoumyadeep	Energy Conservation in Vegetable Oil and Surfactant Industries	Professor S.A. Momin
6.	PansareAjeet	Structural properties of surfactants	Professor S.A. Momin
7.	Gupta Pramendra	Enzymatic modification	Professor S.A. Momin
8.	GulgiAshish	Effluent treatment and Pollution control in surfactant industry	Professor S.A. Momin
9.	BandekarAniket	Refining of oils	Professor S.A. Momin
10.	RathiVaibhav	Utilization of lubricant oil waste	Dr. A. P. Pratap
11.	SwamySupriya	Water conservation in oil and surfactant industry	Dr. A. P. Pratap
12.	NayakPurnendu Kumar	Bioremediation	Dr. A. P. Pratap

UNDER GRADUATE (PROJECTS)

No.	Name of the Student	Topic	Guide
1.	RathiVaibhav	Upgradation of Frying oils	Professor D. N. Bhowmick
2.	BandekarAniket	Development of neem oil based alkyd system	Professor D. N. Bhowmick
3.	BhardwajNandini	Synthesis and testing of linseed based high solid alkyd resins	Professor D. N. Bhowmick
4.	NayakPurnendu Kumar	Biolubricants with EVA and SBS	Professor S.A. Momin
5.	Deshmukh Vishal	Benzyl alcohol esters of fatty acids	Professor S.A. Momin
6.	Gupta Pramendra	Enzymatic interestrification of oil blends	Professor S.A. Momin
7.	GulgiAshish	Vegetable oil emulsions	Professor S.A. Momin
8.	PansareAjeet	Refining of soybean oil	Professor S.A. Momin
9.	KuchekarChetan	Fat based emulsions	Professor S.A. Momin
10.	Swami Supriya	Purification of glycerin, byproduct obtained from biodiesel industry	Dr. A. P. Pratap
11.	KalekarMangesh	Lube oil and additives	Dr. A. P. Pratap
12.	GhoshSoumyadeep	Enhanced oil recovery using surfactants	Dr. A. P. Pratap

POST GRADUATE STUDENTS' PROJECTS

No.	Name of Student	Topic	Supervisor
1.	YeolePradnya	Studies in Surfactants	Professor S.A. Momin
2.	Abhichandani Bharat	Studies in Liquid Soaps	Professor S.A. Momin
3.	GhadageSmita	Flavor and its applications	Professor S.A. Momin
4.	George Rikku Sarah	Study of essential oils, its properties and application	Professor S.A. Momin
5.	WaykoleChetan	Studies in Branched Fatty Mateials Fatty Materials for Tribo Applications	Dr. A. P. Pratap
6.	Sheikh Md. Nabeel	Development of surfactant based drug delivery system	Dr. A. P. Pratap
7.	VirulkarAnkita	Synthesis and applications of oleochemicals from castor oil	Dr. A. P. Pratap
8.	Chaudhary Ram Chandra	Waste water treatment in vegetable oil industry	Dr. J.T. Waghmare

Ph.D. (TECH.)

No.	Research Scholar	Previous Institution	Project	Supervisor
1.	BhangaleAkash	LIT, Nagpur	Microbial production & isolation of biosurfactants	Dr. A.P. Pratap
2.	Nikhil Shirsat	ICT	Synthesis and formulation of speciality chemicals and their applications	Professor S.A. Momin
3.	SushantaWadekar	ICT	Studies in Biosurfactants from renewable resources	Professor D.N. Bhowmick
4.	ArunJogi	ICT		Professor D.N. Bhowmick

Ph.D. (SCIENCE)

No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Phatangare Supriya Kishor	Pune University	Synthesis and application of glycerol based chemicals	Dr. A.P. Pratap
2.	Patil Pramod Dagajirao	North Maharashtra University, Jalgaon	Structural Modification of Fatty Materials	Dr. A.P. Pratap
3.	Sharmishtha Khalkar	Pune University	synthesis of performance boosting chemicals from nontraditional sources	Professor D. N. Bhowmick
4.	NayanaSarode	Mumbai University	Studies in the preparation &characte-rization of branched chain alcohols	Professor D. N. Bhowmick

M. TECH.
SUPERVISOR: DR. A. P. PRATAP

No.	Research Scholar	Previous Institution	Project
1	WayluleChetan	UDCT, Jalgaon	Studies in Branched Chain Fatty Materials for Triboapplicaions
2	ShaikhNabeel	UDCT, Aurangabad	Studies in Surfactants Based Drug Delivery Systems
3	DombeSushil	Shivaji University	Studies in Mannosylerythritol lipids from Industrial Waste Streams
4	Gaikwad Anil	Marathwada University	Studies in Extraction of Essential Oils
5	Khan Nishat	BCP, Mumbai	Castor Oil Based Fluids
6	VirulkarAnkita	LIT, Nagpur	Studies in Synthesis and Applications of Oleochemicals Derived from Castor Oil

GOVERNMENT AGENCIES

No.	Sponsors	Title	Duration	Total Amount (Rs.)	Principle Investigator	Research Students
1.	ITC LIMITED, Bangalore	Studies in Preparation and Characterization of Guerbet Reaction products	2008 – 2010 (2 Years)	21,00,000/-	Professor D. N. Bhowmick	Mrs. Nayana Sarode
2.	Department of Bio-technology, New Delhi	Studies in Fermentative Production and isolation of Value Added Intermediates and Biosurfactants by Utilization of Economical and Widely Available Carbon Sources	2007 – 2010 (3 Years)	49,95,000/-	Dr. Amit P. Pratap Co-investigators: Prof D. N. Bhowmick, Professor A. M. Lali	Mr. Sushant Wadekar, Mr. Sachin Patil

National and International Collaborations

PUBLICATIONS

No.	TITLE AND AUTHORS	JOURNAL	Vol. No.	PAGES	YEAR
1.	Study of Glycerol and Sweet Water as a Carbon Source for Production of Rhamnolipids by Naturally Occurring Strains of Pseudomonas aeruginosa (ATCC 10145 and ATCC 9027) S. D. Wadekar, S. V. Patil, S. B. Kale, D. N. Bhowmick, A.M. Lali& A. P. Pratap	Tenside Surfactants Detergents	47:4	238-242	2010
2.	Application of Neem and Karanja Oil as Natural Pesticide Microemulsion Systems S. Ghosh, D N Bhowmick& A P Pratap	Tenside Surfactants Detergents	47:6	369-375	2010
3.	Study of Glycerol Residue as a Carbon Source for Production of Rhamnolipids Pseudomonas aeruginosa (ATCC 10145) S. D. Wadekar, S. V. Patil, S. B. Kale, D. N. Bhowmick, A.M. Lali& A. P. Pratap	Tenside Surfactants Detergents	48:1	16-22	2011
4.	Control Release Mechanism of Fragrances by V. Magar, N. Bhargav, and S. A. Momin	Cosmetics & Toiletries	125:8	42-49	2010
5.	Comparative Study Effect of Surfactant-Polymer Interaction on Properties of Alkyl Polyglucosides and Alpha Olefin Sulfonate by P. Yeole and S. A. Momin	Journal of surfactants & detergents	-	-	2011
6.	Study of Glycerol and Sweet Water as a Carbon Source for Production of Rhamnolipids by Naturally Occurring Strains of Pseudomonas aeruginosa (ATCC 10145 and ATCC 9027) S. D. Wadekar, S. V. Patil, S. B. Kale, D. N. Bhowmick, A. M. Lali& A. P. Pratap	Tenside Surfactants Detergents	47:4	238-242	2010
7.	Application of Neem and Karanja Oil as Natural Pesticide Microemulsion Systems S. Ghosh, D. N. Bhowmick and A. P. Pratap	Tenside Surfactants Detergents	47:6	369-375	2010
8.	Study of Glycerol Residue as a Carbon Source for Production of Rhamnolipids by Pseudomonas aeruginosa (ATCC 10145) S. D. Wadekar, S. V. Patil, S. B. Kale, D. N. Bhowmick, A.M. Lali& A. P. Pratap	Tenside Surfactants Detergents	48:1	16-22	2011

In-house Faculty Responsibilities

PROFESSOR D. N. BHOWMICK

- Dean

PROFESSOR S. A. MOMIN

- Department of Oils, Oleochemicals and Surfactants Technology
- Teaching graduate and postgraduate courses.
- Supervision of research projects and seminars for Undergraduate and Postgraduate courses
- Counseling students,
- Placements of students

DR. A. P. PRATAP

- Secretary, Department of Oils, Oleochemicals and Surfactants Technology
- Member, Admission Committee
- Member, Web Committee
- BOG Nominee, UDCT Alumni Association
- Placement officer, Department of Oils, Oleochemicals and Surfactants Technology
- Co-ordinator, TEQIP Phase II for Oils Department

DR. J. S. WAGHMARE

- Member, Library Committee

Seminars/Lectures/Conferences/Symposia/Workshops/ Summer or Winter Training Schools attended/Oral or Poster Presentations

PROFESSOR D.N. BHOWMICK

- 'Nontraditional Oils as Feedstock for Production of Microbial Surfactants' by S. D. Wadekar, S. B. Kale, A. M. Lali, D. N. Bhowmick& A. P. Pratap at International Seminar & Expo on 'Oils, Fats & Oleo Chemicals: Food Security, Green Energy & Environment' during 3-5 December, 2010 at Inter Continental EROS, Nehru Place, New Delhi 110 010
- "Oleochemicals as Renewable Resources for Synthesis of Performance Booster Additives for Lube Oil Base Stock" S. R. Khalkar, D. N. Bhowmick and A. P. Pratap at International Seminar & Expo on "Oils, Fats & Oleo Chemicals: Food Security, Green Energy & Environment" during 3-5 December, 2010 at Inter Continental EROS, Nehru Place, New Delhi – 110 010
- "Triboapplications of Guerbet Alcohol Derivatives" C. S. Waykole, N. M. Sarode, D. N. Bhowmick and A. P. Pratap at at International Seminar & Expo on "Oils, Fats & Oleo Chemicals: Food Security, Green Energy & Environment" during 3-5 December, 2010 at Inter Continental EROS, Nehru Place, New Delhi – 110 010
- Production of Novel Biosurfactants (Rhamnolipids and Sophorolipids) using Glycerol and Sweet Water as Economical Carbon Source" S. D. Wadekar, S. B. Kale, A. M. Lali, D. N. Bhowmick and A. P. Pratap at 62nd Indian Pharmaceutical Congress 2010 on December 19-21, 2010, Manipal, Karnataka.

DR. J. S. WAGHMARE

PRESENTATIONS:

- Evaluating the Importance of Leu403 in Maintaining the "V" Shaped Conformation of ThiaminDiphosphate in Benzoylformate Decarboxylase, The Midwest Enzyme Chemistry Conference, Northwestern University, USA, October 16, 2010
- Stability of Oil Soluble Micronutrients Enhanced by Spray Drying Method, 65th Annual Convention, International Seminar and Expo, New Delhi, India, 3-5 December 2010
- on Spice Oleoresin: An Alternative for Synthetic Additive, International conference on Innovation on Food Processing & Ingredients towards Healthy India, ICT, Mumbai, 3rd January 2011

WORKSHOP ATTENDED:

- Scientific Writing Workshop for International Researchers, Riley Outpatient Center, IUPUI, Indiana, USA. 8th October 2010.

SEMINAR PRESENTED:

- Studies in nutraceuticals and their application", Department of Chemistry, Indiana University Purdue University Indiananpolis, USA, 25th March, 2010.

PROFESSOR D. N. BHOWMICK

1.0: BRANCHED CHAIN ALCOHOLS AS RAW MATERIAL FOR SURFACTANTS:

Fatty alcohols can be produced via natural and synthetic routes. Fatty alcohols (≥ C12) are used for surfactant synthesis. The major portion of these fatty alcohols is manufactured by Ziegler process, oxo process and catalytic hydrogenation of fatty acid esters. The first two are based on petroleum feedstock and the third one is based on vegetable oil as a source. For preparation of branched chain alcohol many processes are used.In the proposed work, Guerbet reaction is being investigated. In 1899, Marcel Guerbet pioneered the basic chemistry of elongating alcohols by condensation. The reaction produces a unique class of alcohols i.e., 2- alkyl alkanols known as Guerbet alcohol.

Marcel Guerbet synthesized β-alkylated alcohol. Guerbet reaction involves synthesis of regiospecific, β-branched hydrophobe that introduces high purity branching into molecule. The reaction involves conversion of primary alcohol into β-alkylated dimer with loss of a water molecule in presence of catalyst at elevated temperatures .The reaction products i.e. Guerbet alcohols find applications where liquidity and lubrication are important with little breakdown by oxidation. Based on the chain length of Guerbet alcohols, their applications are extended in specialized areas like cosmetics, pharmaceuticals, and textile auxiliaries and as plasticizer for synthetic resins. Preparing the corresponding derivatives, which also find applications in various fields, can extend the utility of Guerbet alcohols.

Guerbet chemistry can also be extended to the synthesis of branched acids. Currently the only branched chain acid commercially used is isostearic acids. β alkylated acids, read Guerbet acids, are not only regiospecific but also provide an option of having varying chain lengths. However, very scanty information is available in literature regarding their synthesis. Their synthesis and studies into physicochemical properties will undoubtedly open up a new frontier in surfactant chemistry.

2.0: BIOSURFACTANTS

Recently from the global viewpoint chemical, pharmaceutical, environmental and petrochemical industries have recognized the potential of living cells in pretreatment of raw materials, processing operations, product development, waste management, energy recycling and conservation. In this context, surfactants are increasingly recognized for their range of uses. Biosurfactants are biologically synthesized surface-active agents produced as metabolic byproducts through microbial transformation of organic substrate. Among the different types of biosurfactants, the glycolipids (e.g. ramnolipids, sophorolipid, mannosylerythritol, surfactin) and polysaccharide lipid complex have broad spectrum of applications. In the production of these biosurfactants, it has been estimated that raw material accounts for about 30% of overall cost, where downstream processing accounts for about 60% cost Therefore further significant improvements in upstream as well as downstream processing by exploring system biology for strain improvement, fermentation engineering, integrated product recovery and reactor design are required. Therefore present research is aimed at developing technology that would use waste carbon sources such as used oils, de-oiled cakes etc. for the production of biosurfactants through fermentation. Besides their classical application as emulsifiers of hydrocarbons, they can be used in environmental protection, crude oil recovery, food processing industries, in various fields of biomedicine (antibacterial, antiviral and antifungal), textiles manufacturing, metal treatment, cosmetics, agriculture, paint industries and in paper and pulp processing.

PROFESSOR S. A. MOMIN

1.0: NUTRACEUTICALS:

The goal of achieving an optimal or maximal state of nutrition and health is becoming an increasing challenge with the introduction of many nutraceuticals (1). The increasing interest in nutraceuticals reflects the fact that consumers hear about epidemiological studies indicating that a specific diet or component of the diet is associated with a lower risk for a certain disease (2).

As a result of this, traditional medicines in the form of botanical dietary supplements and nutraceuticals have found a place in healthcare of 21st century.

Nutraceuticals are biologically active phytochemicals that possess health benefits. These may be delivered to the consumer in the form of functional food. Japan is the birthplace of the term 'functional food' (3). The importance of functional foods, nutraceuticals and other natural health products has been well recognized in connection with health promotion, disease risk reduction and reduction in health care costs (4). These products, i.e., functional foods are likely to play a vital role in human health and longevity. The consumption of these products by the vast majority of the public is usually without a medical prescription and/or supervision (5).

Essential fatty acids such as linoleic acid, linolenic acid are considered as nutraceuticals, as they are involved in number of crucial functions in the human body. They are involved in the synthesis of higher chain fatty acids such as Eicosapentaenoic acid (EPA), Arachidonic acid (AA), Docosahexaenoic acid (DHA), which are required for eicosanoid synthesis and regulation of gene expression. They are the precursors of important hormones, such as prostaglandins and control many physiological factors such as blood pressure, cholesterol level and the reproductive system (6). Being so significant, these essential fatty acids come under the category of nutraceuticals.

In order to accomplish the benefits of essential fatty acids through regular diet, functional food can be developed using the same.

The synthetic antioxidants such as TBHQ, BHT, BHA which are used to stabilize these oils are known to have toxic and carcinogenic effects on human health (9). Hence, now a day, preference is given to the natural antioxidants to resolve the problem of autoxidation. The main advantage of using these natural antioxidants is that it does not have a specific limit for its use, whereas the synthetic antioxidants cannot be used above a particular limit. Natural antioxidants such as spices, herbs are also considered as nutraceuticals. Many natural antioxidants such as kalonji seeds, turmeric not only function as antioxidants but also own medicinal benefits. Thus, according to consumer's requirement, these natural antioxidants can be used while formulating functional food.

Thus, it is clear that the functional food prepared using oil containing essential fatty acids and these natural antioxidants is highly nutritious, provided the essential fatty acids remain intact without deterioration and also, the other properties of the functional food leftover unaltered.

2.0: PERFUMERY AND COSMETICS

The preparations of microcapsules of fragrance and flavours using different techniques such as coacervate techniques and spray drying process are used. The microcapsules so obtained are incorporated in cosmetic, toiletries and food products. The perfumed products were studied for stability of perfume and flavoursThe microcapsules were analysed for total oil, surface oil, encapsulation and entrapment efficiency, bulk density and powder particle size .

Surfactants: Surfactants are classified into four main types as:
Anionic surfactants
Amphoteric surfactants
Cationic surfactants
Nonionic surfactants

Most of the surfactants are non biodegradeable and hence causing problems to living beings. Hence the main purpose of research in this field is to develop biodegradable surfactants and their applications for different industries.

DR. A. P. PRATAP

1.0: TRIBOLOGICAL APPLICATIONS OF VEGETABLE OILS:

In the era of modern technology, the gradual change-over from Petroleum based to Vegetable oil based environment friendly lubricants is inevitable. India is a country with vast resources of inedible oils, some of which are derived from plants that grow in the wild. Yet, the development activity on vegetable oil based lubricants in our country is almost non-existent. In this background, it is important that in order to harness the Country's inedible vegetable oil resources towards viable alternative lubricants, development work on products, processes and technologies related to this vital field must be accelerated. It is believed that this department, with its long experience and strong expertise in the field of Vegetable oils, can play an important part towards achievement of this objective by taking on an intensive long term project aimed at standardizing various aspects of this emerging and strategically important technological field.

The essential elements of the future research projects are based on study of the chemistry of alternative raw materials and components for facilitating selection of candidate fluids. Environment Friendly Alternative Lubricants will be formulated using developed base fluids and selected synergistic additives. As an initial step towards achieving the goal, some of the renowned industries are being contacted for the future research funding.

2.0: BIOFUELS OF VEGETABLE OIL ORIGIN:

Fuels derived from renewable biological resources for use in diesel engines are known as biofuels. This could be thought to partly cope up with fuels such ethanol, fatty acid methyl esters popularly known as biodiesel. Chemically, biodiesel is referred to as the mono alkyl esters (methyl or ethyl) of long chain fatty acids or ester-based oxygenated fuels derived from renewable lipid sources. It can be used in compression-ignition (diesel) engines with little or no modifications. Pure biodiesel is biodegradable, nontoxic and essentially free of sulfur and aromatics. An organized program of social forestry can generate enormous benefits to rural areas in terms of employment for collection of seeds and processing. The globalization has opened up opportunities to Indian Oleochemicals industry in an unprecedented measure. The idea is to make the process commercially viable with the specifications as per the ASTM standards. The idea is to make use of some of the cheaper feed stocks like waste frying oil and non edible oils. An organized program of social forestry can generate enormous benefits to rural areas in terms of employment for collection of seeds and processing.

3.0: UTILIZATION OF GLYCEROL OBTAINED FROM BIODIESEL INDUSTRY:

A wide scale introduction of biodiesel has brought to for the supply of glycerol, magnitude of which may likely to question the very economical viability of the oleochemical industry. As on today it is being utilized as one of the component of cosmetics formulations. One of the possible applications is in the field of engine coolants that can be explored. Similarly newer reaction products of the glycerol will be found out in the future research work.

4.0: BIOSURFACTANTS

Recently from the global viewpoint chemical, pharmaceutical, environmental and petrochemical industries have recognized the potential of living cells in pretreatment of raw materials, processing operations, product development, waste management, energy recycling and conservation. In this context, surfactants are increasingly recognized for their range of uses. Biosurfactants are biologically synthesized surface-active agents produced as metabolic byproducts through microbial transformation of organic substrate. Among the different types of biosurfactants, the glycolipids (e.g. ramnolipids, sophorolipid, mannosylerythritol, surfactin) and polysaccharide lipid complex have broad spectrum of applications. In the production of these biosurfactants, it has been estimated that raw material accounts for about 30% of overall cost, where as downstream processing accounts for about 60% cost Therefore further significant improvements in upstream as well as downstream processing by exploring system biology for strain improvement, fermentation engineering, integrated product recovery and reactor design are required. Therefore present research is aimed at developing technology that would use waste carbon sources such as used oils, de-oiled cakes etc. for the production of biosurfactants through fermentation. Besides their classical application as emulsifiers of hydrocarbons, they can be used in environmental protection, crude oil recovery, food processing industries, in various fields of biomedicine (antibacterial, antiviral and antifungal), textiles manufacturing, metal treatment, cosmetics, agriculture, paint industries and in paper and pulp processing.

DR. J. S. WAGHMARE

Worked as Post doctorate: Indiana University Purdue University Indiana, USA, Feb 2011- Sep 2011.

Benzoylformate decarboxylase, isolated from Pseudomonas putida (PpBFDC), catalyzes the nonoxidative decarboxylation of benzoylformate producing benzaldehyde. PpBFDC is a member of the thiamindiphosphate (ThDP)-dependent enzyme family and, like all members, requires ThDP to adopt a "V" shaped conformation for activity. This "V" shaped conformation is energetically unfavorable; however PpBFDC is able to maintain ThDP in this unfavorable conformation with the assistance of a leucine at the 403 position. Other ThDP-dependent enzymes utilize hydrophobic residues such as methionine and isoleucine residue to achieve this conformation. In an attempt to understand the requirements of the position and in order to explore whether other residues could be used for maintaining "V" shape conformation of ThDP, a library was constructed using site-saturation mutagenesis at Leu403. Cell free extracts of mutants were screened for activity. Those mutants which exhibited significant activity were purified, and kinetically characterized under steady state conditions.

Left to Right: Mr. Arun Jogi, Professor D.N. Bhowmick, Ms. Sharmishtha Khalkar

Left to Right: Rikku Sarah, Prof. S.A.Momin, Nikhil Shirsat and Anil Gaikwad

DEPARTMENT OF

PHARMACEUTICAL SCIENCES AND TECHNOLOGY

First Row Left to Right

Pradeep Vavia
B. Pharm., M. Pharm. Ph.D. (Tech)
Professor of Pharmaceutics

Mrs. Archana R. Juvekar
B. Pharm. (Shivaji University),
M. Pharm. (Mumbai), Ph. D. (Tech.) (Mumbai)
Professor in Pharmacology and Physiology.

Mrs. P. V. Devarajan
B. Pharm, M. Pharm, PhD(Tech)
Professor in Pharmacy and Head

K.G. Akamanchi
B.Sc., B.Sc.(Tech.), Ph.D.(Tech.)
Professor of Pharmaceutical Technology.
Dean (RCRM), Department of Pharma-ceutical Sciences & Technology

K. S. Laddha
D. Pharm., B. Pharm. Sci.,
M. Pharm. Sci., Ph.D. (Tech.)
Professor of Pharmacognosy

Second Row Left to Right

Mrs. P. D. Amin
B. Pharm., M. Pharm. PhD (Tech)
Professor in Pharmacy

Mrs. Vandana B. Patravale
B. Pharm. M. Pharm., Ph.D. (Tech.)
Professor of Pharmaceutics

Mrs. Sadhana S. Sathaye
B. Pharm., M. Pharm. Ph.D. (Tech)
Associate Professor in Pharmacy

Mrs. Prajakta Dandekar-Jain
Ph.D. (Tech)
Dr. John Kapoor Assistant Professor in Pharmaceutical Technology and Ramanujan Fellow

Mrs. M. S. Degani
B. Pharm., M. Pharm. Ph.D. (Tech)
Professor in Pharmaceutical Chemistry

Third Row Left to Right

Ratnesh Jain
Ph.D. (Tech)
Ramanujan Fellow

Ganesh U. Chaturbhuj
B. Pharm. (Shivaji), M. Pharm. Sc. (Mumbai),
Ph. D. (Tech.) (Mumbai)
Associate Professor

Vikas N. Telvekar
Ph. D (Tech.)
Assistance Professor

Professor P. V. Devarajan
B. Pharm, M. Pharm, PhD(Tech)
Head of the Department

Mission:
To achieve the best in pedagogy and research, through creation of a dedicated team of faculty and state of art research facility, to develop skilled manpower and innovative cost effective technology to support national healthcare programmes

Vision:
To be a globally recognized premier educational and research centre with world class facilities, adopting international best practices, focused on the integration of science and technology in the areas of Drug Discovery, Drug Delivery, Organic Process Research and Herbal Healthcare Products

Present Scenario

The DPST comprises of the following human resources:

No. of Students: Undergraduates: 207 Doctorates- 114 Masters- 52

No. of Faculty (in place): Professors-08, Associate Professors- 01, Assistant Professor- 04 (01 Ramanujam fellow)

Vacancy: Professor- 02, Assistant Professor- 05

Supporting Staff: 15

Major Research Interests: Design of Drug delivery systems for oral, parenteral, transdermal,nasal, buccal and sublingual, ocular and vaginal drug delivery , Drug design and discovery, Computer Aided Drug Discovery ,Design & Synthesis of drugs drug intermediates and NCE's, , Evaluation of indigenous plants for various pharmacological activities, Extraction and isolation of phytoconstituents, Standardization and stability of herbal drug products, Modification of herbal constituents for synthesis of useful compounds, Bioanalytical method development, Nanotechnology in drug delivery, Protein and nucleic acid delivery, pharmaceutical biotechnology.

Major Instrumental / Processing Facilities: Proton NMR, GC-MS, FT-IR, HPTLC, several HPLCs, GC, UV, DSC, Fluorimeter, Ozoniser, Polarimeter, Parallel Plate Syntesiser and other chemistry related instruments, CADD lab with sophisticated hardwares and softwares for docking, homology modeling, 3D-QSAR and other modules, facilities like parallel synthesizer, hydrogenator, Particle size analyzers, Zeta Sizer, Film coater, Extrusion spheroniser unit, Transdermal permeation apparatus, Freeze driers, Elisa readers, High Pressure Homogenizers, Tablet machines, Dissolution apparatus, Sonicators, Fluidised bed coater cum processors, Dryers, Multi purpose processors for solid and liquid formulations, Facilities for wet and dry granulations, Facilities for bioadhesion testing, facilities for size reduction, Liquid filling machines, Facilities for processing of semi-solid dosage forms, ICH stability testing facilities, Aggregometer, Non-invasive blood pressure measuring instrument, microbiology facility and cell culture facility, incubator shaker, CO2 incubator, inverted microscope, fluorescence microscope, high speed cold centrifuges, freezers, BIOPAC

Achievement in Last Five Years

Major Grants: UGC-CAS, DST-FIST, DBT, AICTE, DAE, DST, ICMR, AYUSH .

Total amount: Rs. 8, 02, 14, 990/-

Research Publications: International: 74
National 14
Patents: 24
Degrees Awarded:
Doctorates: 114
Masters: 52
Bachelors: 207

Major Awards / Honours Received in 2011-12

- Professor Padma V Devarajan received 2011 AAiPS Distinguished Educator and Researcher Award
- Professor Padma V Devarajan received the 2008 Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) Industrial Research Award for Women Scientists(2011)
- Professor Vandana Patravale conferred Fellow of Maharashtra Academy of Sciences award Maharashtra Academy of sciences (2011)
- Dr. V.N. Telvekar received The "Better Opportunities for Young Scientists in Chosen Areas of Science & Technology (BOYSCAST)" fellowship

Year Wise Statistics of Research and Academic Activities

Year	Ph.D.	Masters	Graduates	Publications		Books Chapters/ Patents	Sponsored projects
				International	National		
2007-08	65	39	197	21	08	02/16	34
2008-09	89	45	201	31	25	01/14	39
2009-10	99	49	212	57	12	03/27	35
2010-11	112	50	198	54	11	05/21	35
2011-12*	114	52	207	74	14	02/24	37

*Upto 30th June

COURSES OFFERED IN DPST

Sr.No.	Degree	Comments	No. of seats
1	Bachelor in Pharmacy	AICTE Approval in 2002, 2008(12+4) pattern	30
2	Bachelor in Technology (Pharma)	AICTE Approval in 2002,	18
3	Master in Pharmacy	AICTE Approval in process	17
4	Master in Technology (Pharma)	AICTE Approval in process	1
5	PhD (Tech)	15 UGC SAP fellowshipssince 2007	Minimum 15
6	PhD (Sci)	In Chemistry and Biotechnology	Variable

* At Institute level

P. V. Devarajan

B. Pharm, M. Pharm, PhD(Tech)

Professor in Pharmacy and Head

pv. devarajan@ictmumbai.edu.in,

pvdevarajan@gmail.com

Subjects Taught:

Physiology & Pharmacology Topics in Pharmacology,
Clinical Pharmacy, Biochemistry, Advance recetor Pharmacology.
Pharmacology, Toxicology & Theoraputics, Models for Drug delivery system.
Targetted Drug Delivery, Pharmaceutics, Technology of solid dosage form, Advanced Pharmaceutics, Drug Delivery Systems, Technology of Sterile dosage forms,

Research interests:

- Engineering of nanoparticulate drug delivery systems for cancer and infectious diseases with specific focus on key issues including scale up and commercialization
- Fabrication of nanocarriers by manipulating particle properties including size, surface chemistry or shape for anti-infectives, anti cancer drugs, peptides, proteins and nucleic acids.
- Screening for new targeting ligands.
- Exploring surfactant based innovative self assembled structures for drug delivery application.
- Controlled released Drug Delivery Systems (NDA and ANDA)
- Nasal and sublingual drug delivery as an alternative to parentral administration (injections).

Research students:

Ph.D. (completed) - 02
Masters (completed) – 04
M. Tech. – 01 M. Pharm - 03
Ph.D. (ongoing) – 20
Masters (ongoing) – 03

Research publications:

International- 38
International (this year)- 03
National- Nil
Conference Proceedings – 12
Book Chapter: 01
Patents (applied) 19
(this year) 02
Sponsored projects
Government – 01(completed)
ongoing-03 Prviate - 05

Professional Activities:

- Member at large on the Board of Controlled Release Society (CRS), Inc, USA.
- Chair-CRS- Young Scientist Mentor Protégé committee
- Featured as Indian Women Scientist in Chemical Industry News, June 2011
- Member-CRS-Young Scientist Committee
- Member-CRS- Webinar Committee
- Patron Member-CRS Indian Chapter
- Member, Ad hoc Board of Studies in Pharmacy, University of Mumbai
- Member, Research Recognition Committee in Pharmacy, University of Mumbai
- Member, Board of Studies, SASTRA University, Tamil Nadu
- Referee for Journal of Pharmaceutical Sciences, International Journal of Pharmaceutics, AAPS Pharma Scitech, Drug Delivery, Indian Journal of Pharmaceutical Sciences, , Indian Drugs
- Editorial Board Member, Indian Drugs
- Editorial Board Member, Bionano Frontiers
- Reviewer / referee for projects submitted to Department of Biotechnology, Govt. of India and INDOUSSTF
- Chairman, LIC for affiliation of Pharmacy Colleges, University of Mumbai
- Referee for PhD thesis other Universities, IIT, etc.
- Expert Committee Member for DBT –SBIRI project
- Member Advisory Council, Drug Information Association, India
- Life Member, Indian Pharmaceutical Association
- Life Member, Indian Women Scientists Association.
- Member, Indian Society of Surface Scientists and Technologists.
- Member, Third World Organization of Women in Science

- Life Member, UDCT. Alumni Association
- Registered Pharmacist Maharashtra Pharmacy Council

K.G. Akamanchi

B.Sc., B.Sc.(Tech.), Ph.D.(Tech.)

Professor of Pharmaceutical Technology.
Department of Pharmaceutical Sciences & Technology
kg.akamanchi@ictmumbai.edu.in

Subjects taught:
Pharmaceutical Chemistry, Organic Chemistry, Pharmaceutical Technology,

Research interests:
Development of Novel Methodologies, Hypervalent Iodine Chemistry. Synthesis of Drug & Drug Intermediates, Design and Synthesis of Potential Bioactive Molecules, Protein Isolation and Bioassay

Research students:
Ph.D. (completed) - 34
Masters (completed) – 70
Ph.D. (ongoing) – 13
Masters (ongoing) – 3

Research publications:
International- 71
International (this year)- 7
National- 3
Conference Proceedings - I
Book chapters-Patents (till) -

Sponsored projects:
Government – Nil (ongoing)
Government – 12 (completed)
Private – 1 (Ongoing)

Professional Activities:
- Member BOM, Institute of Chemical Technology, Mumbai
- Member Faculty of Pharmacy, Gujarat Forensic Sciences University, Gandhinagar, Gujarat

P. D. Amin

B. Pharm., M. Pharm. PhD (Tech)

Professor in Pharmacy
pd.amin@ictmumbai.edu.in

Subjects taught:
Lectures: Pharmaceutics, Pharmaceutical Technology, Dispensing Pharmacy, Hospital Pharmacy, Advanced Pharmaceutics
Practical : Biochemistry

Research interests:
- Exploration of Hot Melt Extrusion Technology in Innovative Drug Delivery System
- Development and evaluation of Fixed Dose Combinations (Tuberculosis, Malaria & Diabetes)
- Evaluation of hydrocolloids for emulsification and release retarding properties
- Improvisation Techniques for Manufacture and Evaluation of Solid Dosage Forms
- Release modification designs for drug delivery system
- Design and Fabrication of Pharma machinery (R&D Models)
- Development of Added Functionality Excipients

Research students:
Ph.D. (completed) - 13
Masters (completed) – 50
Ph.D. (ongoing) – 12
Masters (ongoing) – 3

Research publications
International - 20
International (this year) - 3
National- 35
Conference Proceedings -Nil
Book chapters- Patents (till date) ---

Sponsored projects:
Government – Nil (ongoing) - 1
Government – Nil (completed) - 3
Private – (completed) - 10

Professional Activities:
- Fellow of Maharashtra Academy of science.
- Referee, Indian Journal of Pharmaceutical Science, and Drug Dev Industrial Pharmacy
- Referee, Journal of Nanotechnology
- Referee, Journal of Controlled Release
- Referee, Journal of Pharmaceutical Sciences

Ganesh U. Chaturbhuj

B. Pharm. (Shivaji), M. Pharm. Sc. (Mumbai), Ph. D. (Tech.) (Mumbai)

Associate Professor
gu.chaturbhuj @ictmumbai.edu.in

Subjects taught:
Pharmaceutical Analysis Med. Chem. Research interests Computer aided design, synthesis and evaluation of Anti-inflammatory, antibacterial, Anti-leismania agents. Synthesis of intermediates of drugs containing biaryl scaffolds. Synthesis & Characterization of drug impurities and degradation Products.

Research students:
Ph.D. (ongoing) –
Masters (completed) – 01
Masters (ongoing) – 03

Research publications:
International - 01
National -
Book Chapter-

Sponsored projects:
Government – (ongoing) - 02
Private – 1 (ongoing)
Government – 1 (completed)

M. S. Degani

B. Pharm., M. Pharm. Ph.D. (Tech)

Professor in Pharmaceutical Chemistry
ms.degani @ictmumbai.edu.in

Subjects taught:
Pharmaceutical Chemistry, Medicinal Chemistry, Drug Discovery Process and Drug Design, Advanced Medicinal Chemistry I & II, Pharmaceutical Chemistry and Medicinal Chemistry Practicals

Research interests:
CADD assisted design using techniques such as pharmacophore mapping, QSAR, Molecular docking, binding affinity prediction and stereoelectronic feature analysis. Synthesis of libraries of potential bioactive molecules for infectious diseases based on rational drug design using modern techniques including parallel synthesis and microwave assisted synthesis, Process development of drug and drug intermediates, Green chemistry using ionic liquids, biocatalysis, water and microwave assisted synthesis

Research students :
Ph.D. (completed) – 10
Masters (completed) – 36
Ph.D. (ongoing) – 12
Masters (ongoing) – 6

Research publications:
International- 35
International (2011-12) - 11
National - 2
Conference Proceedings - 58

Sponsored projects:
Government – 2 (ongoing)
Private – Nil (ongoing)
Government – 2 (completed)

Professional Activities:
- Fellow of Maharashtra Academy of Science
- Life member of Indian Pharmaceutical Association.
- Life member of Indian Women Scientists Association (AWSA)
- Member of Third World Organization of Women's Association in Science.
- Life member of APTI.
- Life member UDCT alumni association.

Archana R. Juvekar

B. Pharm. (Shivaji University), M. Pharm. (Mumbai), Ph. D. (Tech.) (Mumbai)

Professor in Pharmacology and Physiology.
ar.Juvekar @ictmumbai.edu.in

Subjects taught:
Pharmacology Research interests Study of cardiovascular and allied activities of indigenous plants, neuropharmacological

evaluation of indigenous plants, study of antioxidant and anti-stress activity of indigenous plants, study of hepatoprotective activity of indigenous plants, immunopharmacological evaluation of indigenous plants, antidiabetic potential of indigenous plants study of antioxidants from materials of natural origin.

Research students:
Ph.D. (completed). – 11
Masters (completed) – 44
Ph.D. (ongoing) – 7
Masters (ongoing) – 4

Research publications
International - 25
International (this year) - 3
National - 44
Conference Proceedings – 13
Monograph - 1

Sponsored projects
Government – 2 (ongoing)
Private – 1 (ongoing)
Government – 1 (completed)
Consultancy : -

Professional Activities
(Membership of important Committees):

- Life member of Indian Pharmaceutical Association
- Life member of Indian Pharmacological Society
- Member of Gesellschaft für Arzneipflanzenforschung (GA) Society for Medicinal Plant Research, Germany
- Member of the Editorial Board of Indian Practitioner
- Member of the Editorial Board of APAP.

Prajakta Dandekar Jain

Ph.D. (Tech)
Dr. John Kapoor Assistant Professor in Pharmaceutical Technology and Ramanujan Fellow

Subjects taught
Pharmaceutical Biotechnology, Research interests, Drug Store Management Biotechnology, Pharmaceutical Biotechnology, nanomedicine, 2D and 3D cell culture, pulmonary infections and diseases.

Research students
Ph.D. (completed). –
Masters (completed) –
Ph.D. (ongoing) –
Masters (ongoing) – 1

Research publications
International - 14
International (this year) - 2
National-
Conference Proceedings - 20
Book Chapter - 1
Book - 1

Sponsored projects
Government (ongoing) - 1
Private (ongoing) -
Government (completed) - Nil

Professional Activities:
1. Member of Controlled Release Society, Indian Chapter; Membership of Cultural Committee
2. Member of Controlled Release Society, USA;
3. Junior Member, European Respiratory Society
4. Young Associate, Maharashtra Academy of Science
5. Member Outreach Committee
6. Americal College of Clinical Pharmacology, USA

Ratnesh Jain

Ph.D. (Tech)
Ramanujan Fellow

Subjects taught
Research Methodology, Medicinal Natural Products

Research interests:
Nanobiotechnology, nanoparticles, micelles, drug delivery devices, molecular imaging, infectious diseases and vaccine.

Research students
Ph.D. (completed). –
Masters (completed) –
Ph.D. (ongoing) –
Masters (ongoing) –

Research publications
International-
International (this year)-
National-
Conference Proceedings –

Sponsored projects
Government – (1 ongoing)
Private – (ongoing)
Government – (completed)

Professional Activities:
1. Member of Controlled Release Society, Indian Chapter;
2. Member of Controlled Release Society, USA;
3. Junior Member, European Respiratory Society

K. S. Laddha

D. Pharm., B. Pharm. Sci., M. Pharm. Sci., Ph.D. (Tech.)
Professor of Pharmacognosy
ks.laddha@ictmumbai.edu.in

Subjects taught
Pharmacognosy, Advanced Pharmacognosy , Pharmacognosy

Research interests
1. Technology for extraction and isolation of phytoconstituents:
2. Process development for Aloe vera gel, drink, juice, cosmetics, etc.
3. Standardization and stability of herbal drug products.
4. Technological development for the extraction of herbal drugs.
5. Utilization of herbal constituents as an intermediate for synthesis of useful compounds.
6. Effect of plant growth regulator on medicinal plants.
7. Enhancement of gum output from trees.

Research students
Ph.D. Tech. (ongoing) – 12
Masters (completed) – 50
Masters (ongoing) – 4
Ph.D. (Tech.) - 7
(2 passed out)
M.Tech. - 5
01 (Ongoing) - 2
M.Pharm -03 (Passed out),
04 (Ongoing)

Research publications
International - 20
National- 37
Conference proceedings -

Sponsored projects
Government – 2
Private – 2

Professional Activities:
1. Life Member, Indian Pharmaceutical Association
2. Life Member, Indian Society of Pharmacognosy.

Mrs. Vandana B. Patravale

B. Pharm. M. Pharm., Ph.D. (Tech.)
Professor of Pharmaceutics
vb.patravale@ictmumbai.edu.in

Subjects taught
Pharmaceutics, Cosmeticology, Validation and regulatory affairs, Advanced Pharmaceutics, Drug delivery system I and Drug delivery system II

Research interests
Novel nanocarriers for pertinent areas of national relevance with major emphasis on malaria, cancer and neurodegenerative disorders. Colloidal drug delivery systems including microemulsions and solid lipid/polymeric nanoparticles for solubilization, increase in bioavailability and/or targeting. Medical device development viz. coronary stents, intrauterine devices etc., use of indegenous excipients, cosmeceuticals and modified release dosage forms for all routes of administration.

Research students
Ph.D. Tech. (Completed) – 10
Masters (completed) – 47
Masters (ongoing) – 06
Ph.D. (Tech.) (Ongoing) - 16

M.Tech. - (Passed out) - 10
(Ongoing) - 2
M.Pharm - (Passed out) - 37
(Ongoing) - 4

Research publications
International- 41
National- 11
Conference proceedings - 240
Book & Book Chapter - 6

Sponsored projects
Government – 16
Private – 23
Consultancy - 3
(Ongoing)

Professional Activities

1. TEQIP Co-ordinator, Department of Pharmaceutical Sciences and Technology, ICT
2. Expert member, DSIR
3. Fellow, Maharashtra Academy of sciences, India
4. Advisor and Life Member, American Association of Pharmaceutical Scientists, USA
5. Patron Member, Controlled Release Society, Indian Chapter
6. Life Member, Association of Pharmaceutical Teachers of India
7. Life Member, Indian Cosmetics Technologist Association
8. Member, Indian society for Surface Science and Technology
9. Life Member, Indian Pharmaceutical Association, Maharashtra State Branch
10. Life Member, Indian Women Scientists Association
11. Life Member, U.D.C.T. Alumni Association

Sadhana S. Sathaye

B. Pharm., M. Pharm. Ph.D. (Tech)

Associate Professor in Pharmacy

ss.sathaye@ictmumbai.edu.in

Subjects taught

Anatomy, Physiology, Pathophysiology, (Theory/Practicals) Pharmacology (Theory), Models for Drug Delivery system (Theory)

Research interests

Worked as 'visiting Scientist at University of Delaware (DE), USA on 'Antitumor and anti-metastatic potential of Indian spices' from July, 2011- May 2012.

- Research on Metabolic disorders & related complications on cellular and molecular level
- Study of neurodegenerative and neurological disorders for effective therapy such as Parkinsons disease, Alzheimers disease and Epilepsy.
- Isolation and pharmacological evaluation of plant phytoconstituents as dietary health supplements, for effective therapy.
- Study of heavy metal toxicity in Ayurvedic formulations and alternative medicines using modern research methodology.
- Study of Biodistribution and pharmacokinetics of alternative medicines using radiolabelling
- Biotechnological isolation, production and purification of enzymes and phytoactives of pharmacological and nutraceutical importance, using fermentation technology.
- Pharmacological Evaluation of various substances with emphasis on herbal substances including validation of action of Ayurvedic and Homeopathic Formulations.
- Safety, efficacy & pharmacokinetics profiling of new drug delivery systems and new chemical entities for research colleagues and the industry.
- Evaluation of biocompatible materials as per international norms and requirements
- Standardisation of Protocols for Pharmacological Evaluation of Herbal substances for immunomodulatory, hepatoprotective, aphrodisiac, appetite stimulant activity, anti-diabetic, anti-convulsant (In-Vitro, In-Vivo).
- Toxicity evaluation as per international norms and requirements. Evaluation of acute, sub-acute and chronic toxicity according to OECD guidelines. Evaluation of Dermal toxicity and hypersensitivity reactions according to OECD guidelines.

Research students

Ph.D. Tech. (Ongoing) – 10
Masters (Passed out) – 04
Masters (Ongoing) – 02
Ph.D. (Tech.) (Passed out) - 02
M.Tech. (Passed out) - 01,

Research publications

International - 06
National- Nill
Conference Proceedings - 03

Sponsored projects

Government – 1
Private – 4

Pofessional Activities

- Life Member of University Department of Chemical Technology (U.D.C.T) Alumni Association
- Life Member of Indian Pharmaceutical Association (I.P.A), Maharashtra.
- Life Member of Association of Pharmaceutical Teachers of India (A.P.T.I).
- Life Member of Indian Pharmacological Society (I.P.S)
- Life Member of Indian Women Scientists' Association
- Member of editorial board of International Research Journal of Pharmaceutical Sciences, &
- Member of editorial board of International Journal of Biological and Chemical Sciences (IJBCS).
- Life member of Society of Toxicology

Vikas N. Telvekar

Ph. D (Tech.)

Assistance Professor, Boyscast Fellow

vn.telvekar @ictmumbai.edu.in

Subjects taught

Pharmaceutical Engineering, Medicinal Chemistry

Research interests

Novel methodology using Iodine reagent, Computer aided drug design, Synthesis of bioactive molecules, Green chemistry, Process development

Research students

Ph.D. Tech. (ongoing) – 12
Masters (completed) – 23
Masters (ongoing) – 3
Ph.D. (Sci.) - 3
Ph. D. (Sci.) - (3 Passed Out)

Research publications

International- 44
National- Nill
Conference proceedings - 23

Sponsored projects

Government – 3
Private – 4

Pradeep Vavia

B. Pharm., M. Pharm. Ph.D. (Tech)

Professor of Pharmaceutics

pr.vavia @ictmumbai.edu.in

Subjects taught

Pharmaceutics, Drug Delivery Systems Advanced Pharmaceutics, Biopharmaceutics & Pharmacokineties

Research interests

1. Cyclodextrins based drug delivery systems
2. Nanosponge based drug delivery system
3. Transdermal drug delivery systems
4. Nanosuspension, Bioencapsultion, Multiparticulate drug delivery system
5. Lipid based colloidal formulations
6. Modified release films
7. Polymer synthesis for drug delivery
8. Melt Extrusion Technology
9. Oral liquid dosage forms
10. Techniques in solubilization
11. Liposome based Drug Delivery Systems
12. Protein and peptide drug delivery systems

Research students

Ph.D. (completed). – 30
Masters (completed) – 38
Ph.D. (ongoing) – 19
Masters (ongoing) – 5

Research publications

International - 83
International (this year) - 14
National - 21
Conference Proceedings – 10

Sponsored projects

Government (ongoing) - 1
Private (ongoing) - 7
Government – 1 (completed) - 3

Professional Activities (Membership of important Committees) :

- Life member, Indian Pharmaceutical Association
- President, Indian Pharmaceutical Association (2002-2004) (Maharashtra State Branch)
- Member, Association of Pharmacy Teachers of India (APTI)
- Member, Royal Pharmaceutical Society of Great Britan (Hon. Membership)

- Inspector appointed by Pharmacy Council of India for Inspection of Institutions
- Inspector appointed by AICTE for Inspection of Institution
- Member, Editorial board of Indian Journal of Pharmaceutical sciences
- Expert Member, DSIR for inspection of industrial R & D facility
- Nominee of Vice-chancellor for appointment of teachers of Mumbai University
- Member, International Advisory board, Asian Oceanic Cyclodextrin League
- Scientific Convener, Indian Pharmaceutical Congress Association, 2006-2009.
- Member of Italian Cyclodextrin League.
- Convener, 5th Young Innovative Choice Competition (YICC) & Young Research Competition (YRC), 2010-2011 Reviewer of
  - AAPS Pharm Sci-Tech
  - International Journal of Pharmaceutics
  - Nanomedicine: Nano-technology, Biology, and Medicine
  - Indian Journal Pharma-ceutical Sciences
  - Pharmaceutical research
  - Journal of pharmacy and Pharmacology
  - AIChE Journal
  - Journal of Controlled Release

VISITING FACULTY

B. Pharm and B. Tech.

- Mr. I. K. Khan, Vrij Villa, B/20, Amrutnagar, Ghatkopar (W), Mumbai
- Dr. C. L. Vishwanathan, Lecturer, 1 Lalit Uttam Society, St. Anthony Road, Chembur, Mumbai
- Dr. Smita Limaye, Reader in Microbiology, R. K. Talreja College of Arts, Science and Commerce Shri Pant Bhuvan Rajaji Raod, Lane No.4, 2nd Floor, Opp. Triveni Soci., Dombivli
- Mrs. Surjeet Kaur, Sr. Lecturer in Computer, SIES College, Sion (West), Mumbai, Ex-Reader, FETD., ICT, Matunga, Mumbai.
- Dr. A.M. Godse, 305, Anand Niketan, K. E. M. Residents Quarters, Fitwala Road, Near Elphinstone Road Station, Mumbai
- Mr. V. Y. Sane, Manager R & D, 5/6 Jer Mansion, W. P. Varde Road, Bandra (West), Mumbai
- Dr. Mohammed Taufiq, D-402/403 – Fairy tale chs, Flower valley, Khadkpada Circle, Kalyan
- Dr. Vrushali Keer, Lecturer, MET College of Pharmacy, 501, Electra Arts, 357, Mogul Lane Mahim (West), Mumbai
- Dr. Harshad Malve, Room No. 507 A, Anand Niketan, Fitwalla Road, Elphinstone (west), Mumbai
- Dr. Leena Rao, 1403, Cascade-I Kulupwadi, Borivali (East), Mumbai
- Dr. Shweta S. Kumar, D/001, Geeta Jyot, Geeta Nagar (III), Near Old Petrol Pump, Miraroad (E), Thane
- Mrs. Vaibhavi Garge, 11/301, Royal Residency, Adharwadi, Birla College Road, Kalyan
- Mr. M. H. Navlur, G. 2. Saroopi Jamuna, Plot 44, Naya Nagar, Mira Road (East), Dist. Thane

M.Pharm / M. Tech. (Pharma)

- Dr. S. R. Shashtri, Ramniranjan Jhunjhunwala College of Arts Science and Commerce, Ghatkopar,(W) Mumbai
- Dr. Ajit C. Gorakshakar, Asstt. Director, Institute of Immunohaematology (Indian Council of Medical Research), 13th Floor, New Multistoryed Building, K. E. M. Hospital Campus, Parel, Mumbai
- Dr. Krishna Iyer, Asst. Professor, The Bombay College of Pharmacy, Kalina, Mumbai
- Dr. Krishnapriya, Lecturer, The Bombay College of Pharmacy, Kalina, Mumbai
- Dr. Shrikant. S. Sakhalkar, G. M. Business Development and Product Management, 104, Vakratunda, Bhakti Mandir Road,Panchpakhadi, Thane (W), Thane

Support Staff

Mr. Ravindra V. Sawant
Technician

Mr. Jitendra Jadhav
Sr. Laboratory Assistant

Ms. Mithila Thorat
Laboratory Assistant

Mr. Sunil Jadhav
Laboratory Assistant

Mr. Manveer Rana
Laboratory Assistant

Mr. Hemanta Shaoo
Laboratory Assistant

Mr. Mahendra Kudekar
Laboratory Assistant

Mrs. Anita Bankar
Laboratory Assistant

Mrs. Rekha Kathal
Laboratory Attendant

Mr. Kiran Chaudhari
Laboratory Attendant

Mr. Krishna Dengale
Laboratory Attendant

Mr. Santhosh Chile
Laboratory Attendant

Undergraduate and Postgraduate Seminars & Projects

As a part of the curriculum, every student of final year B.Tech, Final year B.Pharm, first year M.Tech and First year M.Pharm presents a specific technical topic and submits a written review in the form of a seminar. The faculty members of DPST actively participate in guiding the undergraduate and postgraduate students for their seminars, project reports and other curricular activities which are tabulated below:

THIRD YEAR B.PHARM SEMINAR

Sr. No.	Name	
1	Joshi Parag Rajendra	Astragaloside
2	Jain Anjali Vimal	Pathogenesis of Alzheimer's: From mystery to biochemistry
3	Mistry Alomic	Epilepsy and its treatment
4	Raut Juee Nitin	Transposones
5	Kedia Kishori Vinod	Multifunctional Lipid Nanoparticles for Cancer Treatments
6	Arora Tanmeet Kaur	Alpha Lipoic acid and its Formulation
7	Shinde Sagar Subhash	Oxazolidinns: Synthetics Antibiotics
8	Popat Riddhi Amit	Solubilization using Antisolvents
9	Shah Aakash Shailesh	Pharmacotherapy and psychotherapy of depression
10	Nitsure Ashwini Shriharsha	Expandable gastroretentive dosage forms
11	Shah Tanvi Sanjay	Congestive Heart Failure
12	Tripathi Raju Rajbansi	Journey of Drug from NDA to ANDA
13	Mali Sunil Suresh	Raman Spectroscopy and its application in Drug Delivery System
14	Taskar Pranjal Sameer	Topical and cosmetic applications of microsponges
15	Ghogare Mrunal Harish	Cell penetrating peptides for drug delivery
16	Karnalta Priyanka	Wolfberry
17	Mehta Aakash Niten	Fixed Dose Combination and Novel Drug Delivery System of Antituberculosis Drugs
18	Dashputure Ankur Atul	Astragalosioles
19	Parekh Mousam Haresh	Psoriasis and Treatments
20	Bhinderwala Fatema Najmuddin	Semisynthesis of Taxol
21	Panicker Gourishankar Retnakara	The generic Industry opportunities Challenges and the future
22	Kapadia Khushboo Bhupendra	Dipepttidylpeptidase-4 inhibitors-drugs for treatment of type 2 diabeties melitue
23	Mestry Snehal Nitin	Therapeutic strategy in treatment of Nephropathy
24	Kumbhar Sangita Balbhim	Molecular targets for cancer therapeutics
25	More Shital Sunil	Nanotechnology based systems for improving drug delivery of antiretroviral drugs to the brain delivery
26	Kasture Siddhesh Tanaji	Quality by design for development of pharmaceutical dosage forms
27	Shinde Manoj Vidhyadhar	Ethosomes as Drug Delivery System
28	Rathod Rahul Chhaganrao	Leishmaniasis
29	Kam ble Avinash Maruti	Seminar Not submitted
30	Suvarna Dipesh Uday	Pharmaceutical Pricing

FINAL YEAR B.TECH SEMINAR

Roll No.	Name	Topic
1	Arsiwala Ammar	Layer-by-layer Microparticulate Technology
2	Chandak Aastha Nitin	Cancer Stem Cells :Targeting The Signaling Pathways For Therapy
3	Gurjar Purujit Narendra	Development Of Novel Cataysts For The Olefing Metathesis Reaction
4	Iyer Rohit Ramakrishnan	Molecular Targets for Parkinson's Disease
5	Kamble Amit Shrikant	Purification Of Organic Solvent For Chemical Synthesis
6	Kulkarni Ameya	Irbesartan Synthesis: A Critical Review
7	Lele Saurabh	Engineering Drug Nanosuspensions
8	Natarajan Srikrishnan	Synthesis Of Biaryls Via Decarboxylative-Cross Coupling Of Aromatic Carboxylates With Aryl Halides
9	Nigade Mithun Sampat	Purification Of Ionic Liquid For Organic Synthesis
10	Rao Rohit Tekumalla	The Extra Cellular Matrix Microenvironment- Role And Mimicking In Articular Cartilage Tissue Engineering
11	Rosen Tania	Angiogenesis in Rheumatoid Arthritis
12	Samant Neel	Spray Drying Operation In Pharmaceutical Industry
13	Sarma Vidur	Nanofibers As A Vehicle For Novel Drug Delivery
14	Shirgavkar Ankita Madhukar	Confocal Microscopy for Nanoparticles
15	Tantry Chhayarani Maralidhar	Carbondioxide: From A Green _ House Gas To A Potential Feedstock
16	Tated Sumit	Optimization of crystallization in Pharma Industry Using Process Analytical Techniques (PAT)
17	Barsing Sharyu Tatyasaheb	Cancer Theranostics Using Nanoparticles
18	Kamble Snehal Raman	Glucaric Acid And Its Application In Neutraceutical
20	Raut Animesh Nandkishor	Jet Milling
21	Turekar Sushant Suhas	Extraction Of Vincristine And Vinblastine From Catharanthus Roseus

B.TECH PROJECT

Roll No.	Name	Topic
1	Arsiwala Ammar	Formulation Development of anti-HIV drug combination using principles of drying
2	Chandak Aastha Nitin	Synthesis of 2-bromo-5-nitroaniline

3	Gurjar Purujit Narendra	Synthesis of nitromethylidene cycloheanone: a gabapentin intermediate
4	Iyer Rohit Ramakrishnan	Nanoformulation of ellagic acid
5	Kamble Amit Shrikant	Synthesis of L-ascorbic acid-2-monophosphate-calcium salt
6	Kulkarni Ameya	Synthesis of novel intermediates of Zafirlukast
7	Lele Saurabh	Simvastatin Nanocrystals For Dissolution Improvement
8	Natarajan Srikrishnan	Novel route of synthesis for flurbiprofen
9	Nigade Mithun Sampat	Deep eutectic solvent mediated synthesis of chlorhexidine base
10	Rao Rohit Tekumalla	Chitosan Scaffolds For 3-D Cell Culture Applications
11	Rosen Tania	Synthesis of 4-Hydroxy-1H-1Quinolin-2-one (Quinolone-2,4-Diol)
12	Samant Neel	Clindamycin Phosphate Gel for Acne Vulgaris
13	Sarma Vidur	Self nanoemulsifying drug delivery system of lumefantrine
14	Shirgavkar Ankita Madhukar	Diclofenac sodium nanogel
15	Tantry Chhayarani Maralidhar	Synthesis of ketoprofen
16	Tated Sumit	Synthesis of 2-cyano-4'-methylbiphenyl
17	Barsing Sharyu Tatyasaheb	Fast Dissolving Oral Films of Risperidone
18	Kamble Snehal Raman	Extraction of Karanjin Crystal from Karanjin Oil and Extraction of Sesamin Crystals from Sesamin Oil
19	Raut Animesh Nandkishor	Topical Formulations for Arthritis

FINAL YEAR B.PHARM HOME PROJECT

Sr. No.	Name	Topic
1	Anurag Mohan	Stability of Alpha-lipoic acid
2	Belani Khushboo Gopu	An Integrated Approach To Drug Therapy For Smoking Cessation
3	D Cunha Stefina Stephen	An Improved Formulation Strategy for Rabeprazole
4	Gala Urvi Hasmukhlal	Novel oral formulations for delivery of paclitaxel
5	Gund Sagar Laxman	Rational Development of polyherbal formulation, Diacare Powder to Diacarasav
6	Hussain Suleman Salim	Design of a brain targeting BACE-1 inhibitor-chemical delivery system as a therapeutic intervention in the treatment of Alzheimer's Disease
7	Jadhao Pramod Bhujangrao	Extraction of Phytoconstituents From Stresof-Nerve tonic Capsules
8	Jarhad Rameshwar Vilas	Rational Development of Polyherbal Formulation, Purim Tablet to Purim-I Ointment and Purim-I Capsule
9	Kalelkar Pranav Pratap	Anti-filarial novel drug development
10	Kalpande Kiran Ravindra	Non Invasive Technique For Delivery of Insulin-"Insulin Buccal Spray"
11	Kamble Sneha Dilip	Candesartan Impurities: Synthesis, Characterization and Analysis
12	Karadkhelkar Nishant Mallikarjun	Prodrug development and improvement of anticancer activity of soyasaponin
13	Nagada Charmi Uttamchand	A novel and improved formulation of propofol injection
14	Namewar Dnyaneshwar Nagorao	Olanzapine- Impurities…. Characterization, Synthesis Identification and Anlysis
15	Pagare Nimisha Pradeep	Type I Diabetes Mellitus: Current Treatment and Future Strategies
16	Pande Kalpana Jagdeo	Synthesis of Pitavastatin and its pharmaceutical acceptable salt
17	Parab Amrita Sudarshan	Design of A Rapid Action Drug for the Treatment of Epileptic Seizures
18	Patel Parimal Jayantibhai	An Improved route of Total Synthesis of Atropine- The Tropane Alkaloid
19	Ranade Swapnapriya Chandrashekhar	Inhibition of Efflux Pumps: A novel Approach To Drug Development for Drug Resistant Tuberculosis
20	Salgaonkar Shambhavi Narendra	An improved formulation strategy for amoxicillin /clavulanate
21	Sarode Sushant Pradeeprao	Antifungals
22	Sathya Ramanth	Osteoporsis-Holistic Management
23	Shah Manan Haresh	Solubility enhancement of Fenofibrate
24	Shah Mansi Yogesh	Improved Formulation Strategy for Itraconazole
25	Udatewar Rachana Bharat	Losartan- Impurities: Characterization, Synthesis Identification and Analysis
26	Udeshi Jyotika Abhay	Novel drug delivery system of atorvastatin
27	Pawane Sushant Shamrao	Rational development of Polyherbal formulation
28	Sakharkar Anuradha Dilip	Clopidogrel Bisulphate short duration subcutaneous depot formulation
29	Dhage Shrikant Ninaji	Novel formulation approach for donepezil
30	Marnoor Suresh Audumbar	To Develop Rational Treatment For Fibromyalgia

M. PHARM SEMINAR

Pharmaceutical Chemistry		
Sr. No	Name	Title
1	Kothari Priya Rajendra	Bioisosters in drug design: Recent applications
2	Mohammad Aslam Jawed M.	Relationship of 3D molecular structures to aqueous solubility
3	Patel Sagar Shantilal	Determination of ee% Recent advances
4	Agre Neha Pradeep	Nanocatalysts for Suzuki Coupling
5	Ghodse Shrikant Motiram	Newer concepts in molecular interactions for drug design
6	Mundlod Krishna Nagnath	Chemical Genetics

Medicinal Natural Products		
1	Verma Neha Satish	Polyphenolic compounds as potential anti-oxidants
2	Mahesh Kumar Isharwal	Development of natural preservatives
3	Parpiani Gunjan	Advances in targeted Cancer therapy
4	Surwade Jayashree Anant	Taxines
5	Ghodke Sharwari Bhagwat	Perils of severe hypoglycemia
Pharmaceutics		
1	Badgujar Hitesh Prakash	Application of SANS in characterization of drug delivery systems
2	Patel Chinmaykumar Hasmukhlal	Multispecific antibodies
3	Survase Rahul Ajitkumar	Co-grinding of API for pharma application
4	Patil Akshata Kishor	Molecular targets for Alzheimer's
5	Chormale Sharad Bhagwatrao	Quality by design
6	Shah Dishan Divyulkumar	Gold nanoparticles in cancer therapeutics

M. Tech. (Pharma)		
Sr. No	Name	Title
1.	Tiwari Hitendranath Kedarnath	Lactol route to fesoterodine:An amine promoted fridal craft reaction

CRITICAL REVIEW: M. PHARM

Pharmaceutical Chemistry		
Sr. No	Name	Title
1	Kothari Priya Rajendra	Synthesis and evaluation of a new generation of orally efficacious benzimidazole based poly(ADP-ribose)polymerase-1 (PARP-1) inhibitors as anticancer agent.
2	Mohammad Aslam Jawed M.	Synthesis of Angiotensin II receptor blocker by means of a catalytic system for C-H activation
3	Patel Sagar Shantilal	Bivalent b-carbolines as apotential multitarget anti-alzeimer agents.
4	Agre Neha Pradeep	Lipophosphonoxins: new modular molecular structure with significant antibacterial properties.
5	Ghodse Shrikant Motiram	Difluromethylbezoxzole pyrimidine thioether derivatives novel class of potent non-nucleotide HIV-1 reverse transcriptase inhibitors.
6	Mundlod Krishna Nagnath	Novel Trisubstituted Benzimidazoles, Targeting Mtb FtsZ, as a New Class of Antitubercular Agents
Medicinal Natural Products		
1	Verma Neha Satish	Relative failure of saturated fat in the diet to produce atherosclerosis in the rabbit.
2	Mahesh Kumar Isharwal	Development of natural preservatives
3	Parpiani Gunjan	Bryonolic Acid: A Large-Scale Isolation and Evaluation of Heme Oxygenase 1 Expression in Activated Macrophages.
4	Surwade Jayashree Anant	Anti-diabetic activity of alcoholic extract of Aera lanata (L.) Juss. ex Schultes in rats
5	Ghodke Sharwari Bhagwat	Cyclotides from an Extreme Habitat: Characterization of Cyclic Peptides from Viola abyssinica of the Ethiopian Highlands
Pharmaceutics		
1	Badgujar Hitesh Prakash	Drug permeability and mucoadhesion properties of thiolated trimethyl chitosan nanoparticles in oral insulin delivery"
2	Patel Chinmaykumar Hasmukhlal	Silica-Lipid hybrid Microcapsule:influence of lipid and emulsifier type on in vitro performance
3	Survase Rahul Ajitkumar	Liposome -polyethylenimine complexes for enhanced DNA and siRNA delivery
4	Patil Akshata Kishor	Development & Evaluation of a Directly Compressible Co-processed Multifunction Sustained Release Agent for Gliclazide Sustained Release Tablets
5	Chormale Sharad Bhagwatrao	The formulation of aptamer coated polylactide-paclitaxel nanoconjugates and their targeting to cancer cells.
6	Shah Dishan Divyulkumar	Cubic phase forming dry powders for controlled drug delivery on mucosal surfaces.

M.Tech Pharma		
Sr.No	Name	Title
1.	Tiwari Hitendranath Kedarnath	Lactol route to fesoterodine:An amine promoted fridal craft reaction

MASTERS RESEARCH PROJECTS

M.Tech. programs involve full time research during Semester III and IV. Every student carries out a project involving laboratory experiments on a predefined problem from the field of specialization and later submits the thesis that is evaluated by an external expert.

M.Pharmr in.) [Medicinal Chemistry (MC)/ Medicinal Natrual Product (MNP) / Pharmacetics /(BPT)]

Sr. No.	Name of the Student	Previous Institution	Project Title / Topic	Guide
1	Khatri Dharmendra Kumar	Apex Institue of Management and Science, Jaipur	To study the pharmacological activity of medicinal plant	Professor A. R. Juvekar
2	Puja Sandbhor	BCP	Investigations of Herbal extract for therapeutic importance	Professor A. R. Juvekar

3	Manjula Konka	ICT, Mumbai	Preclinical evaluation of plant material for potential pharmacological activity	Professor A. R. Juvekar
4	Neha Verma	B V College of Pharmacy, Navi Mumbai	Studies on Bioactivity profile of Natural antioxidants	Professor A. R. Juvekar
5	Mahesh Isharwal	Mohanlal Sukhadia University	Evaluation of Pharmacological activity of medicinal plant	Professor A. R. Juvekar
6	Jayeshri Survade	AISSM College of Pharmacy, Pune	Evaluation of psychopharmacological activity of Indian medicinal plant in laboratory animals.	Professor A. R. Juvekar
7	Mr. Sulgudle Shivraj	Government College of Pharmacy, Amrawati	Controlled Release Parenteral Drug Delivery System	Professor P. V. Devarajan
8	Mr. Majumder Arijit	JSCOPR, Pune	Formulation and Evaluation of Particulate Drug Delivery Systems	Professor P. V. Devarajan
9	Mr. Survase Rahul	AISSMS College of Pharmacy, Pune	In-Situ Gelling Nasal Drug Delivery System for Emergency Treatment in Epilepsy	Professor P. V. Devarajan
10	Jadhav Pankaj	Brahma valley college of pharmacy, Nasik	Development and Evaluation of Transdermal Therapeutic System	Professor P. R. Vavia
11	Mehata Parag	MET, Nasik	Development and Evaluation of Nannoparticulate Drug Delivery System	Professor P. R. Vavia
12	Shah Dishan	LMCP, Ahmedabad	Design and Characterization of Push Pull Osmotic Pump	Professor P. R. Vavia
13	Chormale Sharad	STCOP, Shirur	Development and Evaluation of SMEDDS	Professor P. R. Vavia
14	Ms. Manali Taskar	V.M.H.P Shah College of Pharmacy	Evaluation of Anti-osteoporotic activity of Ellagic acid	Dr. Sadhana Sathaye
15	Ms. Aditi Patil	Maharashtra Istitute of Pharmacy, Pune	Isolation and Pharmacological Evaluation of Luteolin in Experimental Models of Epilepsy	Dr. Sadhana Sathaye
16	Mr. Sagar Phanawade	S.G.R.S. College of Pharmacy, Saswad, Pune	Isolation and Pharmacological Evaluation of β-amyrin for antiepileptic activity	Dr. Sadhana Sathaye
17	Mr. Vikas Mankumars	Yadavrao Tasgaonkar Institute of Pharmacy, Karjat.	Osteoprotective effect of medicinal plants	Dr. Sadhana Sathaye
18	Mr. Indalkar Krishna S.	Rajarambapu College of Pharmacy, kasegaon, Dist- Sangli	Design, Synthesis & Evaluation of New Chemical Entities as Anti-inflammatory Agents	G.U. Chaturbhuj
19	Aakash Khicha	S.S.D.J. College of Pharmacy, Chandwad	Design, Synthesis & Evaluation of Potential Antimicrobial Agents	Professor K.G. Akamanchi
20	Chetan Khatri	L. M. College of Science & Technology, Jodhpur	Design, Synthesis and Evaluation of DAP Antimetabolite.	Professor K.G. Akamanchi
21	Shweta Chawla	Sarswati Institute of Pharmaceutical Sciences, Gandhinagar	IBX: Towards the Development of a New analytical Reagent.	Professor K.G. Akamanchi
22	Mr. Khambete Mihir	AISSMS, Pune	Nitroheterocyclics as anti-infective agents	Dr. M. S. Degani
23	Ms. Jahagirdar Priyanka	SVBCP, Mumbai	Curcumin analogs as bioactive agents	Dr. M. S. Degani
24	Ms. Kale Vaishali	C. U. Shah College of Pharmacy, Mumbai	Stilbene analogs as bioactive agents	Dr. M. S. Degani
25	Mr. Shegaonkar Sandip	UDCT, Aurangabad	Solvent system optimization in synthesis of drug intermediates	Dr. M. S. Degani
26	Ms. Kharkar Prachi	Bharati Vidyapeeth College of Pharmacy, Mumbai	Downstream processing of enzyme from infective microorganism	Dr. M. S. Degani
27	Mr. Patel Sagar	A.R. College of Pharmacy, Gujrat	Nitrogen containing [4.3.0] bicyclic ring system as biologically active compounds	Dr. M. S. Degani
28	Ms. Agre Neha	MET, Mumbai	Bicyclic [4.4.0] nitrogen heterocycles as biologically active agents	Dr. M. S. Degani
29	Ms. Redkar Gargi	VES College of Pharmacy, Mumbai	Isolation and purification of drug target enzyme from infectious microorganism	Dr. M. S. Degani
30	Agrawal Ankit	Sigma Institute of Pharmacy, Vadodara	Development of colloidal carriers for nose-to-brain delivery	Professor V. B. Patravale
31	Chaudhari Manisha	N.D.M.V.P'S college of pharmacy, Nashik	Colloidal carriers for oral Amphotericin B	Professor V. B. Patravale
32	Badgujar Hitesh	N.D.M.V.P'S college of pharmacy,Nashik	Fabrication of Polymeric scaffolds for tissue engineering	Professor V. B. Patravale

33	Patel Chinmay	M.S. University Baroda	Development & evaluation of an anticancer drug delivery system	Professor V. B. Patravale
34	Mr. Santosh Gejage	SCP	Preparation and evaluation of Directly compressible grade Mannitol	Professor P. D. Amin
35	Mr. Omprakash Bagdiya	GCP	Formulation & Evaluation of Sustained Release dosage form of Venlafaxine Hydrochloride	Professor P. D. Amin
36	Mr. Naveen Khetarpal	GGSCP	To convert Valproic acid into a stable solid & its dosage form	Professor P. D. Amin
37	Ms. Rashmi Vegda	Bombay College of Pharmacy	Studies on Withania somnifera	Professor K. S. Laddha
38	Ms. Meenakshi Akhade	Bombay College of Pharmacy	Studies on Picrrorhiza kurroa	Professor K. S. Laddha
39	Ms. Poonam Agrawal	SVBCP College of Pharmacy	Studies on Indian Bdellium	Professor K. S. Laddha
40	Mr. Sharwari Ghodke	ICT, Mumbai	Extraction & isolation of phyto-constituents from Asparagus racemosus	Professor K. S. Laddha
41	Ms. Gunjan Parpiani	KMK college of Pharmacy	Extraction & isolation of phytoconstituents from Centella asiatica	Professor K. S. Laddha
42	Ms. Rashmi Vegda	Bombay College of Pharmacy	Studies on Withania somnifera	Professor K. S. Laddha
43	Ms. Meenakshi Akhade	Bombay College of Pharmacy	Studies on Picrrorhiza kurroa	Professor K. S. Laddha
44	Ms. Akshata Patil	ICT, Mumbai	Formulation and Evaluation of Topical NSAIDS	Professor P. D. Amin

M.Tech. (Pharma)

Sr. No.	Name of the Student	Previous Institution	Project Title / Topic	Guide
1	Ms More Rachna	ICT	Mucooadhesive Drug Delivery Systems	Professor P. V. Devarajan
2	Rucha Deshpande	UDCT, Aurangabad	Development & Evaluation of Osmotic Drug Delivery System	Professor P. R. Vavia
3	Mr. Prasad Joshi	Oriental college of pharmacy, Mumbai	Production and purification of biomoleucles	Dr. Sadhana Sathaye
4	Atul Yalpale	Government College of Pharmacy, Aura-ngabad	An alternative synthesis of drug and drug intermediates.	Professor K.G. Akamanchi
5	Pai Ankita	ICT, Mumbai	Development of nanocarrier based cosmeceuticals	Professor V. B. Patravale
6	Koley Sushmita	C.U. Shah College of Pharmacy, Mumbai	Supercritical fluid extraction of the bio-actives from Anogeissus latifolia	Professor V. B. Patravale
7	Mr. Anand Shinde	QCFT, Aurangabad	Tudies in extraction of essential oils from Zanthoxylum rhesta	Professor K. S. Ladha

The ongoing doctoral research projects in the DPST are as follows:

Ph.D (Tech.) [Medicinal Chemistry (MC)/ Medicinal Natrual Product (MNP) / Pharmacetics /(BPT)]

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Preeti Tupe	D Y P IPSR, Pune	Neuropharmacological Investigations of Mentha arvensis & Vernonia anthelmintica In Experimental Animals	Professor A. R. Juvekar
2	Dnyaneshwar Nagmoti	UICT, Mumbai	Pharmacological investigations of Pithec-ellobium dulce & Vernonia anthelmintica for their antidiabetic activity.	Professor A. R. Juvekar
3	Jayesh Dhodi	UICT, Mumbai	Phytochemical & Pharmacological investigation of Medicinal Plant in diabetic nephropathy	Professor A. R. Juvekar
4	Sabir Attar	Nagpur University	Study of Toxicology and Genotoxicity of L-DOPA & Hyoscine in combination therapy	Professor A. R. Juvekar
5	Vipin Bulani	D Y P IPSR, Pune	#	Professor A. R. Juvekar
6	Pankaj Kothavade	D Y P IPSR, Pune	#	Professor A. R. Juvekar
7	Mr. Ranee Banteilang	ICT	Innovative Drug Delivery Systems	Professor P. V. Devarajan
8	Ms. Khandekar Sameera V.	Govt College of Pharmacy, Karad	Polymeric Drug Delivery Systems	Professor P. V. Devarajan
9	Mr. Jindal Anil B.	Bombay College of Pharmacy	Studies On Targeted Drug Delivery Systems	Professor P. V. Devarajan
10	Mr. Joshi Vishvesh M.	Prin, K. M. Kundnani college of Pharmacy	Controlled and Innovative Drug Delivery Systems	Professor P. V. Devarajan
11	Ms. Nagarsekar Kalpa S.	Bombay College of Pharmacy	Targeted Nanocarrier Based Drug Delivery Systems for Infectious Disease	Professor P. V. Devarajan

12	Ms. Patil Nilam H.	All India Shri Shivaji Memorial Society	Nanoparticulate Carriers for Delivery of Biotech Drugs	Professor P. V. Devarajan
13	Ms Shinde. Rajashree L.	Bombay College of Pharmacy	Nutraceutical Based Drug Delivery System	Professor P. V. Devarajan
14	Mr. Patel Mitesh D.	ICT	Particulate Carriers as Drug Delivery Systems for Anti-Tubercular Agents	Professor P. V. Devarajan
15	Mr. Malode Vilas N.	ICT	Oral controlled release Once a Day Formulations	Professor P. V. Devarajan
16	Mr. Mande Prashant	Bharti Vidyapeeth CBD Belapur	Bioenhancement Strategies for Oral and Nasal Drug Delivery	Professor P. V. Devarajan
17	Mr. Soni Mahesh P.	ICT	Targeted Drug Delivery Systems for Veterinary Infection	Professor P. V. Devarajan
18	Mr. Joshi Rohit	Bombay College of Pharmacy	Drug Delivery Approaches for Anti-Cancer Therapy	Professor P. V. Devarajan
19	Ms. Dalvi Bhagyashree	ICT	Drug Delivery Approaches for Anti Infective Therapy	Professor P. V. Devarajan
20	Ms Sandhya P	ICT	Drug Delivery Systems for Hepatic Targeting	Professor P. V. Devarajan
21	Ms. Joshi Bhagyashree	Mumbai Educatio-nal trust Institute of Pharmacy	Drug Adsorption Models for Predicting Bioenhancement Strategies for Poorly Permeable Drugs	Professor P. V. Devarajan
22	Ms Dawre Shilpa	ICT	Colloidal Drug Delivery Systems	Professor P. V. Devarajan
23	Mr Bacchav Sagar	R C Patel Institute of Pharmaceutical Education & Research	Development & Preclinical evaluation of Drug Delivery Systems for Targeted Delivery to the Brain	Professor P. V. Devarajan
24	Sandip Chavan	SNIOP, Pusad	Studies on polymeric particulate drug delivery systems	Professor P. R. Vavia
25	Dnyanesh Shelar	Dr. D.Y.Patil Colle-ge of Pharmacy	Design and evaluation of novel drug delivery system for poorly soluble drugs	Professor P. R. Vavia
26	Nitin mali	ICT, Mumbai	Design of nanoparticulate systems for improved drug delivery	Professor P. R. Vavia
27	Dinesh Brahmane	Bombay College of Pharmacy, Mumbai	Development of drug delivery strategy based on surfactant and cyclodextrins as an excipient	Professor P. R. Vavia
28	Nilesh Saindane	Bharati Vidyapeeth's College of Pharmacy, Mumbai	Formulation development & evalu-ation of modified drug delivery system	Professor P. R. Vavia
29	Sangwai Mayur	ICT, Mumbai	Studies on Application of Particle Eng-ineering Aspects in Designing Efficient Pharmaceutical Dosage Forms	Professor P. R. Vavia
30	Sardar Surendra	NDMVP's College of Pharmacy, Nasik	Development and evaluation of oral drug delivery system for ant diabetic and anti-inflammatory agents	Professor P. R. Vavia
31	Yeola Gaurav	Dr.D.Y.Patil College of Pharmacy	Design and evaluation modified release dosage form	Professor P. R. Vavia
32	Pagar Kunal	ICT, Mumbai	Design and characterization of lactide based biocompatible polymeric parti-culate injectable drug delivery system	Professor P. R. Vavia
33	Darandale Sharad	ICT, Mumbai	Studies on nanoformulations & cyclo-dextrin nanosponges for improved efficiency of parenteral dosage forms	Professor P. R. Vavia
34	Khire Achyut	ICT, Mumbai	Development of bioequivalent transder-mal patch containing aqueous (acrylic) dispersion type pressure sensitive adhesive	Professor P. R. Vavia
35	Pawar Smita	ICT, Mumbai	Exploring N-acetylglucosamine for targeted drug delivery system	Professor P. R. Vavia
36	Patel Ketan	Bombay College of Pharmacy, Mumbai	Amino acid based nanocarriers for anticancer therapy	Professor P. R. Vavia
37	Ingle Subhash	NIPER, Mohali	Silica based drug delivery system	Professor P. R. Vavia
38	Wavikar Preeti	ICT, Mumbai	Lipid based nanocarrier for brain delivery	Professor P. R. Vavia
39	Jadhav Nitin	ICT, Mumbai	Novel carrier based drug delivery system	Professor P. R. Vavia
40	Vora Lalit	ICT, Mumbai	#	Professor P. R. Vavia
41	Mahajan Ketan	UDCT, NMU Jalgaon	#	Professor P. R. Vavia
42	Monpara Jasmin	ICT, Mumbai	#	Professor P. R. Vavia
43	Roopali Redkar	K.M. Kundanani College of Pharmacy	Investigation on secondary metabolites & neuropharmacological studies on Ocimum Sanctum L for its Therapeutic role in Parkinson's Disease	Dr. Sadhana Sathaye
44	Jayant Sancheti	Bombay College of Pharmacy	Antiepileptic evaluation of selected medicinal plant: A mechanistic Approach	Dr. Sadhana Sathaye

45	Rahul Chaudhari	NDMVP college of Pharmacy, Nashik	Herbal Drugs in Pharmacotherapeutics of vascular complications of diabetes – A Mechanistic Approach	Dr. Sadhana Sathaye
49	Gauresh Somani	Bombay College of Pharmacy, Mumbai	Pharamcological and mechanistic evaluation of medicinal plant for antidiabetic activity and diabetes induced complications.	Dr. Sadhana Sathaye
47	Pooja Pherwani	Grant Medical college, Mumbai	Anti-osteoporotic activity of plant phytoconstituent (yet to be registered)	Dr. Sadhana Sathaye
48	Sachin Patil	R.C. Patel Institute of Pharmaceutical Research & Education	Neuropharmacological profile of Ap-igenin in experimental models of Parkinson's disease (yet to be registered)	Dr. Sadhana Sathaye
49	Ms. Divya Kanchan	Institute of Chemical Technology, Mumbai	Topic to be decided (yet to be registered)	Dr. Sadhana Sathaye
50	Ms. Rufi tambe	Institute of Chemical Technology, Mumbai	Topic to be decided (yet to be registered)	Dr. Sadhana Sathaye
51	Chetan L. Salunke	ICT	Chemotherapeutic Agents : Studies in Rational Design, Synthesis & Evaluation	Professor K.G. Akamanchi
52	Rahul S.Kalhapure	Pune University	Studies in Dendrimer Synthesis and Applications	Professor K.G. Akamanchi
53	Sagar P. Pathare	ICT	Process development of Active Pharmaceutical Ingredients & intermediates	Professor K.G. Akamanchi
54	Kamlesh V. Katkar	Manipal University	Development of Green Methodologies for Synthesis of Active Pharmaceutical Ingredients and Intermediates.	Professor K.G. Akamanchi
55	Ashish Kumar Jain	ICT	Topic has not decided	Professor K.G. Akamanchi
56	Kapil S. Chaudhari	UDCT, Jalgaon	Dendrimers: Design, Synthesis & Applications	Professor K.G. Akamanchi
57	Dhiraj M. Patil	SRM University	Topic has not decided	Professor K.G. Akamanchi
58	Mr. Chavhan Sunil	UICT	Synthesis of nitrogen heterocycles of biological importance	Dr. M. S. Degani
59	Ms. Pulsule Desai Nutan	UICT	Design and synthesis of new chemical entities as metabolic pathway inhibitors	Dr. M. S. Degani
60	Mr. Dighe Mahesh	UICT	Design and synthesis of novel antiinfectives	Dr. M. S. Degani
61	Mr. Jain Puneet	UICT	Synthesis of novel substituted benzopyridines as anti-infectives	Dr. M. S. Degani
62	Ms. Lele Arundhati	UICT	Design and synthesis of novel antifolate anti-infectives	Dr. M. S. Degani
63	Mr. Bochare Machhindra	NDMVP College of Pharmacy, Nashik	Development of synthetic methods for organofluorine compounds	Dr. M. S. Degani
64	Mr. Lonkar Sachin	Dr. D. Y. Patil College of Pharmacy, Pune	Synthesis of Phase-II metabolites by Green methods	Dr. M. S. Degani
65	Mr. Shelke Rupesh	Govt. College of Pharmacy, Aurangabad	Design and synthesis of novel multitargeting anti-infectives	Dr. M. S. Degani
66	Mr. Kundaikar Harish	UICT	Design and synthesis of molecules for Alzheimer's disease	Dr. M. S. Degani
67	Mr. Bhusari Arun	ICT	Topic to be approved	Dr. M. S. Degani
68	Fernandes Clara	ICT, Mumbai	Development of innovative drug delivery system	Professor V. B. Patravale
69	Velhal Milind	Government College of Pharmacy, Karad	Development of colon targeted microparticles/nanoparticles	Professor V. B. Patravale
70	G. Dalapathi	ICT, Mumbai	Curcumin nanopartilces for improved therapeutic efficacy	Professor V. B. Patravale
71	Pol Anuradha	Bombay college of Pharmacy, Mumbai	Nanocarrier based topical delivery of antioxidants	Professor V. B. Patravale
72	Swami Megha	AISSMS College of Pharmacy, Pune	Nanoengineered particulate carriers of antimalarials using novel techniques	Professor V. B. Patravale
73	Patil Sushant	ICT, Mumbai	Transdermal patches for neurodegenerative disorders	Professor V. B. Patravale
74	Patel Pratik	ICT, Mumbai	Therapeutic approaches using controlled transdermal delivery to treat neurodegenerative diseases in aging populations	Professor V. B. Patravale
75	Shete Harshad	ICT Mumbai	Development of nanocarriers for cancer treatment	Professor V. B. Patravale
76	Desai Soniya	K.M. Kundanani College of Pharmacy Mumbai	Development of nanocarrier based antimalarial formulations	Professor V. B. Patravale
77	Prabhu Priyanka	ICT, Mumbai	Development of novel antimalarial nanocarriers	Professor V. B. Patravale
78	Mohrule Swapnil	IIT, Mumbai	Anti-amyloid agents loaded nanocarriers via intranasal route for alzheimer's disease treatment	Professor V. B. Patravale

79	Prabhu Rashmi	ICT, Mumbai	Functionalized non-viral vectors for breast cancer therapy	Professor V. B. Patravale
80	Vyas Swati	ICT, Mumbai	Nanotechnology based diagnostic module for detection and prevention of brucellosis	Professor V. B. Patravale
81	Gite Sandip	UDCT, Abad	Development and scale up of novel controlled release dosage forms	Professor V. B. Patravale
82	Namrata Kadwadkar	Bombay college of Pharmacy, Mumbai	Awaited	Professor V. B. Patravale
83	Mr. Kiran Sawant	ICT	Studies on Extrusion Technology in Innovative Drug Delivery System	Professor P. D. Amin
84	Ms.Vanita Sharma	ICT	Development of Fixed Dose Combinations as first line treatment for Hypertension & Tuberculosis	Professor P. D. Amin
85	Mr. Ajay Sav	NIPER	Evaluation of hydrocolloids for emulsification and release retarding properties	Professor P. D. Amin
86	Mr. Rahul Patole	ICT	Improvisation Techniques for Manufacture & Evaluation of Solid Dosage Forms	Professor P. D. Amin
87	Mr. Meer Tarique Ali	ICT	Release modification designs for poorly water soluble drugs	Professor P. D. Amin
88	Mr. Ritesh Fule	BCP	Formulation and Evaluation of Drug Delivery Systems Prepared Using Hot Melt Extrusion	Professor P. D. Amin
89	Mr. Sharadchandra Javeer	ICT	Innovative Formulation Development using Hot Melt Extrusion	Professor P. D. Amin
90	Ms. Harita Desai	ICT	Engineering of Drug crystals for formulation development	Professor P. D. Amin
91	Mr. Avinash Gangurde	ICT	Topic approval awaited	Professor P. D. Amin
92	Ms. Pradnya Vaingankar	ICT	Topic approval awaited	Professor P. D. Amin
93	Mr. Rajesh Gavit	ICT	Study on chemical modification of phytoconstituents	Professor K. S. Laddha
94	Ms. Galvina Ferreira	ICT	Studies on Benzoquinones & Naphthoquinones from medicinal plants	Professor K. S. Laddha
95	Ms. Manasi Nabar	Prin, K.M.Kundnani college of Pharmacy	Studies on natural xanthones	Professor K. S. Laddha
96	Mr. Maheshkumar Kale	NDMVP Nashik	Phytochemical Investigation of Genus Momordica.	Professor K. S. Laddha
97	Mr. Shankar Katekhaye	NIPER, Mohali	Studies on Pithecellobium dulce	Professor K. S. Laddha
98	Mr. Aditya Arvindekar	NIPER, Kolkata	Natural Anthraquinones: Their extraction, isolation and chemistry	Professor K. S. Laddha
99	Mr. Prashant Shinde	Gov. College of Pharmacy, Amaravati	Studies on natural coumarins	Professor K. S. Laddha
100	Mr. Mandar Mulik	ICT	Natural Lignans: Their extraction, isolation and chemistry	Professor K. S. Laddha
101	Mr. Rajesh Gavit	ICT	Study on chemical modification of phytoconstituents	Professor K. S. Laddha
102	Mr. Pramod Rajote	Gov. College of Pharmacy, Amaravati	#	Professor K. S. Laddha
103	Ms. Snehal Bhandare	MGV's Pharmacy College	#	Professor K. S. Laddha

Registration in progress

Integrated Ph.D. (Tech.)

Sr. No.	Research Scholar & Sponsors	Previous Institute	Project Title	Guide
1	Desai Preshita	ICT, Mumbai	Novel delivery systems for neurodegenerative disorders	VBP

Ph.D. Science

Sr. No.	Research Scholar & Sponsors	Previous Institute	Project Title	Guide
1	Pramod S. Chaudhari	Pune University	Development in Synthesis and Process Chemistry of Natural Products	KGA
2	Abhay D. Nimonkar	Pune University	Development of Synthetic Methodology for Organic Chemistry	KGA
3	Ravindra R. Jadhav	Pune University	Transformations Using Hypervalent Iodine (V) Reagents & Mechanistic Investigations	KGA
4	Archana Ghorpade	Pune University	#	KGA
5	Sachin D. Veer	Pune University	#	KGA
6	Ms. Raju Archana	IOS, Mumbai	Dihydrofolate reductase as a drug target in Mycobacterium tuberculosis	MSD
7	Mr. Sabale Sandip	Abasaheb Garaware College of Arts & Science, Pune	Green approach towards synthesis of pharmaceutically important compounds	MSD
8	Mr. Janmanchi Harikesh	Birla College, Mumbai	#	MSD
9	Deepavali Thanekar	Institute of Science, Mumbai	Studies on bioactive compounds from plant sources for their anti-tumour activity.	ARJ
10	Mr. Shrikant Babar	Dada Patil Mahavidhyalaya, Karjat	#	KSL

Registration in progress

DEGREES AWARDED

M.Pharm.

Sr. No.	Name of the Student	Project Title / Topic	Guide
1	Khatri Dharmendra Kumar	To study the pharmacological activity of medicinal plant	Professor A. R. Juvekar
2	Puja Sandbhor	Investigations of Herbal extract for therapeutic importance	Professor A. R. Juvekar
3	Manjula Konka	Preclinical evaluation of plant material for potential pharmacological activity	Professor A. R. Juvekar
4	Mr. Naveen A Utwani	Transmucosal Drug Delivery Systems	Professor P. V. Devarajan
5	Mr. Vinayak R Datkhile	Particulate Drug Delivery Systems	Professor P. V. Devarajan
6	Ms Shilpa Dawre	Colloidal Drug Delivery Systems	Professor P. V. Devarajan
8	Deepak Kumbhar	Formulation and Evaluation of Niosomal Drug Delivery System	Professor P. R. Vavia
9	Sunil Gavhane	Development and Characterization of Novel Transdermal Drug Delivery System	Professor P. R. Vavia
10	Jasmin Monpara	Design and Evaluation of Nanoparticulte Drug Delivery System	Professor P. R. Vavia
11	Ms. Rufi tambe	Pharmacokinetic evaluation of Trigonella foenum	Dr. Sadhana Sathaye
12	Ms. Divya Kanchan	Pharmacokinetic evaluation of Trachyspermum copticum	Dr. Sadhana Sathaye
13	Mr. Pankaj Jain	Pharmacokinetic evaluation of Nigella sativa	Dr. Sadhana Sathaye
14	Ashish Kumar Jain	Design, Synthesis and Evaluation of Novel Antimicrobial Agents	Professor K. G. Akamanchi
15	Arun Bhusari	Design, Synthesis and Evaluation of Heterocyclic compound as bioactive agent	Professor K. G. Akamanchi
16	Ms. Desai Neha	Design and Synthesis of agents targeting cell envelopes of micro-organisms	Dr. M. S. Degani
17	Ms. Rathod Mudra	Chemical modifications of polymers for drug delivery	Dr. M. S. Degani
18	Jadhav Sandeep	Development of a novel oral dosage form	Professor V. B. Patravale
19	Shinde Siddhesh	Development of an innovative topical delivery system	Professor V. B. Patravale
20	Desai Preshita	Novel delivery systems for neurodegenerative disorders	Professor V. B. Patravale
21	Mr. Santosh Gejage	Preparation and evaluation of Directly compressible grade Mannitol	Professor P. D. Amin
22	Mr. Naveen Khetarpal	To convert Valproic acid into a stable solid and its dosage form	Professor P. D. Amin

M.Tech. (PHARMA)

Sr. No.	Name of the Student	Project Title / Topic	Guide
1	Mr. Nikhil Kateja	Isolation of Pharmaceutically Important Constituents	Professor Padma V. Devarajan
2	Arjunsingh Bajwa	Bioconversion of Oils using enzymes	Dr. Sadhana Sathaye
3	Bhalchandra Patil	Production and purification of therapeutically important biomolecule	Dr. Sadhana Sathaye
4	Ms. Khedkar Manisha	Isolation and downstream processing of bacterial drug target enzyme	Dr. M. S. Degani
5	Ms. Niphadkar Sonali	Isolation, purification and development of assays for DHFR from different sources	Dr. M. S. Degani

M.Tech. (BPT)

Sr. No.	Name of the Student	Title	Guide
1	Ms. Khedkar Manisha	Isolation and downstream processing of bacterial drug target enzyme	MSD
2	Ms. Niphadkar Sonali	Isolation, purification and development of assays for DHFR from different sources	MSD
3	Arjunsingh Bajwa	Bioconversion of Oils using enzymes	SSS
4	Bhalchandra Patil	Production and purification of therapeutically important biomolecule	SSS

Ph.D. (Tech)

Sr. No.	Name of the Student	Project Title / Topic	Guide
1	Ms. Swati Guhagarkar	Bioenhanced Drug Delivery systems	Professor P. V. Devarajan
2	Ms. Sonali Kapse	Colloidal Drug Delivery Systems	Professor P. V. Devarajan
3	Hemgir Gosavi	Development and evaluation of solid dosage forms	Professor P. R. Vavia
4	Sharad Wavdhane	Design and evaluation of extended release oral drug delivery systems	Professor P. R. Vavia
5	Mohd. Farooq Shaikh	Pharmacological evaluation of Eclipta alba in experimental model of epilepsy	Dr. Sadhana Sathaye
6	Mr. Rakesh Kenjale	Alteration In Biological Properties Of Heavy Metals By Ayurvedic Processing	Dr. Sadhana Sathaye

7	Ganesh U. Chaturbhuj	Computer Aided Design of NCE's as Antiinfective Agents and Process Chemistry of Intermediates & API's.	Professor K.G. Akamanchi
8	Mr. Kakwani Manoj	Design, synthesis and biological evaluation of novel anti-infective agents	Dr. M. S. Degani
9	Soni Umangi	Studies on lipid-based antimalarial nanocarriers	Professor V. B. Patravale
10	Borhade Vivek	Development of colloidal nanocarriers for antimalarial therapy	Professor V. B. Patravale
11	Patale Ramchandra	Development of polysaccharide based drug	Professor V. B. Patravale
12	Mr. Kiran Sawant	Studies on Extrusion Technology in Innovative Drug Delivery System	Professor P. D..Amin

Ph.D. Science

Sr. No.	Name of the Student	Title	Guide
1	Swapnil. S. Deshmukh	Process Intensification Towards the Development of New Process Chemistry for Intermediates.	KGA
2	Sameerana. N. Huddar	Process Intensification of Pharmaceutical Substances Through New Process Chemistry	KGA
3	Suresh D. Salim	Studies in Modified Inorganic Solid Acids as Green Catalyst	KGA
4	Ravindra V. Sawant	Development of Inorganic Solid Acids Catalyst for Green Chemistry	KGA
5	Prasad S. Dangte	Studies in Natural Products : Synthesis and Process Chemistry	KGA
6	Harshal M. Bachhav	Development and Application of New Methodologies for Synthesis of Bioactive Molecules	VNT

Professor P. V. Devarajan

GOVERNMENT AGENCIES

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Indian Council of Medical Research	Development of Nasal Drug Delivery System of Antiepileptic Drugs for Emergency Therapy	1 year	Rs. 10,08,724/-	Professor Padma V. Devarajan	Anil B. Jindal
Department of Biotechnology	Targetted Nanoparticulate Drug Delivery System of Doxorubicin for hepatic cancer using asialoglycoprotein receptor mediated approach	3 years	Rs. 48, 82, 000/-	Professor Padma V. Devarajan	Mr. Mitesh D. Patel
Department of Biotechnology	Custom deigned efficient safe intracellular targeted nanoparticulate veterinary drug delivery system	3 years	Rs. 63.61Lacs	Dr Abdul Samad	Mr. Mahesh Soni

PRIVATE AGENCIES

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Phoenix Pharma-ceutical Ltd., USA	Novel Drug Delivery Systems	3 Years	US$ 25,000/=	Professor Padma V. Devarajan	Mr. Vishvesh M. Joshi
Phoenix Pharma-ceutical Ltd., USA	Novel Drug Delivery Systems	3 Years	US$ 25,000/=	Professor Padma V. Devarajan	Mr. Vilas N. Malode
Phoenix Pharma-ceutical Ltd. ,USA	Oral controlled drug delivery systems	3 Years	US$ 25,000/=	Professor Padma V. Devarajan	Mr. Prashant Mande
Mahan Proteins Ltd. India	Evaluation of Directly Compressible Lactose of Mahan Proteins	1 Year	Rs. 1,50,000	Professor Padma V. Devarajan	Mr. Praveen V. Date
Pfizer Pharma-ceuticals. USA	SMEDDS for Parenteral Application	Year	Rs. 10,00,000/-	Professor Padma V. Devarajan	Mr. Mitesh D. Patel

Professor K. G. Akamanchi

PRIVATE AGENCIES

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Indofil Ltd.	Synthesis of Reference Compounds for Impurity Profiling	1 year	2.5 Lakhs	Professor K. G. Akamanchi	Prasad Dangate
Tata memorial center	Synthesis of resveretrol – Cu complex	1 year	6.0 Lakhs	Professor K. G. Akamanchi	

Professor P . D. Amin

Government Agencies

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
UGC - SAP	Development of Fixed Dose Combinations as first line treatment for Hypertension & Tuberculosis Duration March 2011 – March 2012	-	1.35 Lakhs	Professor P. D. Amin	Ms. Vanita Sharma
UGC - SAP	Release modification designs for poorly water soluble drugs	March 2011 – March 2012	1.35 Lakhs	Professor P. D. Amin	Mr. Meer Tarique Ali
UGC - SAP	Formulation & Evaluation of Drug Delivery Systems Prepared Using Hot Melt Extrusion	March 2011 – March 2012	1.35 Lakhs	Professor P. D. Amin	Mr. Ritesh Fule
UGC - SAP	Innovative Formulation Develo-pment using Hot Melt Extrusion	March 2011 – March 2012	1.35 Lakhs	Professor P. D. Amin	Mr. Sharadchandra Javeer
DBT	Evaluation of hydrocoll-oids for emulsification & release retarding properties	March 2011 – March 2012	2.48 Lakhs	Professor P. D. Amin	Mr. Ajay Sav

Private Agencies

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Bajaj Healthcare Ltd	Engineering of Drug crystals for formulation development	March 2011 – March 2012	1.86 Lakhs	Professor P. D. Amin	Ms. Harita Desai
Bajaj Healthcare Ltd	Development of Novel Drug Delivery Systems	1 Year	1.86 Lakhs	Professor P. D. Amin	Mr. Diwakar Jaiswar
Evonik Industries Ltd	Evaluation of potential application of Evonik excipients	March 2011 – March 2012	1.2 Lakhs	Professor P. D. Amin	
Scope Excipients Ltd	Development of DC grade Mannitol	March 2011 – March 2012	1.5 Lakhs	Professor P. D. Amin	
Adroit Biomed	Moisturising cream	Oct 2011 – Dec 2011	50,000	Professor P. D. Amin	
Mascot Universal	Topical Products for Personal Care	Oct 2011 – Dec 2011	1 Lakh		

Dr. G. U. Chaturbhuj

Government Agencies

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
University Grants Commission	Design, synthesis & biol-ogical evaluation of 2- pheny-4, 5-(substituted) 3- carboxylic acid derivatives as anti-inflammatory agents	3 Years	Rs. 7,52,500.00	Dr. G. U. Chaturbhuj	NIL

Professor M. S. Degani

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
BRNS	Design, synthesis & evaluation of 18F ligands for diagnosis of Alzheimer's disease	3 years	18,72,265/-	MSD (Principal Coordinator)	1
ICMR	Nanotechnology based diagnostic module for detection of brucellosis	3 years	18,44,524/-	MSD (Co-investigator)	

Dr. P. D. Jain

Government Agencies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
SERB, DST	Ramanujan Fellowship	5 Years	73 Lakh	Dr. Prajakta Dandekar Jain	

Dr. Ratnesh Jain

Government Agencies

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
SERB, DST	Ramanujan Fellowship	5 Years	73 Lakh	Dr. Ratnesh Jain	

Professor K. S. Laddha

Government Agencies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Indian Council of Medical Research	Quality Standards of Indian Medicinal plants & Preparation of Monographs thereon	3 years (2009-2012)	Rs.25,60,572/-	Professor K. S. Laddha	Mr. Shankar Katekhaye & Mr. Mandar Mulik
Central Council for Research in Ayurveda & Siddha, Department of AYUSH	Studies on purification & detox-ification (Sodhana prakriya) of toxic Ayurvedic medicinal platns	Two years (2009-2011)	Rs. 5,91,000/-	Professor K. S. Laddha	Ms. Manasi Nabar

Private Agengies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
M/s. Total Herb Solutions P. Ltd	Development of analytical method for Herbal drugs and formulations	6 months (May 2012-October 2012)	Rs. 50,000/-	Professor K. S. Laddha	

Professor V. B. Patravale

Government Agencies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Co-Principal Investigator	Research Fellows
ICMR	Nanotechnology-based Diagnostic Module for Detection of Brucellosis	3 Years	18,44,524/-	Professor V. B. Patravale		Vyas Swati
DBT	Extraction and isolation of seabuckthorn actives for developing nanocarrier based cosmeceuticals	3 Years	58,34,000/-	Professor V. B. Patravale	Professor R. singhal	Patil Sushant, Kagliwal Lalit
DBT	Nanotherapeutics with Lipidic nanoparticles for the treatment of malaria	3 year	1,07,90,000/-	Professor V. B. Patravale		Soni Umangi, Borhade Vivek
DST	Therapeutic approaches using controlled transdermal delivery to treat neurodegenerative diseases in aging populations	3 Years	26,62,800/-	Professor V. B. Patravale		Patel Pratik

Dr. S. S. Sathaye

Government Agencies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
DST	Evaluation of antie-pileptic activity of medicinal plants in animal models of epilepsy	3 year	Rs. 30, 11, 782/-	Dr. Sadhana Sathaye	

Private agencies:

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Glenmark	Acute and sub-acute toxicity studies of Zolmitriptan	1 year	Rs. 4, 13, 625/-	Dr. Sadhana Sathaye	Jayant Sancheti, Gauresh Somani
Glenmark	Acute toxicity study of Atorvastatin + Fenofibrate combinations	1 year	Rs. 68,937/-	Dr. Sadhana Sathaye	Rahul Chaudhari, Gauresh Somani
Omniactive Health Technologies	Study of Anti-osteoporotic activity of Beta-Cryptoxanthin	6 month	Rs 3, 07,737/-	Dr. Sadhana Sathaye	Rahul Chaudhari

Professor P. R. Vavia

Government Agencies

Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Department of Biotechnology with industry collaboration	Development and Evaluation of Nanoparticular, Delivery System for Peptide drug	Jan 2007 (3 years)	Rs. 62,49,000/-	Professor P. R. Vavia	Nitin Mali
AICTE/NAFETIC/ Goldshield Ltd.	Centre For Novel Drug Delivery System	May 2003 (7 years)	Rs. 73,00,000/-	Professor P. R. Vavia	Achyut Khire

Research papers, Reviews, Book chapters, Patents

Professor P. V. Devarajan

Sr. No.	Title	Author	Journal
1	Lipomer of doxorubicin hydrochloride for enhanced oral bioavailability	Derajram M. Benival, Padma V. Devarajan	International Journal of Pharmaceutics, 423; 554-561(2012)
2	Self nanoprecipitating preconcentrate of tamoxifen citrate for enhanced bioavailability	Sonali V. Kapse, Rajiv V. Gaikwad, Abdul Samad, Padma V. Devarajan	International Journal of Pharmaceutics, 429; 104-112(2012)
3	Microemulsions and nanoemulsions for targeted drug delivery to the brain	Rajshree L. Shinde, Anil B. Jindal, Padma V. Devarajan	Current Nanoscience, 2011, 7, 119-133

Professor K. G. Akamanchi

Sr. No.	Title	Author	Journal
1	Oxidative fragmentation of oxiranes to nitriles with hypervalent iodine (V) reagents in aqueous ammonia;	Deshmukh, S.S., Huddar, S.N., Jadhav, R.R., Akamanchi, K.G.	Tetrahedron Letters, 52 : 4533(2011)
2	Copper catalyzed Gomberg-Buchmann-Hey reaction using aryldiazonium tosylate;	Chaturbhuj, G.U., Akamanchi, K.G.	Tetrahedron Letters, 52 : 4950(2011)
3	Sulfated tungstate: A green catalyst for synthesis of thiomorpholides via Willgerodt-Kindler reaction;	Salim, S.D., Pathare, S.P., Akamanchi, K.G.	Catalysis Communications, 13: 78(2011)
4	Regioselective oxidation of cholic acid & its 7β epimer by using o-iodoxybenzoic acid;	Dangate, P.S., Salunke, C.L., Akamanchi, K.G.	Steroids, 76: 1397 (2011)
5	Sulfated tungstate: A green catalyst for Strecker reaction;	Pathare, S.P., Akamanchi, K.G.	Tetrahedron Letters, 20: 871(2012)
6	Oleic acid based heterolipid synthesis, characterization and application in self-microemulsifying drug delivery system;	Kalhapure, R.S., Akamanchi, K.G.	International Journal of Pharmaceutics, 425: 9 (2012)
7	o-iodoxybenzoic acid mediated oxidative desulfurization initiated domino reactions for synthesis of azoles;	Chaudhari, P.S., Pathare, S.P., Akamanchi, K.G.	Journal of Organic Chemistry, 77: 3716 (2012)
8	Sulfated tungstate: An efficient catalyst for synthesis of thioamides via Kindler reaction;	Pathare, S.P., Chaudhari, P.S., Akamanchi, K.G.	Applied Catalysis A: General, 425-426: 125(2012)
9	Sulfated tungstate catalyzed highly accelerated N-formylation;	Pathare, S.P., Sawant, R.V., Akamanchi, K.G.	Tetrahedron Letters, 53: 3259 (2012)
10	QSAR model for chemical penetration enhancers containing long hydrocarbon chain;	Kalhapure, R.S., Salunke, C.L., Akamanchi, K.G.	Chemometrics and Intelligent Laboratory Systems, In Press

Prof P. D. Amin

Sr. No.	Title	Authors	Journal
1	Liquid antisolvent precipitation process for solubility modulation of bicalutamide,	Tarique ali meer, Kiran Sawant, Purnima. Amin	Acta Pharm., 61(435-445): Oct 2011
2	Investigational Studies on Highly Purified Fenugreek Gum as Emulsifying Agent	Sav Ajay, Amin P. D	Journal of Dispersion Science and Technology, Accepted
3	Solubility and Dissolution Rate Enhancement of Curcumin Using Kollidon VA64 by Solid Dispersion Technique	Sav Ajay. Amin P. D.	International Journal of Pharm Tech Research, Accepted June 2012
4	Cationic emulsions : An In vivo Evaluation in Dry eye Rabbit models	Desai H. R., Amin P. D	International Journal of Pharma Research and Review, Vol 1 Issue 2: July 2012
5	'Solubility Enhancement of Carvedilol Using Liquisolid Compact Technique	Meer T., Amin P. D	Journal of Applied Pharmacy , Accepted
6	Dissolution Rate Enhancement and Physicochemical Characterization of Artemether and Lumefantrine Solid Dispersions	Fule, R., Amin P.	International Journal of Drug Delivery, Accepted
7	Solid State Characterisation of Ferrous Ascorbate	Jaisvar. D., Amin P.	International Journalof Pharmacy and Pharmaceutical Sciences, Vol 4, Issue 2: 2012

Professor G. U. Chaturbhuj

Sr. No.	Title and Authors	Authors	Journal
1	Copper catalyzed Gomberg–Buchmann–Hey reaction using ryldiazonium tosylate	Ganesh U. Chaturbhuj, Krishnacharya G. Akamanchi	Tetrahedron Letters, 2011, 52, 4950–4953

Professor M. S. Degani

Sr. No.	Title and Authors	Journal	Volume No.	Pages	Year
1	Carboxylic acid-catalyzed one-pot synthesis of cyanoacetylureas and their cyclization to 6-aminouracils in guanidine ionic liquid Chavan S.S., Shelke R. U., Degani M.S.	Monatshefte fur Chemie	Accepted	--	2012
2	Ionic liquid mediated one-pot synthesis of 6-aminouracils Chavan S.S., Degani M.S.	Green Chemistry	Accepted	--	2012
3	Microwave accelerated synthesis of 2-aminothiophenes in ionic liquid via three component Gewald reaction Chavan, Sunil S.; Pedgaonkar, Yogesh Y.; Jadhav, Ananda J.; Degani, Mariam S.	Indian Journal of Chemistry, Section B: Organic Chemistry Includ-ing Medic-inal Chemistry	51B(4)	653 - 657	2012

4	A single-step, mild, neutral, catalyst-free method for cyanohydrin synthesis Degani, M.S., Kakwani, M.D., Desai, N.P., Bairwa, R.	Monatshefte fur Chemie,	143 (3)	461-465	2012
5	Microwave-assisted ligand-free, base-free Heck reactions in a task-specific imidazolium ionic liquid Dighe M. G., Degani M. S.	ARKIVOC	11	189-197	2012
6	Ionic Liquid catalyzed 4, -disubstituted-3-cyano-2- pyridone synthesis under solvent-free conditions Chavan S.S., Degani M.S.	Catalysis Letters	141 (11)	1693-1697	2011
7	Synthesis and preliminary biological evaluation of novel N-(3-aryl-1,2,4-triazol-5-yl) cinnamamide derivatives as potential antimycobacterial agents: An operational Topliss Tree approach. Kak- wani, M.D., PalsuleDesai, N.H., Lele, A.C., Ray, M., Rajan, M.G.R., Degani, M.S.	Bioorganic & Medicinal Chemistry Letters	21 (21)	6523-6526	2011
8	Pharmacophore Modeling and Density Functional Theory Analysis for A Series of Nitroimidazole Compounds with Antitubercular Activity Tawari, N.R., Degani, M.S.	Chemical Biology and Drug Design	78	408-417	2011

Professor A. R. Juvekar

No.	Title and Authors	Journal	Vol. No.	Pages	Year
1.	In vitro antioxidant and anti-arthritic activities of Shilajit, Rege A., Juvekar P, Juvekar A	International Journal of Pharmacy & Pharmaceutical Sciences	4(2)	650-653	2012
2.	Neuropharmacological Evaluation of the Methanolic Extract of Couroupita guianensis Aubl. Flower in Mice, Vinod H. Gupta, Mahendra A. Gunjal, Shaijesh S. Wankhede, Vishal S. Deshmukh, Archana R. Juvekar	International Journal of Pharmaceutical & hytopharmacological Research	1(5)	242-246	2012
3.	Antioxidant and free radical scavenging potential of Pithecellobium dulce Benth seed extracts, Dnyaneshwar M. Nagmoti, Dharmendra K. Khatri, Parikshit R. Juvekar, Archana R. Juvekar	Free radicals and antioxidants	2(2)	37-43	2012
4.	Phytochemical & pharmacological studies on the leaves of Couroupita guianensis Aubl, Kulkarni M., Wakade A., Ambaye R., Juvekar A.,	Pharmacologyonline	3	809-814	2011
5.	In vivo analgesic activity of methanolic extract of Dillenia indica L. leaves, Yeshwante S B, Juvekar AR, Nagmoti DM, Wankhede SS	Pharmacologyonline	3	1084-1096	2011
6.	In vitro lipid peroxidation inhibitory and anti-arthritic activities of some Indian medicinal plants, Rege A. A., Juvekar P.R., Juvekar A. R.	Indian Drugs	49(6)	31-35	2012
7.	Antidiabetic and antihyperlipidemic effect of Alstonia Scholaris Linn bark in Streptozotocin induced diabetic rats, Deepti Bandawane, Archana Juvekar, Manasi Juvekar;	Indian Journal of Pharmaceutical Education and Research	45(2)	114-120	2011
8.	An evaluation of the antidiabetic effects of Elaeocarpus ganitrus in experimental animals, Amolkumar K. Hule, Abhishek Shah, Manoj Gambhire, Archana Juvekar	Indian Journal of Pharmacology	43(1)	56-59	2011
9.	In vitro evaluation of homeopathic drugs for antioxidant activity, Rege A., Choliparambil P., Juvekar M, Juvekar A,	Indian Drugs	48 (12)	45-47	2011

Professor K.S.Laddha

Sr. No.	Authors	Title of Paper	Journal (Year) Vol, pp
1	Katekhaye S., Gavit R. & Laddha K.S.	A simple method for isolation of sesamin from Sesamum indicum	Indian drugs, 48(07): 54-58, July 2011.
2	Katekhaye S. D., Shinde P. B. & Laddha K. S.	Isolation and hptlc method development for filixic acid pbp from Dryopteris flix-mas	International journal of Phytopharmacy Vol. 1(1) pp. 1-7 Sept-Oct 2011.
3	Nabar M., Pimpalgaonkar P.B. & Laddha K. S.	Studies on sodhana prakriya of Gunja (Abrus precatorius Linn.) seeds.	Indian Journal of Traditional Knowledge, Vol 10 (4), pp. 693-696, Oct 2011.
4	Ferreira G. M. & Laddha K. S.	A new method for isolation of plumbagin from P.zeylanica roots	Indian drugs, 48(08): 44-45, August 2011.
5	Ferreira G. M. & Laddha K. S.	Synthesis of ether derivatives of embelin	Indian drugs, 48(09): 40-43, September 2011.
6	Babar S. B. & Laddha K. S.	Extraction, isolation and synthesis of derivatives of ursolic acid	Indian drugs, 49(01): 33-37, January 2012.
7	Shinde P. B. and Laddha K. S.	simple method for isolation of marmelosin (Imperatorin) from fruits of Aegle marmelos Correa.	Indian Drugs, 49(2); 45-47, Feb 2012.
8	Katekhaye S.D. Kale M. S. and Laddha K. S.	A simple and improved method for isolation of karanjin from Pongamia pinnata Linn. seed oil	Indian Journal of Natural Products and Resources, Vol.3(1), pp.131-134, March 2012.

9	Kale M.S, and Laddha K. S.	Characterization of fixed oil from seeds of Momordica tuberose (Roxb.) Cogn. (Cucurbitaceae) fruits by GC-MS	Indian drugs, 49(04): 39-42, April 2012.
10	Katekhaye S. D., Mulik M. B. and Laddha K. S.	Identification of constituents of the essention oil isolated from leaves of Clerodendrum phlomidis Linn. by GC-MS	Research Journal of Phytochemistry, 2: 1-8, 2012.

Professor V. B. Patravale

Sr. No.	Title and Authors	Journal	Vol. No.	Pages	Year
Research articles:					
1	A New Stability-Indicating HPLC Method for Simultaneous Determination of Curcumin and Celecoxib at Single Wavelength: an Application to Nanoparticulate Formulation; Dalapathi B. Gugulothu and Vandana B. Patravale	Pharmaceutica Analytica Acta	DOI: http://dx.doi.org/10.4172/2153-2435.1000157		2012
2	A Versatile High Performance Liquid Chromatography Method for Simultaneous Determination of Three Curcuminoids in Pharmaceutical Dosage Forms; Dalapathi B. Gugulothu, Clara B. Fernandes and Vandana B. Patravale	Pharmaceutica Analytica Acta	DOI: http://dx.doi.org/10.4172/2153-2435.1000156		2012
3	Formulation, Rheology, & Hypolepidemic Activity of Vegetable Oil-Based Eggless & Low-Fat Food Emulsions; Kedar R. Kumthekar, Vandana B. Patravale & Jayashree M. Nagarkar	Journal of Dispersion Science & Technology	33 (7)	1006-1011	2012
4	Mango kernel fat: A novel lipid source for the fermentative production of sophorolipid biosurfactant using Starmerella Bombicola NRRL-Y 17069; Vishal J. Parekh, Vandana B. Patravale and Aniruddha B. Pandit	Annals of Biological research	3 (4)	1798-1803	2012
5	Clotrimazole nanoemulsion for malaria chemotherapy. Part I: Preformulation studies, formulation design and physiochemical evaluation; Vivek Borhade, Shobhona Sharma, Sulbha Pathak and Vandana Patravale	International Journal of Pharmaceutics	431(1-2)	138-148	2011
6	Clotrimazole nanoemulsion for malaria chemotherapy. Part II: Stability assessment, in vivo pharmacodynamic evaluations and toxicological studies; Vivek Borhade, Shobhona Sharma, Sulbha Pathak and Vandana Patravale	International Journal of Pharmaceutics	431 (1-2)	149-160	2012
7	Antioxidant-Rich Extract from Dehydrated Seabuckthorn Berries by Supercritical Carbon Dioxide Extraction; Lalit D. Kagliwal, Anuradha S. Pol, Sushant C. Patil, Rekha S. Singhal, Vandana B. Patravale	Food Bioprocess Technology	DOI : http://dx.doi.org/10.1007/s11947-011-0613-8		2011
8	Separation of bioactives from seabuckthorn seeds by supercritical carbon dioxide extraction methodology through solubility parameter approach; Lalit D. Kagliwal, Sushant C. Patil, Anuradha S. Pol, Rekha S. Singhal, Vandana B. Patravale	Separation & Purification Technology	80	533–540	2011
9	AmbiOnp: Solid Lipid Nanoparticles of Amphotericin B for Oral Administration; Pratik Patel and Vandana Patravale	Journal of Biomedical Nanotechnology	7(5)	632–639	2011
10	N. T. Pandit and V. B. Patravale; Design & Optimization of a Novel Method for Extraction of Genistein	Indian Journal of Pharmaceutical Sciences	73(2)	184-192	2011
Review Articles:					
11	The upcoming field of theranostic nanomedicine: an overview	Journal of Biomedical Nanotechnology	8	1-24	2012
12	Recent trends in in-vitro nanodiagnostics for detection of pathogens; Siddhesh Shinde, Clara Fernandes and Vandana Patravale	Journal of Controlled Release	159 (2)	164-180	2012
13	Nanocarriers for effective topical delivery of anti-infectives; Priyanka Prabhu, Vandana Patravale, and Medha Joshi	Current Nanosciences	8(4)	491-503	2012
14	Overcoming poor oral bioavailability using nanoparticle formulations- opportunities & limitations; Preshita Desai, Abhijeet Date & Vandana Patravale	Drug Discovery Today: Technologies	DOI:http://dx.doi.org/10.1016/j.ddtec.2011.12.001 2011		
15	Novel Targets for Malaria Therapy; Priyanka Prabhu and Vandana Patravale	Current Drug Targets	12	2129-2143	2011
16	Design and Optimization of a Novel Method for Extraction of Genistein; N. Pandit and V. Patravale	Indian journal of pharmaceutical sciences	73(2)	184-192	2011

Dr. S. S. Sathaye

Sr. No.	Title	Journal	Vol no.	Pages	Year
1	Redkar RG and Sathaye S. Determination of polyphenolic content and antioxidant activities of essential oil of Ocimum sanctum L.	Research Journal of Pharmaceutical, Biological and Chemical Sciences	3(2)	964-976	2012
2	Sathaye S, Amin P, Mehta V, Zala V, Kulkarni R, Kaur H, Redkar R. Immunomodulatory Activity of Aqueous extract of Murraya koenigii, L in Experimental Animals.	International Journal of Toxicological & Pharma-cological Research.	3(4)	07-12	2012
3	Sadhana Sathaye, Poornima Amin, Vinam Mehta, Vijay Zala, Ramesh Kulkarni, Harpreet Kaur and Roopali Redkar. Hepatoprotective effects of Murraya koenigii L against ethanol-induced liver toxicity model in experimental animals.	International journal of Pharma and Bio sciences	3(1)	P430-438	2012
4	Phytochemical and Pharmacological investigations of Eclipta alba (Linn.) Hasak leaves for antiepileptic activity	International Journal of Pharmacy and Pharmaceutical Sciences (In press)			
5	Chemopreventive Potential of an Ethyl Acetate Fraction from Curcuma Longa is Associated with Upregulation of p57kip2 and Rad9 in the PC-3M Prostate Cancer Cell Line	Asian Pacific Journal of Cancer Prevention	Vol 13		2012

Dr. V. N. Telvekar

No.	Title and Authors	Journal	Vol.	Pages	Year
1	Novel 2-(2-(4-aryloxybenzylidene) hydrazinyl) benzoth-iazole derivatives as anti-tubercular agents Vikas N. Telvekar*, Vinod Kumar Bairwa, Kalpana Satardekar, Anirudh Bellubi	Bioorganic Medicinal Chemistry Letters	22	659	2012
2	Simple and facile benzylic C-H oxidation using (Diacetoxyiodo) benzene and catalytic sodium azide Vikas N. Telvekar*, Kulbhushan A. Sasane	Synthetic Communication	42	1335	2012
3	Novel N'-benzylidene benzofuran-3-carbohydrazide derivatives as anti-tubercular & anti-fungal agents Vikas N. Telvekar*, Anirudh Bellubi, Vinod Kumar Bairwa, Kalpana Satardekar	Bioorganic Medicinal Chemistry Letters	22	2343	2012
4	Simple & Efficient Method for the Preparation of Aryl Azides using Sonication Vikas N. Telvekar*, Kulbhushan A. Sasane	Synthetic Communication	42	1085	2012
5	A Novel Method for Bromodecarboxylation of α,β-Unsaturated carboxylic Acids using Catalytic Sodium Nitrite Vikas N. Telvekar*, Balaram S. Takale	Tetrahedron Letters	52	2394	2011
6	Pharmacophore Development and Docking Studies of the HIV-1 Integrase Inhibitors Derived from Nmethylpyrimidones, Dihydroxypyrimidines & Bicyclic pyrimidinones Vikas N. Telvekar*, Kavit N. Patel	Chemical Biology & Drug Design	78	150	2011
7	Efficient protocol for the synthesis of Quinoxaline, Benzoxazole Derivatives using Glycerol as Green Solvent Harshal M. Bachhav, Saket B. Bhagat, Vikas N. Telvekar*	Tetrahedron Letters	52	5697	2011
8	Pharmacophore and 3D-QSAR Studies on 1-Sulfonyl-4-acylpiperazines as Selective cannabianoid-1 Receptor (CB1R) Inverse agonists Vikas N. Telvekar*, Lalit B. Thakur, Prashant B. Jagdhane, Yogesh D. Manohar	Letters in Drug Design and Discovery	8	659	2011
9	Synthesis of α-Azido Ketones & Esters using Recyclable Hypervalent Iodine Reagent Vikas N. Telvekar*, Hemlata V. Patile	Synthetic communication	41	131	2011

Professor P. R. Vavia

Sr.	Title and Authors	Journal	Vol. No.	Pages	Year
1	Effect of decisive formulation variables on bioencapsulation efficiency and integrity of yeast biocapsules for oral itraconazole delivery Mayur Sangwai, Pradeep Vavia	Journal of Microen-capsulation	28 (4)	311-322	2011
2	Cyclodextrin nanosponges as effective gas carriers Francesco Trotta, Roberta Cavalli, Katia Martina, Miriam Biasizzo, Jenny Vitillo, Silvia Bordiga, Pradeep Vavia and Khalid Ansari	Journal of Inclusion Phenomena& Macr-ocyclic Chemistry	71(1-2)	189-194	2011
3	Complexation approach for fixed dose tablet formulation of lopinavir and ritonavir: an anomalous relationship between stability constant, dissolution rate and saturation solubility 4Gaurav Goyal, Pradeep Vavia	Journal of Inclusion Phenomena& Macr-ocyclic Chemistry	73 (1-4)	-	2012
4	Rice Germ Oil as Multifunctional Excipient in Preparation of Self-Microemulsifying Drug Delivery System (SMEDDS) of Tacrolimus Smita K. Pawar, Pradeep R. Vavia	AAPS PharmSciTech	13(1)	254-261	2012
5	Cyclodextrin-based nanosponges: effective nanocarrier for Tamoxifen delivery Torne S, Darandale S, Vavia P, Trotta F, Cavalli R.	Pharmaceutical Development & Technology	Doi:10.3109/10837450.2011.649855		2012

6	Osmotic pellet system comprising osmotic core and in-process amorphized drug in polymer–surfactant layer for controlled delivery of poorly water-soluble drug, Nilesh Saindane, Pradeep Vavia	Journal of Pharmaceutical Sciences	DOI: 10.1002/jps.23112	2012
7	Structural evidence of differential forms of nanosponges of beta-cyclodextrin and its effect on solubilization of a model drug, Shankar Swaminathan, Pradeep R. Vavia, Francesco Trotta, Roberta Cavalli, Simonetta Tumbiolo, Luca Bertinetti and Salvatore Coluccia	Journal of Inclusion Phenomena & Macrocyclic Chemistry	DOI: 10.1007/s10847-012-0192-y	2012
8	Cyclodextrin-based nanosponges of curcumin: formulation and physicochemical characterization, Sharad S. Darandale and Pradeep. R. Vavia	Journal of Inclusion Phen omena & Macrocyclic Chemistry	DOI: 10.1007/s10847-012-0186-9	2012
9	Synthesis and Evaluation of N-acetyl Glucosamine (NAG)-PEG-Doxorubicin Targeted Conjugates for Anticancer Delivery, Smita K. Pawar, Archana J. Badhwar, Firuza Kharas, Jayant J. Khandare, Pradeep R. Vavia	International Journal of Pharmaceutics	http://dx.doi.org/10.1016/j.ijpharm.2012.05.078	2012
10	Niosomes as a vesicular carrier for topical administration of minoxidil: formulation and in vitro assessment, Nitin Mali, Sharad Darandale and Pradeep Vavia	Drug Delivery and Translational Research	DOI: 10.1007/s13346-012-0083-1	2012
11	Fabrication of isradipine nanosuspension by anti-solvent microprecipitation–high-pressure homogenization method for enhancing dissolution rate and oral bioavailability, Dnyanesh B. Shelar, Smita K. Pawar and Pradeep R. Vavia	Drug Delivery and Translational Research	DOI: 10.1007/s13346-012-0081-3	2012
12	Development, characterisation and evaluation of supersaturated triglyceride free drug delivery (s-TFDDS) of lornoxicam D. M. Bramhane, N. V. Jadhav and P. R. Vavia	Drug Delivery and Translational Research	DOI: 10.1007/s13346-012-0084-0	2012

Professor Padma V. Devarajan

No.	Inventors	Title	Country	Funding agency
1	Sonali V. Kapse, Anil B. Jindal and Padma V. Devarajan	Pharmaceutical Compositions for Colloidal Drug Delivery	PCT application	self
2	Sonali V. Kapse, Anil B. Jindal and Padma V. Devarajan	Pharmaceutical Compositions for Colloidal Drug Delivery	Inida	self

Professor P. R. Vavia

No.	Inventors	Title	Country	Funding agency
1	P. R. Vavia, Khan Mohammed Majed, Sandip Chavan	Pharmaceutical formulation comprising combination of metformin and acarbose	India	Self
2	P. R. Vavia, Mayur Sangwai	Biocapsules for drug delivery		
3	P. R. Vavia, Gaurav Goyal	Amine resistant and nonresistant silicone adhesive formulations of fentanyl and devices for transdermal drug delivery		
4	P. R. Vavia, Achyut Khire	Novel Silicone pressure sensitive adhesive composition for transdermal drug delivery		
5	P. R. Vavia, Sharad Darandale	Oral pharmaceutical composition for controlled release of drug		
6	P. R. Vavia, Sharad Wawdhane	A novel Multiparticulate controlled porosity osmotic pump of oxybutynin hydrochloride		
7	P. R. Vavia, Dinesh Brahmane	Lornoxicam cyclodextrin & amino acid ternary inclusion complex		

Professor M. S. Degani

No.	Inventors	Title	Country	Funding agency
1	Dr. (Mrs.) Mariam Sohel Degani, Ms. Nutan Hanmant Palsule Desai, Ms. Arundhati Chandrashekhar Lele	Novel 2,4 diamino nitrogen heterocycles as folate inhibitors	India	DBT

Professor K. G. Akamanchi

No.	Inventors	Title	Country	Funding agency
1	Rahul S. Kalhapure and Krishnacharya G. Akamanchi	Dendritic anionic surfactants	India	self

Professor P. D. Amin

No.	Inventors	Title	Country	Funding agency
1	Meer Tarique Ali, Patole Rahul, Fule Ritesh, Amin Purnima	Preparation and use of oligosaccharide imprinted mesoporous silica	India	Self
2	Amin Purnima, Sharma Vanita	Pharmaceutical Compositions containing Rifampicin using Hot melt extrusion	India	Self

Professor V. B. Patravale

No.	Inventors	Title	Country	Funding agency
1	Patravale V., Joshi M., , Sharma S.	Lipidic nanoparticulate based dosage forms of antiparasitics and antiinfectives	Indian patent (No.248977)	Self
2	Khamar B., Gogia A. ,Laddhha R., Khan I. , Patravale V., Modi I.	Pharmaceutical composition of taxoids	WIPO Patent Application (WO/ 2012/ 063182)	Cadila Pharmaceuticals
3	Patravale V., Desai P.,Deshpande V., Gokarna V.	Pharmaceutical composition for bioenhancement of active agents	Provisional Indian patent (1108/ MUM/2012)	Self
4	Patravale V., Patel P.,, Kalia Y.,,Patil S., Kalria D.	Provisional Indian patent	(1218/ MUM/2012)	Self

Endowment lectures

Sr.	Date	Fellowship	Distinguished Speaker/ Affiliation	Title of Lecture
1	October 1, 2011	Foundation day alkyl amines – uict foundation day speaker endowment lecture	Dr. Sanyog Jain, Associate Professor, Centre for Pharmaceutical Nanotech-nology, Dept. of Pharm-[aceutics,National Institute of Ph-armaceutical Education and Research (NIPER), SAS Nagar (Mohali) , Punjab-160062	Design, Synthesis and Biological Evaluation of Novel Multifunctional Carbon Nanotubes Based "Smart" Drug Delivery Platform
2	March 17, 2012	Themis chemicals ict diamond jubilee dist-inguished fellow in pharmaceutical science – lecture	Professor Dr. P. S. Ramani, Senior Consultant Neurospinal Sur-geon, Lilavati Hospital & Rese-arch Centre, Mumbai. INDIA	From Mixture to Mutation - The March of Medicine
3	April 27, 2012	Professor S. K. Pradhan endowment lectures	Dr. Susheel Durani, Professor, Department of Chemistry IIT Bombay, Powai, Mumbai – 400076	Chemical Interactions and Biomolecular Ontogeny: The Puzzles of Stereochemistry and Symmetry in Protein Structure
4	April 27, 2012	Professor S. K. Pradhan endowment lectures	Professor Goverdhan Mehta, FNA, FRS National Research Professor Lilly Grantee and Jubilant - Bhartia Chair, School of Chemistry, University of Hyderabad, Hyderabad 500046	Lecture 1: Celebrating Chemistry for a Better World: Lessons and Inspiration from Organic synthesis Lecture 2: Harnessing Synergy Between Natural Products, Organic Synthesis and Drug Discovery for Human Wellbeing
5	March 29, 2012	Professor (mrs) m.R. Baichwal distinguished fellow in pharmaceutical sciences" lecture,	Dr. Shobhona Sharma Professor, Department of Biological Sciences, TIFR, Mumbai	Malaria Infected Red Cells: Can We Target Them
6	March 29, 2012	The cipla distinguished fellow in pharmaceutical science" lecture,	Dr. Vijay Walame Consulting Homoeopath Lokmanya Hospital, Chinchwad, Pune	Homeopathy: An Emerging Pharma-ceutical Science
7	30th April 2012	Professor V. M. Kulkarni endowment lecture,	Prof (Dr). Kanjaksha Ghosh Director, National Institute of Immunohaematology, Mumbai	Pharmacotherapy of Sickle Cell Ana-emia: Why Indian Pharmaceutical Industry is Silent
8	May 11, 2012	The Professor B. D. Tilak visiting fellowship lecture,	Professor P. Thyagarajan Pro - Chancellor (Research), Sri Ramachandra University, Chennai	Herbal Drugs as Block Busters: The Way Forward
	14th – 15th Nov. 2011.	Indo-US Symposium on Nanomedicine: Prospects and Challenges, Co-Chairperson –Scientific and Organizing Committee, Mumbai, India		

POSTER PRESENTATIONS

1. Bioadhesive spontaneous plug forming teat dips. Sandhya Pranatharthiharan and Padma V. Devarajan Presented at the 38th Annual Meeting & Exposition of the Controlled Release Society, held at National Harbor, Maryland, July 30 – August 3, 2011.
2. ATIS Gelling Nasal Spray Of Tizanidine Hydrochloride For Enhanced Bioavailability And High CNS Uptake. N. Utwani, S.Pranatharthiharan, Padma. V. Devarajan Presented at The Indian Pharmaceutical Association "Regulatory Challenges - The Way Forward" 5th Symposium on Nasal and Pulmonary Drug Delivery held at Hotel Novotel, Juhu, Mumbai, 10-11 November, 2011.
3. Biodistribution of Solid Lipid Nanoparticles of Buparvaquone by Scintigraphy. Soni M.P., Pawar M., Vanage G., Gaikwad R. V., Samad A.,and Padma V. Devarajan Personated at the INDO-US Joint Symposium on Nanomedicine: Prospects and Challenges to be held at Institute of chemical Technology, Mumbai from 14th – 15th November, 2011.
4. Intravenous Repeated Dose Sub-Acute Toxicity Profiling of LIPOMER Doxycycline (Lipomer-DH), Dhumal R D, Mahajan M V , Soni M , Bhagat S T, Devarajan P V, Gaikwad R V, Samad A, Vanage G R Personated at the INDO-US joint symposium on nanomedicine: prospects and challenges to be held at Institute of chemical Technology, Mumbai from 14th – 15th November, 2011
5. Role Of Folate On The Biodistribution Of Polyethylene Sebacate Nanoparticles Loaded With Anti-Tb Drugs, Ranee B.J., Mitesh Patel., Devarajan Padma V., V.C. Malshe, Gaikwad R. V.,Samad A, Presented at The Indo-US Joint Symposium on Nanomedicine: Prospect and challenges, held at ICT, Mumbai on 14-15th Nov, 2011.
6. Self Nanoprecipitating Preconcentrate of Primaquine Phosphate.Datkhile V. R., Sulgudle S.S.,Padma V. Devarajan Presentated at the INDO-US Joint Symposium on Nanomedicine: Prospectus And Challeges to be held at Mumbai from 14 - 15 November 2011.
7. "Lung Targeted Biodegradable Rifampicin Nanoparticles For Oral Administration" Mitesh D. Patel, Abdul Samad, Vinod C. Malshe and Padma V. Devarajan. Presentated at the INDO-US join symposium on Nanomedicine: Prospects and Challenges, 14-15th November, 2011 held at Institute of Chemical Technology, Mumbai.
8. "Targeted Pulmonary Delivery Following Oral Administration of Polymeric Nanoparticles of Rifampicin" Praveen V. Date, Vilas N. Malode, Mitesh D. Patel, Abdul Samad and Padma V. Devarajan. Presentated at the 12th International Symposium on Advances in Technology and Business Potential of NDDS", 9-10th February, 2012 held at J.W. Marriott Hotel, Mumbai.
9. "Orally Administered Polymeric Nanoparticles of Anti-Tubercular Drug Combinations with Enhanced Lung Concentration". Mitesh D. Patel, Praveen V. Date, Abdul Samad, Vinod C. Malshe and Padma V. Devarajan. Presentated at the 12th International Symposium on Advances in Technology and Business Potential of NDDS", 9-10th February, 2012 held at J.W. Marriott Hotel, Mumbai.
10. Doxorubicin loaded gold nanoparticles using poly(Aspartic acid as a novel reducing agent Sameera V. Khandekar, M. G. Kulkarni, Padma V. Devarajan.,) Personated at the 12th International Symposium on Advances in Technology and Business Potential of NDDS", held at J.W. Marriott Hotel, Mumbai-10th February, 2012.
11. Design and characterization of core shell gold nanoparticles for anti-HIV therapy, B. R. Dalvi, Absar and P. V. Devarajan presented at 12th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems to be held at Mumbai from 9th-10th February 2012
12. Wavikar P. R. and Vavia P. R. "Solid Lipid Nanoparticles Based Novel Topical Formulation of Terbinafine Hydrochloride" (Oral), 38th Annual Meeting and Exposition of Controlled Release Society, Maryland, USA, July 2011.
13. Mali N. D. and Vavia P. R. "Serratiopeptidase /chitosan nanoparticle carriers prepared by polyelectrolyte complexation", 38th Annual Meeting and Exposition of Controlled Release Society, Maryland, USA, July 2011.
14. S. S. Darandale, P. R. Vavia, "β-Cyclodextrin based Nanosponges of Curcumin: Formulation and Physicochemical Characterization", 2nd European Conference on Cyclodextrin, Italy, October 2011.
15. M. B. Sangwai, P. R. Vavia, "Amorphous Ternary Cyclodextrin Nanocomposites of Telmisartan: Formulation, In-Vitro Characterization and In-Vivo Biovariability Studies", 2nd European Conference on Cyclodextrin, Italy, October 2011
16. K. P. Pagar, P. R. Vavia, "Felodipine β-Cyclodextrin Complex As an Active Core for Predictable Pulsatile Chronotherapeutics in the Treatment of Hypertension", 2nd European Conference on Cyclodextrin, Italy, October 2011.
17. Yeola G. S. and Vavia P. R. "Development of an Oral Push Pull Osmotic Pump of Buprenorphine", AAPS Annual Meeting and Exposition, Washington DC, USA, October 2011.
18. G. Yeola, P. Vavia, N. Babul, H. Kao, Zero-order release of buprenorphine from an osmotically modulated once-a-day oral dosage form, The 31st Annual Scientific Meeting of the American Pain Society, 2012.
19. Pawar S. K.. and Vavia P. R. "Microemulsion Preconcentrate for Oral Bioavailability Enhncement of Poorly Soluble Immunosuppressant Drug", AAPS Annual Meeting and Exposition, Washington DC, USA, October 2011.
20. S. G. Ingle, S. S. Chavan, P. R. Vavia , "Formulation of Solid Lipid Nanoparticle Based Nasal Spray of Budesonide", Indo-US Joint Symposium on Nanomedicines: Prospects and Challenges , Mumbai, November 2011
21. N. V. Jadhav, D. M. Bramhane, P. R. Vavia., "Development, Charecterization and Evaluation of Supersaturated Triglyceride Free Drug Delivery System(s-TFDDS) of Lornaxicam", Indo-US Joint Symposium on Nanomedicines: Prospects and Challenges, Mumbai, November 2011
22. S. S. Darandale, N. D. Mali, P. R. Vavia., " Niosomal Drug Delivery System of Minoxidil for Topical Application", Indo-US Joint Symposium on Nanomedicines: Prospects and Challenges , Mumbai, November 2011
23. S. K. Pawar, D. B. Shelar, P. R. Vavia., "Preparation and Physicochemical Charaterization of Isradipine Nanosuspension", Indo-US Joint Symposium on Nanomedicines: Prospects and Challenges , Mumbai, November 2011
24. K. D. Patel, P. R. Vavia, "Positively charged nanocrystalline taxane for oral delivery: Size engineering to overcome biological barriers", NanoBio 2012, Kochi, India.
25. S. S. Darandale, S. K. Pawar, P. R. Vavia, Doxorubicin loaded niosomal formulation with glucose targeting ligand: An approach for active targeting to tumor", NanoBio 2012, Kochi, India.
26. S. K. Pawar, S. S. Darandale, P. R. Vavia, "Glucose targeted curcumin loaded nano-niosomes for the anticancer drug targeting", NanoBio 2012, Kochi, India.
27. M. B. Sangwai, S. M. Sardar, P. R. Vavia, "Nano-emulsified orlistat embedded multi unit pellet system (MUMPS) for enhanced dissolution and lipase inhibition", NanoBio 2012, Kochi, India.
28. P. Mehta, K. D. Patel, V. Swaminathan, P. R. Vavia, "Eudragit E-Curcumin microspheres for the treatment of Helicobactor pylori induced peptic ulcer", NanoBio 2012, Kochi, India.
29. K. P. Pagar, P. R. Vavia, "Rivastigmine loaded poly[La-(Glc-Leu] copolymeric nanoparticulate drug delivery system for the treatment of Alzheimers disease", NanoBio 2012, Kochi, India.
30. Deshpande R.S. and Vavia P.R., "Development and Evaluation of Swellable Core Osmotic Tablets of Paliperidone", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.

31. Jadhav P. H. and Vavia P.R., "Development and Evaluation of Monolithic Transdermal Patch for Dementia Associated with Alzheimer's Disease", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
32. Mehta P. D. and Vavia P.R., "Candesartan cilexetil nanocrystals: A promising formulation exhibiting enhanced aqueous solubility and dissolution rate", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
33. Jadhav N. V., Bramhane D.M. and Vavia P.R., "Development and Evaluation of Lornoxicam Nanosuspension by High Pressure Hogenizer (HPH)", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
34. Patel K.D., Chavan S. S. and Vavia P.R., "Compressible Hot Melt Extruded (HME) Microparticles of Oxcarbazepine for Dissolution Enhancement ", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
35. Wavikar P.R., Chavan S. S. and Vavia P.R., "Development and Evaluation of New Multiple Unit Carbamazepine Sustained Release Solid Dosage Form", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
36. Sardar S.M. and Vavia P.R., "Development of Cyclodextrin Based Ternary pH Independent IR Tablet Formulation of Glipizide", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
37. Ingle S. G., Mali N. D. and Vavia P.R., "Nanosuspension: A Novel Strategy for Combination of Lopinavir and Ritonavir", 63rd Indian Pharmaceutical Congress, Bengaluru, December 2011.
38. Dharmendra K Khatri, Samee F. Mukadam, Parikshit R Juvekar, Archana R Juvekar, Antiparkinson activity of aqueous and hydroalcoholic extract of Pisum sativum on rotenone induced Parkinson models, 12th International congress of Ethnopharmacology, School of Natural Product Studies, Jadavpur University Kolkata, India, 17-19th Feb 2012.
39. Majula konka, Saroj Varpe, Archana R. juvekar, Evaluation of anti-inflammatory activity of Typha angustifolia , 12th International congress of Ethnopharmacology, School of Natural Product Studies, Jadavpur University Kolkata, India, 17-19th Feb 2012.
40. Pharmacological Evaluation Of Thymol In Experimental Models Of Epilepsy 12th International Congress of Ethnopharmacology Jadavpur University, Kolkata February 17-19, 2012
41. Cytotoxic Evaluation of Helicteres isora 12th International Congress of EthnopharmacologyJadavpur University, Kolkata February 17-19, 2012
42. Phytochemical evaluation of couroupita guianensis aubl. Leaves 12th International Congress of Ethnopharmacology Jadavpur University, Kolk-ata February 17-19, 2012
43. Antiglycation and Trigonella foenuman Antiglycationand free radical scavenging activity of Trigonella foenum and Trachyspermum copticum12th International Congress of EthnopharmacologyJadavpur University, Kolkata February 17-19, 2012
44. Antioxidant, Antiglycation, Antihyperglycemic and α-amylase inhibitory activitiy of saraca indica flower.12th International Congress of Ethnopharmacology Jadavpur University, Kolkata February 17-19, 2012
45. Design, Synthesis and evaluation of 2-phenyl-4,5,6,7-tetrahydrobenzo [b]thiophene 3-carboxamides as Anti-inflammatory agents Indalkar K. S., Chaturbhuj G. U at 63rd Indian Pharmaceutical Congress 2011, Chennai
46. Sulfated Tungstate Catalyzed Synthesis of 5-Substituted 1H-Tetrazoles; Katkar K.V., Pathare, S.P., Akamanchi, K.G., 14th National Symposium in Chemistry, Trivandrum, National Institute for Interdisciplinary Science and Technology, (CSIR-NIIST), Trivandrum. 6-8th Feb 2012
47. O-iodoxybenzoic acid mediated oxidative desulfurization initiated domino reactions for synthesis of azoles; Chaudhari, P.S., Pathare, S.P., Akamanchi, K.G., Catalyst-2011, Dr. Reddy's Chemistry Conclave, 16-17th Dec 2011
48. Sulfated Tungstate Catalyzed Synthesis of 5-Substituted 1H-Tetrazoles; Katkar K.V., Akamanchi, K.G. Catalyst-2011, Dr. Reddy's Chemistry Conclave, 16-17th Dec 2011
49. Oxidative fragmentation of oxiranes to nitriles with iodine in aueous ammonia; Jadhav, R.R, Akamanchi K.G.Catalyst-2011, Dr. Reddy's Chemistry Conclave, 16-17th Dec 2011
50. o-iodoxybenzoic acid/triethylamine: A new sytem for synthesis of 2- amino/thio-1,3,4-oxadiazoles via oxidative cyclodesulfurization of thiosemicarbazides; Chaudhari, P.S., Akamanchi, K.G., Twelfth Tetrahedron Symposium, Sitges, Barcelona, Spain, Twelfth Tetrahedron Symposium, 21-24th June 2011
51. Heck reactions using generation 1poly(propylene imine) dendrimer salicylaldimine ligand complexed with Pdcl2 Kalhapure, R.S., Akamanchi, K.G., National technology day and international year of chemistry celebration, ICT-Mumbai, 11-12th May 2011
52. Swati S. Vyas, Vandana B. Patravale, Mariam S. Degani, Polymeric prodrug of Norfloxacin with a hydrolysis mediated slow release profile and its antimicrobial evaluation, Controlled Release Society Indian Chapter, Mumbai, India, 9-10 Feb 2012.
53. Poster presentation on Ionic liquid catalysed synthesis of 4,6-disubstituted-3-cyano-2-pyridones under solvent free and ambient conditions by Rupesh U. Shelke, Sunil S. Chavan and Mariam S. Degani at 6th CRSI-RSC Symposium in Chemistry, Thiruvananthapuram, February 2-5, 2012.
54. Poster presentation on Design and synthesis of cinnamide derivatives as antitubercular agents. Nutan H. Palsule Desai, Manoj Kakwani, Arundhati C. Lele, M. K. Ray, M. G. R. Rajan, Mariam S. Degani. Gordon Research Conference on Tuberculosis Drug Development, Barga, Italy. Date 3rd-7th July 2011.
55. Fabrication of Lipid Nanocarrriers of Levodopa Using Supercritical Fluid Technology; Fernandes C. B and Patravle V.B. at 10th International Symposium on Supercritical Fluids (ISSF 2012), San Francisco, CA, USA, 13-16th May 2012
56. Influence of processing parameters on generation of lipid nanoparticles of Genistein using Supercritical Fluid Technology; Pai A. R. and Patravle V.B. at10th International Symposium on Supercritical Fluids (ISSF 2012), San Francisco, CA, USA, 13-16th May 2012
57. Feasibility of Transdermal Delivery of Lipid Based Nanocarriers of Huperzine-A For Treatment Of Alzheimer Disease; Patel P.A., Patil S.C., Kalaria D.R., Kalia Y.N. and Patravale V.B. at 9th International Conference and Workshop on Biological Barriers - in vitro and in silico Tools for Drug Delivery and Nanosafety Research, Saarland University, Germany, 29th February – 9th March 2012
58. Bioenhancement of Curcumin Using Hot Melt Extrusion Technology: Formulation Development, In Vitro Characterization And In Vivo Pharmacokinetic Studies; Desai P. P.; Gokarna V. S.; Gugulothu D. B.; Deshpande V. D. and Patravale V. B. at Drug Delivery India 2012 - Innovations In Pharmaceutical & Manufacturing Sciences, Hyderabad,India, 24-25th February 2012
59. Development Of Mathematical Model To Predict Release Of Poorly Water Soluble Drug From Tamarind Seed Polysaccharide Matrices; Patale R.L., Desai P.P.and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
60. Engineering Nanostructured Lipidcarriers Of Genistein: Statistical Optimization; Pai A. R., Swami M. V. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 201
61. New Uses For Old Drugs: Clitrimazole Oral Nanoemulsion For Malaria; Borhade V. B., Shete H. K. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
62. Transdermal Gels Of Rosiglitazone Maleate For Alzheimer's Disease; Patil S.C., Patel P. A., Pol A.S., Kalaria D. R., Kalia Y. N. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012

63. Spectroscopic Investigation of The Time Dependant Effect Of Gastrointestinal pH On The Relative Aggregation State Of Amphotericin B Loaded Solid Lipid Nanoparticles; Chaudhari M. B., Patel P.A. and Patravale V.B at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
64. Polymeric Prodrug Of Norfloxacin With A Hydrolysis Mediated Slow Release Profile And Its Antimicrobial Evaluation; Vyas S. S., Patravale, V. B. and Degani M.S. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
65. Lyotab: Exploring The Potential Of Freeze-Drying For Development Of Sublingual Tablets Of Serratiopeptidase; Prabhu R.H., Gugulothu D.B. and Patravale V. B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
66. Hydrogel Nanoparticles Of Curcumin:Potential In Macrophage Targeting; Dalapathi B. Gugulothu, Prajakta P. Dandekar, Preshita P. Desai And Vandana B.Patravale at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
67. Hippophae Rhamnoides Berry Oil Based Nanogels For Treatment Of Chronic Dermatitis; Pol A. S., Kagliwal L., Patil S. C., Singhal R. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
68. Formulation And Characterization Of Micellar Methotrexate For Nose To Brain Delivery; Agrawal A .A.,Fernandes C.B., Dukere S. Shirsat N. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
69. Evaluation Of Blank Nanostructured Lipid Carriers (Nanoject) For Its Immunomodulatory Potential; Desai S.M , Soni U.K., Joshi M.D1, Patravale V.B., Sharma S. and Pathak S. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2011
70. Comparison Of Antimalarial Efficacy Of Nanoject: Intraperitoneal Versus Subcutaneous Administration; Prabhu P.S., Pathak S., Sharma S. and Patravale V.B. at Twelth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, 9-10th February 2012
71. Freeze Drying : Exploring Potential In Development Of Orodispersible Tablets Of Sumatriptan Succinate; Pandharipande P. P., Dalapathi G. B., Desai P.P.and Patravale V. B. at 63rd Indian Pharmaceutical Congress, Bangaluru, India, 16-18th December 2011
72. Formulation Development And Pharmacokinetics Of Curcumin Nanoparticles; Gugulothu D, B., Desai P. P., Prabhu R. H., and Patravale V. B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
73. Engineering of PLGA Nanoparticles of Retinol Acetate: Statistical Optimization; Velhal M. K., Swami M. V., Fernandes C. B., Agrawal A. A., Pai A. R., Patravale V. B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
74. A Comparative Study of Drying Methodologies For Generation Of Free Flowing Powder Of Polymeric Nanodispersion; Velhal M.K., Agrawal A.A., Fernandes C.B., Swami M.V., Patravale V.B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
75. Atovaquone Nanosuspension For Intravenous Delivery: Toxicity Assessment, Pharmacokinetics, Tissuedistribution And In Vivo Antimalarial Efficacy Studies; Borhade.V, Shete H.K. & Patravale V.B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
76. Evaluation of The Immunomodulatory Properties Of Blank Nanostructured Lipid Carriers (Nanoject) Soni U.K., Desai S.M., Joshi M.D., Patravale V.B., Sharma S., Pathak S. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
77. Statistical Optimization Of Novel Hydrogel Nanoparticles Of Retinol Acetate Using 23 Full-Factorialdesign; Velhal M.K., Fernandes C.B., Swami M.V., Agrawal A.A., Pai.A.R., Patravale V.B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
78. Novel Hydrogel Retinol Acetate Mucoadhesive Nanoparticles; Velhal M.K., Pai A.R., Fernandes C.B., Swami M.V., Patravale V.B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
79. Microemulsion Based Transdermal Delivery Of Donepezil Hydrochloride For The Treatment Of Alzheimer's Disease; Patel P. A., Patil S.C., Kalaria D. R. , Kalia Y. N. , and Patravale V. B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011
80. Influence Of Lipid Based Carrier On Transdermal Delivery Of Donepezil Hydrochloride;Patel P.A., Kalaria D. R., Pol A. S., Kalia Y. N. and Patravale V. B. at INDO-US Joint Symposium on Nanomedicine : Prospects and Challenges, Mumbai, India 14-15th November 2011

Invited lectures

Professor Padma V. Devarajan

- Delivered a Brief on "Research Highlights" at AAiPS Annual Meeting and exposition, Washington, USA, October 23–27, 2011
- Delivered talk at INDO-US joint symposium on "Nanomedicine:Prospect and Challenges" on Asymmetric lipid polymer (lipomer) nanoparticles: A design by default at ICT, Mumbi on Novembeer 14-15, 2011
- Delivered a lecture as a Resource person at the AICTE Quality Improvement Program on Serendipitious Findings in Drug Delivery: Case Studies organized at the Bharatiya Vidyapeeth Deemed University at the Poona College of Pharmacy during 6th February 2012 to 18th February 2012.

Professor M. S. Degani

- Invited talk on "Microwave assisted high speed chemistry- a technique in drug discovery" at Sinhgad Technical Education Society's Smt. Kashibai NAvale College of Pharmacy, Pune. February 24, 2012
- Invited talk on "Flouro compounds as drugs" at QIP Program on "Novel strategies in drug synthesis & drug characterization", Bharati Vidyapeeth, Pune. November 2011
- Invited talk on "Fluorination in Medicinal Chemistry: Methods & Strategies" at QIP Program on "Novel strategies in drug synthesis & drug characterization", Bharati Vidyapeeth, Pune. November 2011

Professor Pradeep Ratilal Vavia

- Invited Speaker, "Cyclodextrin-based Nanosponges: An Effective Nanocarrier for Drug Delivery" Indo-US Symposium on Nanomedicine: Prospects and Challenges, Mumbai, India, 14th – 15th Nov. 2011.

Professor Vandana B. Pat ravale

- Invited speaker to deliver a talk on "Novel Brain Targeted Nanocarrier for Migraine Therapy" at 8th of the NanoTR, Hacettepe University Ankara, Turkey, 25-29th of June 2012
- The Indian Pharmaceutical Association Convention ,Manipal College of Pharmaceutical Sciences, Manipal University, Manipal, India, on 17-18th March 2012
- Invited speaker to deliver a talk on, "Artemether delivery-Potential of nanostructured lipid carriers" at Sardar patel university, Vallabh Vidyanagar, India, 10th March 2012

- Invited speaker to deliver a talk on, "potential of lipid nanoparticulate carriers in malaria therapy" at Drug Delivery India 2012 - Innovations In Pharmaceutical & Manufacturing Sciences, Hyderabad, India, 24-25th February 2012
- Invited speaker to deliver a talk on, "Micellar Nanocarriers: Potential in brain targeting at S.M.B.T. College of Pharmacy, Nasik, India, 18th February 2012
- Invited speaker to deliver a talk at Sinhgad Technical Education Society's Smt. Kashibai Navale College of Pharmacy, Pune,India, 17th February 2012
- Invited speaker to deliver a talk on "'Micellar nanocarriers for delivery to brain" at Poona college of Pharmacy, Pune , India , 11th February, 2012

Professor P. D. Amin

- Delivered a lecture at Sinhgad College of Pharmacy, Vadgaon at Staff Development Programme on Novel Drug Delivery System-Past, Present and Future, August 2011.
- Delivered a lecture as a Resource person at the AICTE Quality Improvement Program organized at the Bharatiya Vidyapeeth Deemed University at the Poona College of Pharmacy during 6th February 2012 to 18th February 201

Awards & Scholarships

Professor P. V. Devarajan

- Fellow of the Maharashtra Academy of Sciences, India
- 2011 AAiPS Distinguished Educator and Researcher Award
- 2008 Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) Industrial Research Award for Women Scientists
- Featured as Indian Women Scientist in Chemical Industry News, June 2011
- Felicitated by Indian Chemical Council as Woman Scientist in March 2012
- Best Teacher Award – (ICT - B.Pharm 2007)
- G.P.Nair Gold Medal, J.G. Kane Memorial Medal, M.L.Khorana Memorial Prize, Pitre Memorial Prize (For First rank in B.Pharm)
- Dr. John Kapoor Foundation Travel Award and ICT Golden Jubilee Travel Award
- UDCT Scholarship during Final B.Pharm.
- U.G.C. Junior and Senior Research Fellowships during M.Pharm. & PhD (Tech)

Professor K. G. Akamanchi

- UGC-Visiting Fellow - Sardar Patel University, Vallabh Vidyanagar, Gujarat.

Professor P. D. Amin

- Featured as Indian Women Scientist in Chemical Industry News, 2011

Professor M. S. Degani

- Felicitated by Indian Chemical Council as Woman Scientist in March 2012
- Featured as Indian Women Scientist in Chemical Industry News, 2011

Professor P. D. Jain

- Ramanujan Fellowship from DST, Govt. of India

Professor Ratnesh Jain

- Ramanujan Fellowship from DST, Govt. of India
- Ramalingaswami Fellowship, DBT, Govt. of India
- INSPIRE Faculty Fellowship, DST, Govt. of India

Professor K. S. Laddha

- 'Golden Jubilee Research Fund Endowment' of Rs. 15000/- has been awarded from University of Mumbai institute of Chemical Technology, Matunga, Mumbai –19, for the research project entitled "Standardization of Plant Drugs", 1993.
- 'Senior Research Fellowship' from University Grants Commission, Ministry Of Education, New Delhi, Nov. 1989.
- 'Golden Jubilee Research Fund Endowment' of Rs. 25000/- has been awarded from University of Mumbai institute of Chemical Technology, Matunga, Mumbai –19, for the research project entitled "Evaluation of Herbal Drugs", 1993.
- 'Alumnus of the Year', Award in recognition of the achievements attained, from Principal K. M. Kundnani College of Pharmacy, Mumbai – 18, 2003.
- 'Indian Drug Best Paper Award 2008' for research paper entitled "A HPTLC densitometric determination of antioxidant constituents from chyawanprash" Indian Drugs, 45 (7), July 2008, pp. 536-541.

Professor V. B. Patravale

- Conferred Fellow of Maharashtra Academy of Sciences award ,Maharashtra Academy of sciences (2011)

Placement

No of students interested for Placement-

Sr. No	Class	Students for placement	Placed Students	Rema- ining
1	B.Pharm	21	3	19
2	B.Tech Pharma	9	4	5
3	M. Pharma	22	5	17
4	M.Tech Pharma	5	3	2
	Total	**57**	**15**	**42**

Companies Came for Campus recruitment-

- Dr. Reddy's Laboratory
- Aranca
- Sulphur Mills Ltd Mumbai
- Biocon
- Evaluserve
- TAKE solutions Chennai
- Rubicon Research
- S. ZhaveriPharmachem Ltd.
- Mylan Laboratories
- Reckitt & Benckiser
- Cosmee Pharma BASF
- Cipla Ltd
- Perkin Elmer
- Roha dye chem ltd
- RTUL Instruments

Sr. No	Name of the students	Company	Package	Course	Job Profile
1	RuchaDeshpande	Dr. Reddy's Lab.	5.5 lakhs/year	M.Tech Pharma	Process Development
2	Parag Mehta	Dr. Reddy's Lab.	3.93 lakhs/year	M.Pharm	R&D
3	ArijitMujumder	Dr. Reddy's Lab.	3.93 lakhs/year	M.Pharm	R&D
4	ShivrajSulgudle	Mylan Lab	3 lakhs/year	M.Pharm	R&D
5	Natarajan Shrikrishnan	Biocon	4.5lakhs/year	B.tech Pharma	Process Development
6	AnkitaPai	Aranca	5 lakhs/year	M.Tech Pharma	IPR
7	CharmiNagada	Aranca	4.75 lakhs/year	B.Pharm	IPR
8	Neel samant	Aranca	4.75 lakhs/year	B.tech Pharma	Business Research
9	AtulYelpale	Perkin Elmer	4.2 lakhs/year	M.Tech Pharma	Product Specialist
10	SatyaRamnath	Perkin Elmer	3.8 lakhs/year	B.Pharm	Product Specialist
11	ChayaTantri	BASF	4.2 lakhs/year	B.tech Pharma	Technical Marketing
12	RohitIyer	ReckkittBenskiser	5.5 lakhs/year	B.tech Pharma	Supply Chein Management
13	Santosh Gejage	Sulphur Mills Ltd	2.4 lakhs/year	M.Pharm	R&D
14	ChetanKhatri	Sulphur Mills Ltd	2.4 lakhs/year	M.Pharm	R&D
15	PramodJadhav	TAKE solution chennai	4lakhs/year	B.Pharm	Scientific Writing

ANNEXURE A

Abstracts of Thesis

Ph.D. (Tech)

Name of Student: Mr. Sonali V. Kapse

Name of Professor: Professor Padma V. Devarajan

COLLOIDAL DRUG DELIVERY SYSTEMS

PART-I: Self Nanoprecipitating Preconcentrate (SNP) an Innovative Drug Delivery System Polymeric nanoparticles (NP) as drug delivery systems have been extensively investigated for a wide range of applications. Despite manifold applications, technological hurdles continue to hamper their scale-up and commercialization. Nanoprecipitation is a single step, instantaneous method for reproducible nanoparticle formation. The present work deals with development of a simple yet unique approach for spontaneous preparation of polymeric nanoparticles. SNP is a simple monophasic concentrate which generates polymeric nanoparticles in-situ by spontaneous nanoprecipitation in aqueous media. SNP eliminates use of unacceptable toxic organic solvents obviates the need for nanoparticle isolation and overcomes the stability issues associated with nanoparticles.

IA: SNP of Tamoxifen Citrate (TMX): TMX is a BCS Class II non-steroidal antiestrogen agent with poor oral bioavailability and erratic absorption. TMX is used in metastatic breast cancer which spreads through lymph system; thus appropriately designed NP for lymphatic uptake could represent an advantageous approach. TMX NP could provide a dual advantage of increased bioavailability with probable lymphatic uptake.

Preparation and Evaluation: Orally acceptable TMX SNP was prepared by simple solution method. Optimization of SNP variables resulted in NP with EE (~85%) and PS (<300nm) on dilution. SNP system was characterized for reproducibility and ruggedness by evaluating the effect of variables namely mode of addition, stirring time, type, volume, temperature and pH of dispersion medium on EE and PS. NP was characterized by DSC, XRD, FTIR, FTIR imaging, ESEM and TEM. TMX SNP revealed rapid drug release. TMX SNP was found stable for 1 year as per ICH guidelines. Oral administration of radiolabeled TMX NP in rats revealed major radioactivity in stomach with no significant activity evident in internal organs. Pharmacokinetic studies in rats revealed enhanced oral bioavailability with TMX NP compared to TMX suspension indicated by higher AUC and Cmax.

IB: SNP of Doxorubicin Hydrochloride (DOX): DOX is a BCS Class III anticancer drug of choice for hepatic cancer. High water solubility of DOX results in poor EE in NP. A simple technological strategy has been proposed to enhance EE and production of DOX NP through design of SNP.

Preparation and Evaluation: DOX SNP was designed using 23 factorial approach. DOX SNP was prepared by simple solution method. Varied formulation parameters resulted DOX NP with EE (>80%) and PS (<300nm) on dilution. Surface modified DOX NP was prepared by physical adsorption of surface modifying agent. DSC, XRD revealed amorphous nature of DOX in the NP. FTIR imaging confirmed homogenous distribution of DOX in the NP. NP was characterized by FTIR and SEM. DOX SNP was found stable for 1 year as per ICH guidelines. Biodistribution in rats following intravenous administration of radiolabeled DOX NP revealed low cardiotoxicity and nephrotoxicity compared to DOX solution while surface modified DOX NP evaded RES system and indicated long circulating nature.

SNP is a simple, innovative and versatile technology platform for preparation of polymeric nanoparticles

PART-II: Culex quinquefasciatus (CQ) larvae - A model for cytotoxicity and oral drug absorption

Mosquito as an experiment model is metabolically similar to, but has distinct advantages over microbial and higher animal systems and can be considered analogous to cancerous cell with high mitotic index and similar behavior of anticancer drugs can be expected in both.

IIA: CQ Larvae – A potential model for cytotoxicity evaluation: A simple and rapid model for preliminary screening of anticancer activity has been developed in-house using CQ larvae as a cost-effective alternative to time consuming in-vitro and in-vivo models. To evaluate CQ larvae as a model for cytotoxicity, nine non-anticancer drugs were tested at 10-1000 ppm on (3rd/4th) in-star phase larvae. Time for onset of action and 100% mortality were retained as evaluation parameters. Dose dependent cytotoxicity observed with the drugs suggests feasibility of CQ larvae as a simple model for rapid cytotoxicity evaluation and could provide a viable alternative for in-vitro cell-line studies.

IIB: CQ Larvae – A model for prediction of oral drug absorption: Prediction of drug absorption through GIT is key issue in selection of new entities. Available absorption models are reliable, time consuming and involve financial and ethical considerations. Semi in-vivo models could reduce, replace and refine use of higher animal. We suggest CQ larvae as a model for prediction of oral drug absorption. Two BCS Class III drugs DOX and ODN with low intestinal permeability were selected to study the model through design of drug delivery system {with and without penetration enhancers (PE)}. ODN is a dinucleotide. Absorption of DOX and ODN through larvae was quantified by spectrofluorimetric and HPLC analysis respectively and was compared with non-everted intestinal sac (NEIS) model. Good correlation was achieved by both the models for drug absorption. DOX permeability was enhanced with PE in order of their Pgp inhibitory effect i.e. Labrasol>Solutol HS-15>Transcutol-P while ODN permeability was enhanced with Oleic acid as PE through design of SMEDDS.

Culex quinquefasciatus larva model could provide a viable alternative for evaluation of cytotoxicity and oral drug absorption

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Name of Student: Mr. Swati a. Guhagarkar
Name of Professor: Professor Padma V. Devarajan

BIOENHANCED DRUG DELIVERY SYSTEMS

Hepatic targeting either based on passive accumulation of nanoparticles (NPs) in the liver or active targeting to hepatocytes has been explored in treatment of variety of liver diseases such as hepatitis, hepatic cancer. The present project deals with the design of liver targeted nanoparticulate drug delivery system (NPDDS) using PVD-TAR as targeting ligand which has high affinity for asialoglycoprotein receptors present on the liver cells. Accordingly the project is divided into the three parts.

I. Design and evaluation of polyethylene sebacate (PES) - silymarin (SIM) NPs for hepatic targeting

PES, a new biodegradable polymer synthesized in our laboratory has advantages of ease of synthesis, good hydrolytic stability, non-mutagenicity and non-genotoxicity and therefore was used in the design of NPDDS.

Silymarin is a hepatoprotective widely used in the treatment of hepatitis and other liver disorders. Effectiveness of SIM as liver remedy is severely limited by its low water solubility and poor bioavailability after oral administration. Design of NPDDS of SIM can help to improve bioavailability thereby enhancing its efficacy in the treatment of such diseases.

Preparation and in vitro evaluation: Two methods of preparation viz., nanoprecipitation and emulsion solvent diffusion (ESD), were evaluated for preparation of PES-SIM NPs. Nanoprecipitation consistently yielded nanosize (< 450 nm) even at very low surfactant concentration (0.1% w/v) whereas with ESD nanosize is obtained only at high surfactant concentration (> 1% w/v). Nanoprecipitation was found to be as a more versatile method for preparation of PES-SIM NPs. Hepatic targeted NPs (PES-SIM- TAR) were prepared by simple physical adsorption of PVD-TAR on the NPDDS. NPs were freeze dried using trehalose as cryoprotectant. NPs were evaluated for drug release, SEM, DSC and XRD analysis. PES-SIM NPs were found to be stable for one year as per ICH guideline.

Hepatoprotective activity in rats with CCl4 induced liver toxicity: Biochemical and histopathological evaluation revealed enhanced hepatopotective effect of PES-SIM NP TAR in rats with CCl4 induced liver toxicity.

II. Design and evaluation of polyethylene sebacate (PES) - Doxorubicin hydrochloride (DOX) NPs hepatic targeting

Doxorubicin hydrochloride (DOX) is a drug of choice in the treatment of hepatic cancer (HC). However its clinical usefulness is often limited by severe side effects, P-gp efflux and development of multidrug resistance by cancer cells. Design of hepatic targeted NPDDS using PVD-TAR as targeting ligand can overcome these limitations.

Preparation and in vitro evaluation: PES-DOX NPs were prepared by modified nanoprecipitation technique. The process manipulation approaches evaluated to enhance EE of DOX included: (A) Aqueous phase manipulation (B) Use of complexing agent-Gantrez AN-119. With Gantrez AN-119 as complexing agent high EE (~75%) and low size (~100 nm) was obtained. Hepatic targeted NPs (PES-SIM-TAR) were prepared by simple physical adsorption of PVD-TAR on the NPDDS. NPs were evaluated for drug release, hemolytic potential, serum stability, TEM, DSC and XRD analysis. NPs were freeze dried using trehalose as cryoprotectant. Stability studies as per ICH guidelines revealed stability of one year.

In vitro cytotoxicity and cellular uptake studies in Hep G2 cell line: Cytotoxicity and cellular uptake of PES-DOX-TAR and PES-DOX NPs was found to be comparable to DOX solution.

Biodistribution studies in rats using gamma scintigraphy: NPs were radiolabelled with 99mTc. Biodistribution studies were carried out in rats and were monitored by gamma scintigraphy. At the end of 5 h rats were sacrificed, various organs viz. heart, lung, liver, spleen and kidney were isolated and radioactivity in each organ was measured. DOX heart concentrations were found to be lower with PES-DOX-TAR and PES-DOX NPs when compared to DOX solution suggesting possibility of lower cardiotoxicity. PES-DOX-TAR revealed long circulating nature suggesting probability of enhanced targeting to hepatocytes.

III. Biodistribution studies of hepatic targeted Gantrez AN 119 (GAN) - Doxorubicin hydrochloride (DOX) NPs

GAN-DOX-NPs and GAN-DOX-TAR of two different sizes viz. 114.9±12.3 nm and 353.4±1.06 nm were prepared by an earlier reported technique in the laboratory. NPs were radiolabelled with 99mTc. Biodistribution studies were carried out in rats and were monitored by gamma scintigraphy. At the end of 5 h rats were sacrificed, various organs viz. heart, lung, liver, spleen and kidney were isolated and radioactivity in each organ was measured. With 114 nm size NPs revealed lower liver concentrations compared to DOX solution. With 353 nm size GAN-DOX-TAR exhibited high liver concentrations compared to both DOX solution and GAN-DOX NPs. The high liver concentrations of GAN-DOX-TAR could be attributed to presence of PVD-TAR as asialoglycoprotein receptors ligand. A significant reduction in heart concentration was seen with NPs suggesting possibility of lower cardiotoxicity.

Name of Student: Mr. Kiran Sawant
Name of Professor: Dr. (Mrs.) P. D. Amin

INTRODUCTION

Hot Melt Extrusion (HME) was first introduced in the plastics industry in the mid-nineteenth century to prepare polymeric insulation coatings to wires. Today, interest in HME techniques for pharmaceutical applications is growing rapidly with well over 100 papers published in the scientific literature in the last 12 years. Several research groups have demonstrated HME processes as a viable method to prepare pharmaceutical drug delivery systems, including granules, pellets, sustained release tablets, transdermal and transmucosal drug delivery systems and implants. The HME technique is an attractive alternative to traditional processing methods. HME is a process of converting a raw material into a product of uniform shape and density by forcing it through die under controlled conditions. Melt extrusion is a combination of melting & mechanical preparation method. HME represents an efficient manufacturing technology required to disperse drugs in a melt up to a true molecular solution of the active agent in the matrix.

OUTLINE OF RESEARCH WORK:

The present work was based on to explore HME technology for solubility enhancement and its application for sustained release dosage formulation. For solubility enhancement two molecule curcumin and Oxcarbazepine were selected based on insolubility in water and melting point. A sustained release formulation of Metoprolol Succinate was developed using HME technology. Polymers like Kollidon VA64, Soluplus, Eudragit and Polyox. A characterization of optimized formulation was done with FT-IR, DSC, pXRD, SEM and Contact angle. A jacketed spheronizer was developed for hot melt extrudates. To check the performance of jacketed spheronizer, pellets of Polyox was developed. The whole work was divided into four parts.

General methodology followed for preparation of solid dispersion:

- Drug to polymer ratio was kept as 1:1, 1:2 & 1:3
- Process parameters for HME were set as Type of Extruder: Single screw, Temperature: 160°C, Screw speed: 40 rpm, Feed rate 0.5 gm/min.
- Extrudates (SDs) were collected after cooling to ambient temperature
- Milled using a laboratory cutting mill & then sieved through a 100 # screen
- Particle size between 100 – 150μm were used for analysis
- Physical mixtures (PMs) were also prepared in same concentration& subjected to further analysis
- For thermal stability of ingredients Thermo gravimetric Analysis was done
- For chemical stability HPLC method was developed
- FT-IR was carried out to observe the possible hydrogen bonding
- For miscibility of drug into polymer matrix DSC, pXRD and SEM study has done

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Name of Student: Mr. Santosh Gejage
Name of Professor: Dr. (Mrs.) P. D. Amin

INTRODUCTION

Mannitol is commonly used in pharmaceutical formulations and for food products. It occurs as a white, odourless, crystalline powder. It has a sweet taste and a cooling sensation in the mouth (negative heat of solution), making it a useful excipient for mouth dissolving tablets, dispersible tablets, lozenges and chewable tablets. Because mannitol is non-hygroscopic, it is possible to use it with moisture-sensitive drugs.

The raw mannitol has poor physical characteristics like poor flow, poor compressibility, etc. Their performance under compression differed markedly, suggesting that direct compression improved its poor flowability and binding properties.

The present work comprises of the following industry projects.

1. Preparation and Evaluation of directly compressible mannitol.
2. Comparative evaluation of Marketed Directly compressible mannitol with that of lab made directly compressible mannitol.

Part-1: Preparation and Evaluation of directly compressible mannitol

Objective of the work-

The present work includes three techniques for preparation of directly compressible mannitol viz. spray drying, Fluid bed processing (FBP) and Rapid mixer granulation (RMG). The need of free flowing and having sufficient compressibility of mannitol for compression of tablets. We had tried for making the excipient that has the following properties,

- Improved flow properties
- Improved friability
- Improved compressibility
- Granular material of size between 150-250 μm

Methodology-

A] Spray Drying

The first significant spray drying application occurred in the dairy and detergent industries in the 1920s. It is one of the few technologies available for the conversion of a liquid, slurry, or low-viscosity paste to a free-flowing powder in one unit operation. The actual spray drying process is almost instantaneous, since most evaporation takes place in as little as a few milliseconds or a few seconds at most, depending on the design of the equipment and the process conditions. The method is applied in various industries. In the pharmaceutical industry, it is commonly used for excipients, antibiotics, vitamins, vaccines, enzymes and plasma substitutes. Parameters influencing are evaporation capacity of machine, type of atomizer, drying air flow type, concentration of feed solution, type of solvent, etc. Depending on the atomizers it is possible to control the particle size of the materials.

Spray drying of mannitol is carried out with following batches

1. Spray drying of plane mannitol followed by wet granulation
2. Spray drying of feed solution of mannitol which contains additional binder.

Student: Mr. Naveen Khetarpal
Name of Professor: Dr. (Mrs.) P. D. Amin

INTRODUCTION

Valproic acid (VPA) is used as an anticonvulsant and mood-stabilizing drug, primarily in the treatment of epilepsy, bipolar disorder, migraine headaches and schizophrenia. Although VPA or its salts have known utility as anticonvulsants, a number of problems are associated in formulating them in a solid form. According to the Merck Index, VPA is a liquid and therefore suffers from the difficulty attendant any liquid formulation.

Itraconazole (ITR) displays activity against histoplasmosis, blastomycosis and onychomycosis. Physicochemically, it can be characterized as a very poorly soluble weak basic drug. Given the fact that the permeability is adequate, it is classified as a class II drug in the Biopharmaceutical Classification System.

The excipients chosen as potential carriers were Soluplus®, Kollidon®VA 64, Magnesium oxide, AEROSIL®300 Pharma and AEROPERL®300 Pharma. The potential of these excipients to overcome the above stated disadvantages were explored

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Name of Student: Ms. Divya Kanchan
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Pharmacokinetic evaluation of Trachyspermum copticum

According to an unpublished study carried out in the pharmacology lab at ICT, the combination of methanolic extracts of Trigonella foenum, Trachyspermum copticum and Nigella sativa in the ratio of 1:1:1 showed an excellent anti-diabetic and anti-hyperlipidemic activity. This combination showed even a better activity when administered in the powdered form to rats. The activity of the above mentioned powders was established and the next step was to generate pharmacokinetic profile for the same. For pharmacokinetics of herbal substance, the first step is identification and characterization of marker from the extract/powder. Hence a study was needed to identify the marker from the extract/powder of Trachyspermum copticum for its future application in pharmacokinetic study.

Name of Student: Pankaj Jain
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Pharmacokinetic evaluation of Nigella sativa
According to an unpublished study carried out in the pharmacology lab at ICT, the combination of methanolic extracts of Trigonella foenum, Trachyspermum copticum and Nigella sativa in the ratio of 1:1:1 showed an excellent anti-diabetic and anti-hyperlipidemic activity. This combination showed even a better activity when administered in the powdered form to rats. The activity of the above mentioned powders was established and the next step was to generate pharmacokinetic profile for the same. For pharmacokinetics of herbal substance, the first step is identification and characterization of marker from the extract/powder. Hence a study was needed to identify the marker from the extract/powder of Nigella sativa for its future application in pharmacokinetic study.

Name of Students: Miss. Rufi Tambe
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Pharmacokinetic evaluation of Trigonella foenum
According to an unpublished study carried out in the pharmacology lab at ICT, the combination of methanolic extracts of Trigonella foenum, Trachyspermum copticum and Nigella sativa in the ratio of 1:1:1 showed an excellent anti-diabetic and anti-hyperlipidemic activity. This combination showed even a better activity when administered in the powdered form to rats. The activity of the above mentioned powders was established and the next step was to generate pharmacokinetic profile for the same. For pharmacokinetics of herbal substance, the first step is identification and characterization of marker from the extract/powder. Hence a study was needed to identify the marker from the extract/powder of Trigonella foenum for its future application in pharmacokinetic study.

Name of Students: Mr. Arjun singh Bajwa
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Bioconversion of Oils using enzymes
Plant oils containing epoxy groups are important oleochemicals. The major application of these epoxidized oils is their use as PVC-plasticizers, stabilizers, reactive diluents for paints and as intermediates for polyurethane-polyol production, adhesives, inks, lubricants etc.
Presently these epoxy oils are produced by chemical methods using strong mineral acids. However they have several disadvantages like low yields, non selective nature of reaction and equipment corrosion.
The present study aims at chemo-enzymatic epoxidation of karanja oil using Novozyme 435. This appears to provide a new and promising technique for epoxidation of oils. The Oxirane oxygen value of 82-84% was achieved showing selectivity of 98% and above (much higher than chemical method). No ring opening side reactions (α-glycol content) were observed during the process. The process could be carried out at room temperature, at a low RPM of 200-400 as compared to the chemical process which is usually carried out at 70-80°C and RPM of 2000 and above.

Name of Student: Mr. Bhalchandra Patil
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Production and purification of therapeutically important biomolucule
The selected biomolecule is immunoglobulin (IgG). The production of antibodies was done in rabbit by injecting Bovine Serum Albumin (BSA) as an antigen. The dose was optimised for higher production of antibodies. The purification of antibodies from rabbit serum was done by anion exchange chromatography (AEX) in product flow-through (FT) mode to bind impurities. In this Negative Chromatography Antibody Purification (N-CAP) the weak anion exchanger Macro-Prep DEAE was used to separate impurities from the target antibody. This is an cost effective method for the purification of antibody which overcome the limitations of Protein a affinity chromatography. Project also involves production and purification of polyclonal antibodies against generic hapten (Pesticide) for diagnostic purpose.

Name of Student: Mr. M. Farooq Shaikh
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Pharmacological evaluation of eclipta alba (asteraceae.) in experimental models of epilpesy
The objective of this study is to investigate the anticonvulsant activity of methanol extract of leaves Eclipta alba (MEEA) in experimental models of epilepsy. The anticonvulsant effect of the MEEA (50, 100 and 200mg/kg) was evaluated in Maximal electroshock (MES) model in rats, Pentylenetetrazole (PTZ), Picrotoxin, 4-Aminopyridine model in mice. The effect of drug was also evaluated in PTZ induced kindling model in mice. The effect MEEA and one of its active constituent (Wedelolactone) was also evaluated for its seizure protective effect in adult drosophila. MEEA was also evaluated for its effect on levels GABA and Glutamate in mice brain and GABA receptor modulatory activity on Guinea pig ileum. The effect of few active constituents of MEEA (i.e. Wedelolactone and Luteolin) was studies for their interaction with GABAA receptors through docking studies. These findings justify the use of Eclipta alba for the management of convulsion and Wedelolactone and Luteolin can be considered in future for development of new and better anticonvulsants.

Name of Student: Mr. Rakesh Kenjale
Name of Professor: Dr. Sadhana S. Sathaye
Title of abstract: Alteration In Biological Properties Of Heavy Metals By Ayurvedic Processing
There have been never ending debates about the safety of heavy metal containing Ayurvedic preparations. Ayurvedic texts state that the heavy metals used in such medicines undergo prior specific processing termed as 'Shodhan Vidhi', which reduces/abolishes the toxic properties of the heavy metals used.
One such preparation is Kajjali, prepared from Shodhit Parada and Shodhit Gandhaka (Ayurvedically processed Mercury and Sulphur respectively). It forms an integral part of many Ayurvedic herbomineral formulations such as Arogyavardhini, Soothshekhar, etc., that are widely prescribed for longevity and acidity respectively.
The objective of present work was to ascertain the role of Ayurvedic processing in the safety of Kajjali by way of a comparative toxicological evaluation of Kajjali with its unprocessed counterpart i.e. Kajjali made without subjecting Mercury and Sulphur to prior Shodhan Vidhi. Such Kajjali prepared from unprocessed Mercury and Sulphur is referred to as Ashuddha (impure) Kajjali.

ANNEXURE B

In-House Committees & ResponsibilitiesFaculty

Sr. No.	Faculty Name	Department Level Resposibility	Institute Level Resposibility
1	Professor P. V. Devarajan	• Head, Department of Pharmaceutical Sciences and Technology • Coordinator UGC- CAS, Co ordiantor DST-FIST, Co ordinator AICTE-MODROB • Chairperson- Institutional Animal Ethics Committee (IAEC Committee)	• Member, Post Graduate Programme Committee • Member, Stores Committee • Member, IPR Committee • Member, Merit cum Means Scholarship Committee • Chairperson- Women's Cell • Member, Anti-ragging cell • Member, IPR and Technology Transfer • Member, Purchase Committee • Member-TEQI P finance Committee • Member-Industry institute Interaction Committee
2	Professor K. G. Akamanchi	• Dean, RCRM	• Member Admission Committee for Masters, Ph.D.(Tech) • Member Admission Committee various selection committees, of research Fellows • Member RC Applied Chemistry
3	Professor P. D. Amin	• First Year B. Pharm, Time table	
4	Dr. G. U. Chaturbhuj	• Over all co-ordinator Entrance Tests Pharm. Department • Placement Co-ordinator Pharm. Department	• Examination committee • Scrap disposal committee • Safety committee • Admission Committee
5	Professor M. S. Degani	• Member of RRC for Phar-ma DeptIn –charge of depart-mental CADD activities • In –charge of Biosafety room • In-charge, Seminars/home papers for Undergraduate students	• Co-ordinator, Department of Pharmaceutical Sciences and Technology, TEQIP • Member of Editorial Board, Bombay Technologist • Member of the RRC for Biotechnology • Coordinator for BPT course for Pharmaceutical Dept • Chairperson of Merit cum means scholarship committee
6	Professor A. R. Juvekar	• Canteen committee • Safety committee	
7	Dr. P. D. Jain		
8	Dr. Ratnesh Jain		
9	Professor V. B. Patravale	• In-charge, Seminars, Depar-tment of Pharma-ceutical Sciences & Technology • In-Charge, Pharmacy Cou-ncil of India, Department of Pharma-ceutical Sciences & Technology	• Lab in-charge, Undergraduate Pharmaceutics Laboratory • TEQIP co-ordinator, Department of Pharmaceutical sciences and Technology • Member, Examination Committee
10	Professor V. N. Telvekar		
11	Professor S. S. Sathye		• Member of Placement Cell ICT, Co-ordinator DPST • Chief co-ordinator for Pharma-Alumni meet • Member of Safety Committee • Students welfare Committee
12	Professor P. R. Vavia	• In-plant training co-ordinator, Pharmaceutical Department, ICT	• In-charge Controller of examination, ICT • Colloquium in-charge, ICT • Member, Institutional animal ethics committee, ICT • Chairman, Examination committee, ICT • Member, Equal Opportunity Cell, ICT • Member, Fee's committee, ICT

ANNEXURE B

In Plant Training

B.Tech. (Pharma)

Sr. No	Name	Name of the Company	Place
1	Ninad Kothari	Sun Pharma	Daman
2	ShirinShinde	Sunshine FMCG Pvt. Ltd.	Kolhapur
3	PriyaPuthankar	Sun Pharma	Daman
4	JuiliShelke	Sun Pharm	Daman
5	MalhaarKhakharia	Sun Pharma	Daman
6	ShwetaMapari	Cipla Ltd.	Satara
7	Bela Joshi	RPG Life Sciences,	Navi Mumbai
8	Sumedh Joshi	Sandoz Development Centre	Navi Mumbai
9	Tanvi Shah	Sun Pharma	Daman
10	AshishKhinvsara	Sandoz Development Centre	Navi Mumbai
11	ShrutiPandey	Dr. Reddy's Laboratories	Visakhapatnam
12	PankajPatil	Arch Pharma	Thane
13	ShraddhaChormale	Pfizer Ltd.	Navi Mumbai
14	AniketWahane	Sanjivani Parenterals Ltd.	Navi Mumbai
15	SnehaWalzade	Glaxosmithkline Pharmaceuticals Ltd	Nashik
16	KarthikManohar	Pfizer Ltd.	Navi Mumbai
17	AnushaPusuluri	Sun Pharma	Daman
18	AbhishekKadam	Sandoz Development Centre	Navi Mumbai

B.Pharm.

1.	Parag Joshi	ChaitnayaPharma	Nashik
2.	Anjali Jain	Reliance Life Sciences	Navi Mumbai
3.	AlomiMistry	Cheryl labs	Mahape, Mumbai
4.	JueeRaut	Rubicon Pvt. Ltd.	Thane
5.	KishoriKedia	BASF India Ltd.	Navi Mumbai
6.	TanmeetKaurArora	Rubicon Pvt. Ltd	Thane
7.	SagarShinde	Cipla Ltd	Goa.
8.	RiddhiPopat	Famycare Ltd.	Navi Mumbai
9.	Aakash Shah	Famycare Ltd.	Navi Mumbai
10.	AshwiniNitsure	Sandoz Development Centre	Navi Mumbai
11.	Tanvi Shah	GPEPL	Navi Mumbai
12.	RajuTripathi	Raptakos, Brett & Co. Ltd	Thane
13.	Sunil Mali	Raptakos, Brett & Co. Ltd	Thane
14.	PranjalTaskar	Hindustan UniLever	Andheri
15.	MrunalGhogare	Lupin,	Aurangabad
16.	PriyankaKamalta	Raptakos, Brett & Co. Ltd	Thane
17.	AakashMehta	Rubicon Pvt. Ltd.	Thane
18.	AnkurDashputre	GlaxoSmithkline Pharmaceutical Ltd.	Nashik
19.	Mousam Parekh	United healthPharma Life Science P. Ltd.	Ankleshwar, Gujarat
20.	FatemaBhinderwala	Haffkine Institute,	Mumbai
21.	GourishankarPanicker	Rubicon Pvt. Ltd.,	Thane
22.	KhushbooKapadia	Raptakos, Brett & Co. Ltd	Thane
23.	SnehalMestry	Rubicon Pvt. Ltd.	Thane
24.	SangitaKumbhar	Rubicon Pvt. Ltd.	Thane
25.	Shital More	Raptakos, Brett & Co. Ltd	Thane
26.	SiddheshKasture	Cipla Ltd	Goa.
27.	Manoj Shinde	Cipla Ltd	Goa.
28.	Rahul Rathod	ChaitnayaPharma	Nashik
29.	DipeshSuvarna	Haffkine Institute	Mumbai

ANNEXURE D

Major Grants Received In the Last Five Years

Sr. No.	Sponsoring Agency	Amount / Year	Title
1.	AICTE MODROB	Rs 15 lakhs (2012-13)	Modernization of Pharmacology laboratories
2.	DST FIST	Rs. 120 lakhs(2011-13)	Life Sciences Level I
3.	UGC BSR	Rs.30 lakhs, (2011-12)	Infrastructure refurbishment
4.	UGC	Rs. 21 lakhs, 2010	Augmenting of research facilities to further facilities in research work under the scheme of UGC-BSR One time grant to Professor P. V. Devarajan, Professor K.G.Akamanchi, and Professor P. R. Vavia
6.	UGC	Rs.150 lakhs 2009-2014	UGC CAS Phase – I
7.	AICTE MODROB	Rs.20 lakhs (2009 -11)	Modernisation of computer aided design laboratory
8.	UGC (BSR)	Rs. 30 lakhs, 2008-2009	Infrastructure refurbishment
9.	UGC (BSR)	Rs. 20 lakhs, 2007	Infrastructure refurbishment
10	World Bank (TEQIP)	Rs.15 lakhs 2007-2008	Service to society

Bottom row (L-R): Anisha D'Souz [PhD(Tech)], Vishvesh Joshi [PhD(Tech)], Bhagyashree Dalvi PhD(Tech)], Nilam Patil [PhD(Tech)], Professor Padma Devarajan, Bhagyashree Joshi [PhD(Tech)] Rajshree Shinde [PhD(Tech)], Rachna More [M.Tech], P Sandhya [PhD(Tech)] **Top row (L-R):** Deraj Benival [PhD(Tech)], Anil Jindal [PhD(Tech)], Prashant Mande [PhD(Tech)], Praveen Date [PhD(Tech)], Arijit Majumder [M.Pharm], Sagara Bacchav [PhD(Tech)], Shivraj Shulgudle [M.Pharm], Rahul survase [M.harm], Mahesh Soni [PhD(Tech)], Mitesh Patel [PhD(Tech)], Banteilang Ranee [PhD(Tech)], Rohit Joshi [PhD(Tech)], Vilas Malode [PhD(Tech)]

Bottom row (L-R): Rahul Kalhapure, Priya Kothri, Shweta Chawala, Professor K. G. Akamanchi, Kamlesh Katkar
Middle row (L-R): Chetan Salunke, Sagar Pathare, Chetan Khatri, Suresh Salim, Pasad Dangte, Aakash Kicha, Atul Yulpale, Arun Bhusari **Top row (L-R):** Ravindra Sawant, Ravindra Jadav, Pramod Choudhari, Abhay Nimonkar, Krishna Indulkar

Top row (L-R): Kiran Sawant (Ph. D), Sharad D. Javeer (Ph. D), Naveen Khetarpal (M. Pharm), Sav Ajay Kumar (Ph. D), Vanita J. Sharma (Ph. D), Harita R. Desai (Ph. D), Professor P. D. Amin, Rahul Patole (Ph. D), Omprakash Bagadiya (M. Pharm), Santosh Gejage(M. Pharm.), Divakar Jaiswar (Ph. D), Meer Tarique Ali (PhD), Ritesh Fule (Ph. D), Avinash Gangurde (Ph. D)

Bottom row (L-R): Sandip Shegaonkar (M.Tech), Machhindra Bochare (PhD), Mihir Khambhete (M.Pharm), Rupesh U. Shelke (PhD), Mudra Rathod (M.Pharm), Puneet Jain (PhD). **Middle row (L-R):** Sandip Sabale (PhD), Harish Kundaikar (PhD), Professor (Dr). M. S. Degani , Sonali Niphadkar (M.Tech), Archana Raju (PhD), Arundhati Lele (PhD), Manisha Khedkar (M.Tech). **Top row (L-R):** Sachin Lonkar (PhD), Mahesh Dighe (PhD), Sunil Chavan (PhD), Prachi Kharkar (M.Tech), Vaishali Kale (M.Pharm), Neha Desai (M.Pharm), Priyanka Jahagirdar (M.Pharm).

Bottom row (L-R): Dharmendar Khatri(M.Pharm), Preeti Tupe(Ph.D Tech.), Dhyaneshwar Nagmoti(Ph.D Tech.),Professor Archana R. Juvekar, Deepavali Thanekar (Ph.D Sci.), Jayesh Dhodi (Ph.D Tech.), Manju Konka (M.Pharm), Pooja Sandhbor (M.Pharm), Pradhnya V (M.Tech).

Bottom row (L-R): Rashmi Vegda(M. Pharm), Poonam Agrawal(M. Pharm), Meenaxi Akhade(M. Pharm), Manasi Gholkar(Ph. D), Snehal Bhandare(Ph. D), Galvina Ferreira(Ph. D), Pramod Rajote(Ph. D), Maheshkumar Kale (Ph. D), Mandar Mulik(Ph. D), Aditya Arvindekar(Ph. D), Shrikant Babbar(Ph. D), Anand Shinde(M. Tech), Shankar Katekhaye (Ph. D)

Bottom row (L-R): Desai Preshita [Integrated Ph. D.(Tech.)], Prabhu Rashmi [Ph. D. (Tech.)], Pai Ankita [M.Tech. (Pharma)], Vyas Swati [Ph. D. (Tech.)], Pol Anuradha [Ph. D. (Tech.)]. **Middle row (L-R):** Prabhu Priyanka [Ph. D. (Tech.)], Chaudhari Manisha (M. Phharmacy), Professor Vandana B. Patravale, Dalapathi Gugulothu [Ph. D. (Tech.)], Badgujar Hitesh (M. Phharmacy), Agrawal Ankit (M. Phharmacy), Mohurle Swapnil [Ph. D. (Tech.)]. **Top row (L-R):** Desai Preshita [Integrated Ph. D.(Tech.)], Prabhu Rashmi [Ph. D. (Tech.)], Pai Ankita [M.Tech. (Pharma)] , Vyas Swati [Ph. D. (Tech.)], Pol Anuradha [Ph. D. (Tech.)]. **In absentia: Fernandes Clara [Ph. D. (Tech.)], kadwadkar Namrata [Ph. D. (Tech.)], Gite Sandip [Ph. D. (Tech.)], Koley Sushmita [M.Tech. (BPT)]**

Bottom row (L-R): Aditi Patil (M. Pharm), Manali Taskar (M. Pharm), Pankaj Jain (PhD), Dr. Sadhana Sathaye, Rufi Tambe (PhD), Pooja Pherwani (PhD), Rupali Redkar (PhD), Bhalchandra Patil (M. Tech) **Middle row (L-R):**, Divya Kanchan (PhD) **Top row (L-R):** Vikas Menkumare (M. Pharm), Gauresh Somani (PhD), Rahul Chaudhari (PhD), Arjun Bajwa (M. Tech), Farooq Shaikh (PhD), Rakesh Kenjale (PhD), Sagar Dhanawade (M. Pharm)

Bottom row (L-R): Anjum Mevekari, Jaya Parpiani, Darshana Mandawade **Middle row (L-R):** Snehal Kamble, Hemlata Patile, Dr.V.N.Telvekar, Harshal Bacchav, Afsar Ali Siddique, Hemchandra Chaudhari **Top row (L-R):** Nikhi Jadhav, Surhit Chewale, Kulbhusan Sasane, Saket Bhagat, Balaram Takale, Kavit Patel, Prashant Jagadhane.

1st Row from down (L-R): Jasmin Monpara (Ph.D. Tech), Kunal Pagar (Ph.D. Tech), Professor P.R. Vavia, Parag Mehata (M.Pharm.), Mayur Sangwai (Ph.D. Tech) **2nd Row (L-R):** Sharad Darandale (Ph.D. Tech), Dishan Shah (M.Pharm.), Smita Pawar (Ph.D. Tech), Preeti Wavikar (Ph.D. Tech), Rucha Deshpande (M.Tech), Gaurav Yeola (Ph.D. Tech), **3rd Row (L-R):** Sharad Chormale (M.Pharm.), Pankaj Jadhav (M.Pharm.), Surendra Sardar (Ph.D. Tech), **4th Row (L-R):** Nitin Jadhav (Ph.D. Tech), Subhash Ingle (Ph.D. Tech), Achyut Khire (Ph.D. Tech), Lalit Vora (Ph.D. Tech), Ketan Mahajan (Ph.D. Tech),

DEPARTMENT OF

POLYMER & SURFACE ENGINEERING

From Right to Left

R. N. Jagtap
B.Sc. Tech, M.Sc. Tech, Ph.D Tech
Professor in Paint Technology, Head of Department PSE

Adarsh Rao
M. Tech (Persuing Ph.D.)
Assistant Professor

Ms. Anagha Sabnis
Ph. D. (Tech)
Assistant Professor

Vikrant Shertukde
Ph.D (Tech.) – Polymer Technology
Sir Homi Mehta Asso. Professor in High Polymers

P. A. Mahanwar
Professor in Polymer Technology

S. T. Mhaske
Assistant Professor in Technology of Plastics & PPV

M. R. Sawant
M.Sc, Ph.D., DHE
Emeritus fellow,

"This division has the equipped laboratory comparable with or better than laboratories in many advanced countries"

Professor R. N. Jagtap

B.Sc. Tech, M.Sc. Tech, Ph.D Tech

Professor in Paint Technology, Head of the Department

In the inception this division offered a B.Sc (Tech) course for two years in Technology of Plastics and Technology of Paints, Pigments and Varnishes. In 1952, along with other divisions three years B.Sc (Tech) program was introduced. Dr. T. N. Mehta was the only staff member initially. Later on, the division progressed under stewardship of Late Professor N.R. Kamath who was a visionary. After he joined IIT, Professor S. P .Potnis carried the torch with great ability. From 1991 to 2005, Professor D. D. Kale was head of the Division who shared a major contribution for the development of this department. Professor M. A. Shenoy, Professor V. C. Malshe and Professor P. A. Mahanwar are the past HODs of Polymer & Paints Departments respectively. Presently from 1st August 2009 Professor R. N. Jagtap is the Head of Department.

The intake strength was only four students per year in Plastics and Paint Technology branches. Later on, the strength was increased to 8 per year and now it is 16 per year in each of these two technology courses. From 1998, the three year B. Sc (Tech) course has been replaced by four year post H.S.C course. In addition to under graduate program, the division has Master's and Doctoral Programs also. The division received a grand donation of Plastindia Foundation, Mumbai in 1997 to initiate the new program – three semesters M. Sc (Tech) in Plastics Processing. In the year 1999, the division received donation of modern equipments worth USD 100,000 from Gratag Macbeth of USA in association with Advanced Graphics Systems, India.

Today, this division boosts of being the best equipped laboratory comparable with or better than laboratories in many advanced countries.

Major Thrust of Research Areas:

● Polymer Recycling, Blends, Rheology, Polymer Processing. ● Synthesis of Nanomaterials and nanocomposites
● Ecofriendly coatings, Hybrid coatings ● Structure property relationship ● Living Radical Polymerization,
● Synthesis of Functional monomers ● Polymer Blends and alloys

- R N Jagtap
(Head of the Department)

R. N. Jagtap

B.Sc. Tech, M.Sc. Tech, Ph.D Tech

Professor in Paint Technology

Subjects taught:

- Environment Friendly Coatings,
- Advanced Surface Coating Technology II,
- Corrosion Science and Corrosion Prevention,
- Advanced Surface Coating Technology I,
- Technology of Printing Inks

Research interests:

Living Radical Polymerization for Tailor-made Polymers,
Nanomaterials & Nanocomposite,
Recycling of e-waste,
Antimicrobial Paints,
Heat reflective coatings,
Corrosion,
Eco friendly coating

Research students:

Ph.D.(Tech.) - 04
Ph.D.(Sci.) - 06
M.Tech. - 07
M.Sc. - 01

Research publications:

International - 04
National – 02
Peer-reviewed - 01
Conference proceeding - 02

Patents :

Indian – 2

Sponsored projects:

Government - 1
Private - 01

Professional Activities :

- Member of UAA
- Member Governing council of ICPE
- Member of IPI
- Member of Colour society

P. A. Mahanwar

Professor in Polymer Technology

Subjects taught:

- Recycling of Plastics,
- Powder Coatings,
- High Polymer Chemistry,
- Technology of Pigments,
- Technical Analysis of Plastics,
- Compounding and Processing of plastics.

Research interests:

- Synthesis and Characterization of specialty polymers for Controlled release,
- Surface coatings,
- nanocomposites,
- Bionanocomposites,
- Utilization of non conventional energy for polymerization,
- Super Absorbents

Research students :

Ph.D.(Tech.) : 06
Ph.D.(Sci.) : 06
M.Tech. : 06

Professional Activities:

- Member, Board of Governors, UDCT Alumni Association, Mumbai
- Secretary, The Color Society, Mumbai
- Member, Technical Advisory Committee Ministry of Science & Technology, Government of India, New Delhi
- Course Co-ordinator DPAT, Garware Institute University of Mumbai
- Member, MUPTA, Mumbai
- Member, Indian Plastics Institute, Mumbai
- Member, BANE, India
- Member, Polymer Science Society
- Member, BSTA

S. T. Mhaske

Assistant Professor in Technology of Plastics & PPV

Subjects taught:

- Compounding & Polymer Processing – I,
- Polymer & Processing Technology – III,

- Analysis & Characterization of Polymers,
- Synthesis & Characterization of Polymers,
- Paints Processing

Research interests:

Novel approached synthesis of Nano particles,
Polymer melt Rheology,
Cellulose based Polymer Nanocomposites,
Bio Nanocomposites,
Synthesis of resins from renewable resources,
Water Borne Coatings,
Insulating Varnishes,
Conductive coatings,
Anticorrosive coatings,
Polymer Processing & Coloration & Colour Matching.

Research students:

Ph.D.(Tech) -06
Masters - 11
Ph.D.(Sci.)- 01

Research publications :

International: 10,
National - 20,
Conference Proceedings - 3
Peer-reviewed - 08

Sponsored projects:

Government: 02
Ongoing: 0
Private: 02

Professional Activities:

- Secretary, UAA (India).
- Coordinator, CTM Course (Diploma in Chemical Technology Management)
- Chairman, Education Committee Indian Plastics Institute, Mumbai Chapter.
- Joint Secretory, The Colour Society, India
- Governing Member, The Society for Polymer Science, India
- Visiting Faculty in Amravati University
- Visiting Faculty for Indian Plastics Institute

Group Research activities:

At present most of the work is being done on synthesis of nanometerials such as Titanium dioxide, zinc oxide, nanocellulose (whiskers, particles and nanofibers) etc. using conventional & cavitation approach and its applications in polymer (synthetic as well as biopolymer) composites and coatings to enhance their performance properties.
Synthesis of Polyamide hot melt adhesives and its applications.
Modification of fly ash and its applications in polymer composites and coatings to enhance their performance.
Synthesis of Nanoemulsions using conventional methods as well as acoustic cavitation like polystyrene, PMMA etc.
Discoloration and dewaxination of Shellac
Preparation of conductive coatings

Adarsh Rao

M. Tech (persuing Ph.D.)
Assistant Professor

Subjects taught during 2010-11:

- Technology of Thermoplastics,
- Chemistry and Technology of Plastics,
- Synthesis & Characterizations of resins and Polymers,
- Polymer Processing,

- Compounding and Polymer Processing,
- Analysis and Characterization of Polymers.

Research interests :

Controlled/Living Radical Polymerization Polymer Nanocomposites,
Nanocoatings,
Polymer blends and alloys.

Number of research publications:

International- 1
National - 2

Number of sponsored projects :

Private- 1

Professional Activities :

- Member of Color Society
- Member of UDCT Alumni Association

Anagha Sabnis

Ph. D. (Tech)
Assistant Professor

Subjects taught during 2010-11 :

- B.Tech.:
- Technology of Thermoset Resins,
- Paint Technology -I,
- Paint Technology -III,
- Analysis of Raw Materials,
- Processing of Paints,
- Analysis of Paints. M.Tech.: Additives for Coatings,
- Surface Coating Technology I,
- Industrial Coatings.

Research interests:

Novel approached synthesis of Nano particles,
Resin Synthesis from renewable resources,
Water Borne Coatings,
Conductive coatings,
Anticorrosive coatings,
Electric Insulation Coatings

Number of research students:

M.Tech. 10

Sponsored Project: 02

Number of research publications:

International- 02
National – 0

Number of research publications:

International - 0
National - 0
Peer-reviewed - 0
Conference proceedings - 3

Professional Activities :

Member Colour Society

Vikrant Shertukde

Ph.D (Tech.) – Polymer Technology
Sir Homi Mehta Asso. Professor in High Polymers

Subjects taught during 2010-11:

- Polymer Nano-Composites,
- Polymer Blends Alloys,

- Environment & Polymer Technology,
- Smart Polymers,
- Radiation Curable coatings,
- Polymer Science & Technology-II,
- Science & Technology-III,
- Technology of Elastomers,
- Technology of Thermoset resins I, II & III

Research Interests :

Nanocomposites,
Polymer blends & alloys,
Recycling of plastics,
Synthesis of specialty polymers,
Surface & interfacial energy studies in polymeric systems.

Number of research students :

Ph.D. (Tech.) - 01
Ph.D. (Sc) - 02
M.Tech. – 02 + 2

Number of research publications:

International - 13
National - 22
Peer-reviewed - 13
Conference proceedings - 07

Number of sponsored projects:

Government- 1
Private - 02

Professional Activities:

- Life Member of UAA
- Life Member Colour Society
- Ex-Secretary Colour Society
- Management committee Member Colour Society
- Ex-Education committee Chairman Colour Society
- Advisory Board Member Crystal NanoClay

M. R. Sawant

M.Sc (University of Mumbai), Ph.D. (Institute of Chemical Technology, Mumbai), DHE (University of Mumbai) Emeritus fellow (All India Council of Technical Education), Dept. of Polymer & Surface Engineering

Research interests:

- Catalysis,
- Surfactant science,
- Pesticide formulation

Number of research publications :

International - 1

Number of patents:

Indian - 02

Number of sponsored projects:

Government - 1

Special Awards/Honours:

Appointed as the Scientific Advisor to the Patent Office, Govt. of India

Shri D.R. Kadam
Instrument Mechanic

Shri A.K. Dicholkar
Laboratory Assistant

Shri S.K. Hasaye
Laboratory Assistant

Shri M.A. Ansari
Laboratory Assistant

Shri B. S. Satardekar
Laboratory Attendent

Shri C.S. Kumbhar
Laboratory Attendent

Shri P.D. Patkare
Laboratory Attendent

Shri D.V. Karande
Laboratory Attendent

Shri. S. L. Gharat
Laboratory Attendent

Students' Seminars/Projects/Home Papers

SEMINAR (B.TECH.) POLYMER ENGINEERING & TECHNOLOGY

Sr.	Student Name	Title	Guide
1	Bhosarekar Avadhut Arun	Polymers in Biosensors	RNJ
2	Chaudhary Rishabh	Geopolymers as Construction Material	PAM
3	Deshmukh Ameet	Review-Literature on- Thermosetting Acrylics, Polyimides & Polyimide-Amides	VVS
4	Dushyant	Developments in Thermoplastic Vulcanizate	STM
5	Kesarkar Balkrishna Narayan	Advances in Biobased Plasticizers	ASS
6	M L V Appa Rao	Molecularly Imprinted Polymers	ARR
7	/Moorthy Aditi	Biopolymer Gel	RNJ
8	Prabhu Rajesh Vyasaraya	Acrylic Impact Modifiers for Polyvinyl Chloride	PAM
9	Rao Shashank Auryanand	Review-Literature on- Different Methods of Manufacture, Treatments of Nano-Fillers.	VVS
10	Rohit Mohan	Recent Developments in Mulch films	STM
11	Samant Saumil Prashant	Recent Developments in Depolymerization of Polyurethanes	ASS
12	/Satam Sayali Shrinivas	An Overview of Biodegradable Polyolefiens	ARR
13	Wagh Adhirath Sanjay	Polymers in Water Purification	RNJ
14	Borkar Asad Amjad	Electrospinning of Engineering Polymers	PAM
15	Jagtap Pravin Sandipan	Review-Literature on – Recycling of Polymerblends & Multilayered/Component Polymer	VVS
16	Khan Tariz Anwar	Polymers in Solar Cells	STM
17	Kokate Swapnil Rajabhau	Advances in Recycling of Teflon	ASS
18	Mahajan Bhushan Sharad	Fluorinated High Performance Polymers	ARR
19	Pacharne Bajirao Sambhaji	Polymer Modifications for Membranes	RNJ
20	Qureshi Azhar Fareed	Recent Developments in Migratory Corrosion Inhibitors	ASS
21	Rathod Vilas Uttam	An Overview on Stimuli-Responsive Polymers	ARR
22	Wagh Devendra Suresh	Developments in Microsize Fillers in Polymer Composite	STM

SEMINAR (B. TECH.) SURFACE COATING TECHNOLOGY

Sr.	Student Name	Title	Guide
1	/Bhagat Vrushali Dinkar	An Overview on Polymerizable Surfactants	ARR
2	Kohli Ishan Singh	High Solids Automotive Coatings	ARR
3	/Mittal Surbhi Surandra	Recent Developments in Luminescent paints	ASS
4	Muralidharan Vishal	Recent Developments in Inorganic Based Paints	STM
5	/Patil Rupali Suhas	Review Literature on–Use of Waste or Recycled Materials in Coatings	VVS
6	/Pawar Madhuri Rajendra	Paint Processing by Cavitations / Ultrasonication	PAM
7	/Ramachandran Yoga	Developments in Anti Carbonation Coatings	RNJ
8	Rathi Kapil Kailash	Sol-Gel Coatings on Metal	ARR
9	Wazarkar Kunal Dattatray	Recent Developments in Waterbased Superhydrophobic Coatings	ASS
10	Bamane Pournima Bapuso	Antistic Coatings	STM
11	Bhutad Nakul Shekhar	Review Literature on – Green Coatings	VVS
12	Chandwaskar Manasi Muktibodh	Water Proofing Compounds and Their Application Techniques	PAM
13	Gandodhar Roshan Mukund	Recent Development in Hot Melt Pressure Sensitive Adhesives	RNJ
14	Jagtap Ujjwala Bhanudas	Fluropolymers in Coating Applications	ARR
15	Mohammed Maqbool Saleem	Recent Developments in UV Curable Wood Coatings	ASS
16	Patil Sushil Shashikant	Recent Deveoplemt in Antifouling Coatings	STM
17	Seth Raja Anand	Review Literature on – Coatings for Defence Applications	VVS
18	Shedage Pallavi Shankarrao	Water Soluble Polymers for Textile sizing	PAM
19	Waray Sanchit Purushottam	Synthesis, Properties & Applications of Redispersible Powder Emulsion	RNJ

PROJECT (B. TECH.) POLYMER ENGINEERING & TECHNOLOGY

Sr.	Student Name	Title	Guide
1	Bhosarekar Avadhut Arun	Micro Glass Sphere Filled Composites	ARR
2	Chaudhary Rishabh	Studies in Synthesis of Biobased Plasticizer	ASS
3	Deshmukh Ameet	Utilization of Microsphere for electrial appliances	STM
4	Dushyant	Recycling of Polyolefins with Rubbers	VVS
5	Kesarkar Balkrishna Narayan	Synthesis & Characterization of PEER / PES Nanofibars	PAM
6	M L V Appa Rao	Outdoor Weathering Properties of Films.	RNJ

7	/Moorthy Aditi	Impact Modification of PS	ARR
8	Prabhu Rajesh Vyasaraya	Studies in Depolymerization of Polyurethane	ASS
9	Rao Shashank Auryanand	Development of PP/EPDM for Automotive Applications	STM
10	Rohit Mohan	Polyester Based Nano-composites	VVS
11	Samant Saumil Prashant	Synthesis & Characterization of Polyamines for Paper Application	PAM
12	Satam Sayali Shrinivas	Effect of Filler Biding on Surface Slip and Adhesion of the Film	RNJ
13	Wagh Adhirath Sanjay	Polypropylene/Engage Nanocomposites	ARR
14	Borkar Asad Amjad	Studies in aminoresins for Corrosion Resistance	ASS
15	Jagtap Pravin Sandipan	Effect Particle Shape and Soze on Polymer Nanocomposite	STM
16	Khan Tariz Anwar	Synthesis of Unsaturated Polyester for Reactor Body	VVS
17	Kokate Swapnil Rajabhau	Synthesis of Cationic Polymers for Textile Application	PAM
18	Mahajan Bhushan Sharad	Preparation of PTFE Dispersion	RNJ
19	Pacharne Bajirao Sambhaji	Studies in Depolymerization of PTFE	ASS
20	Qureshi Azhar Fareed	Preparation of Lactic acid from agro waste & PLA thereafter	PAM
21	Rathod Vilas Uttam	Ultrasonic Polymerization	RNJ
22	Wagh Devendra Suresh	Synthesis of Conduction Polymers.	STM

PROJECT (B. TECH.) SURFACE COATING TECHNOLOGY

Sr.	Student Name	Title	Guide
1	Bhagat Vrushali Dinkar	Effect of Surface Treatment on Dispersibility of $CaCO_3$	RNJ
2	Kohli Ishan Singh	Effect of Surface Treatment on Dispersibility of TiO_2	RNJ
3	Mittal Surbhi Surandra	Thermoplastic Elastomeric Microsphere Containing Heat & Impact Resistance Coating	PAM
4	Muralidharan Vishal	Preparation of Thermoset Acrylic Coatings	VVS
5	Patil Rupali Suhas	Development of Antistic Paint	STM
6	Pawar Madhuri Rajendra	Studies in Synthesis of UV Curable Wood finishing	ASS
7	Ramachandran Yoga	Effect of MMT Clay on Novolac Acrylate Coatings	ARR
8	Rathi Kapil Kailash	Evaluate the Antimicrobial Properties of Nano Tio2 Synthesis and	RNJ
9	Wazarkar Kunal Dattatray	Silicon Modified UV Curable Nanocomposites Wood Coating	PAM
10	Bamane Pournima Bapuso	Synthesis of Water Proofing / Crack Bridging Exterior Paints	VVS
11	Bhutad Nakul Shekhar	Development of Inorganic Based Paint Formulation	STM
12	Chandwaskar Manasi Muktibodh	Studies in Ultrasonication Technique for Transesterification Reaction	ASS
13	Gandodhar Roshan Mukund	Synthesis of Pressure Sensitive Adhesive	ARR
14	Jagtap Ujjwala Bhanudas	Evaluate the Water Repellency of Additives	RNJ
15	Mohammed Maqbool Saleem	Spirit Soluble & Water – Soluble Acrylic for Wood Lacqure	PAM
16	Patil Sushil Shashikant	Synthesis of F R Grade Epoxy Resin	VVS
17	Seth Raja Anand	Recycling of PET Wate for Coating Applications	STM
18	Shedage Pallavi Shankarrao	Studies in Synthesis of Cationic Resins for Paper industry	ASS
19	Waray Sanchit Purushottam	Manufacfacturing of Core-Shell Latex	ARR

RESEARCH PROJECTS PH.D. (TECH)

Sr.	Name of student	Previous institute	Title and Project Supervisor
1	Chimankar Yogesh	Institute of Chemical Technology	Synthesis and Applications of Hyperbranched polymers Professor R. N. Jagtap
2	Ahire Yogesh	Institute of Chemical Technology	Studies in Controlled Radical Professor R. N. Jagtap
3	Rao Adarsh	Institute of Chemical Technology	Studies in applications of ATRP Professor R. N. Jagtap
4	Gupta Prashnt	Institute of Chemical Technology	Environmentally Degradable polyolefins Professor R. N. Jagtap
5	Sahai rai sujit	Institute of Chemical Technology	Engineering polymer blends and composites Professor P. A. Mahanwar
6	Gaval vivek ramdas	Institute of Chemical Technology	Perticulate and nanocomposites of polymers and blends. Professor P. A. Mahanwar
7	Gaikwad Pravin Ramesh	Institute of Chemical Technology	Studies in thermoplastic microfiber & nanofiber composites Professor P. A. Mahanwar
8	Dongre Raviprakash haribhau	Institute of Chemical Technology	Studies in speciality coatings Professor P. A. Mahanwar
9	Sharma Bhuvanesh Kumar	Institute of Chemical Technology	Development of high radiation high temperature and higher stress resistance polymer blend and composite for reactor, gasket and o ring Professor P.A. Mahanwar
10	Savdekar Niranjan R.	Institute of Chemical Technology	Studies in Performance Behaviour of Polymer composites containing Nanoparticles Dr. S.T. Mhaske
11	Karande Vilas S	Institute of Chemical Technology	Polymer composites based on Cellulosic Nanomaterials Dr. S.T. Mhaske
12	Wasekar Parag	Institute of Chemical Technology	Polymer coating and composite based on modified silicate Dr. S.T. Mhaske
13	Yeole Kunal V.	Institute of Chemical Technology	Epoxy Based Coatings Dr. S.T. Mhaske
14	Kadam Pravin G.	Institute of Chemical Technology	Polymer Nanocomposites: Preparation & applications Dr. S.T. Mhaske
15	Dhanvijay Prarthana Umesh	Institute of Chemical Technology	Studies in multi-functional Additves Dr. V.V. Shertukde

RESEARCH PROJECTS PH.D. (SCIENCE)

Sr.	Name of Student	Previous institute	Title and Project Supervisor
1	Ingale Raghunath	North Maharashtra University	Synthesis of Novel monomers for surface coating Applications Professor R. N. Jagtap
2	Dhawde Prerna	Nagpur University	Antifouling Coatings Professor R. N. Jagtap

3	Tathe Dipak	Shivaji College of Art, Commerce and Science Akola	Modified Bio-sources Materials for coating applications. Professor R. N. Jagtap
4	Chambhare Sachin	Vidybharti Bharti Amravti	Studies in RAFT copolymerization for coatings
5	Lokhande Gunawant	Pratap Mahavidyalay Amalner	Synthesis of copolymer by control radical polymerization technique
6	Saidane Poonam	SNDT JHU	Studies on control radical polymerization
7	Deshmukh Pallavi	Institute of chemical technology	Electron beam curable nanocoating Professor P. A. Mahanwar
8	Umale Shweta Shaligram	Institute of chemical technology	Extraction, characterization and application of naturally occurring mineral base and vegetable based pigment Professor P. A. Mahanwar
9	Patil Rakesh Nama	Institute of chemical technology	Synthesis of hybrid epoxy resin emulsion for industrial coating application Professor P. A. Mahanwar
10	Kelkar Sundar Tukaram	Institute of chemical technology	Synthesis of polylactic acid from renewable resources Professor P. A. Mahanwar
11	Lokhande Kumudini Baba	Institute of chemical technology	Synthesis of Bioplasticizers: Alternative for pthalates
12	Sahu Aabha	Institute of chemical technology	Professor P. A. Mahanwar
13	Satavalekar Sneha	Institute of chemical technology	Synthesis of Green Plasticizer and its Application Dr. S.T. Mhaske
14	Rane Ulka Ganpat	Institute of chemical technology	Studies in flame retardant epoxy coating system Dr. V.V. Shertukde
15	Gharat Vaishnav Dhanaji	Institute of chemical technology	Synthesis of polymer supported catalyst Dr. V.V. Shertukde

M. TECH. SEMINARS

Sr.	Name of Student	Previous institute	Title	Research Guide
1	Mundhe Chaitanya	ICT Mumbai	Hyper branched polymers	Professor R.N. Jagtap
2	Patil Dhawal	MIT Aurangabad	Blocked Isocyanate	Professor R.N. Jagtap
3	Balurkar Snehal	MIT Aurangabad	Silylated Alkyds	Professor R.N. Jagtap
4	Hushe Sanket	COETA Akola	Nanocomposites	Professor R.N. Jagtap
5	Ganesh Bhoite	Sangali vasant dada patil	Modification methods for polyaryl sulfone membrane	Professor R.N. Jagtap
6	Prachi Hingankar	ICT Mumbai	Anticarbonation coatings	Professor R.N. Jagtap
7	Dinesh Balgude	ICT Mumbai	Development in anticorrosive coating	Dr. Anagha Sabnis
8	AkshayDhake	ICT Mumbai	Polymers for waste water treatment	Dr. Anagha Sabnis
9	KiranKonge	ICT Mumbai	Polymers for paper sizing	Dr. Anagha Sabnis
10	PremkumarDeogade	ICT Mumbai	Antimicrobial coating for food packaging	Dr. Anagha Sabnis
11	Bhakti Mehta	ICT Mumbai	Roles of fats and oil in cosmetics	Dr. Anagha Sabnis
12	MayurShinkar	ICT Mumbai	Radiation assisted Depolymerization of PET	Dr. Anagha Sabnis
13	Ashok Fad	ICT Mumbai		Dr. Anagha Sabnis

M. TECH. PROJECT

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Kute Ravindra	LIT, Nagpur	Synthesis and characterization of new modified anti-corrosive polyesteramide resin from jatropha seed oil and its applications.	Dr. S. T. Mhaske
2	Paturkar Monica	ICT, Mumbai		Dr. S. T. Mhaske
3	Mishra Vaishali	MIT, Pune	Utilisation of paint sludge collected from automobile industry	Dr. S. T. Mhaske
4	Ghosh Sushmita		Synthesis of nanoparticles by ultrasonication and micro-emulsion techniques and their applications	Dr. S. T. Mhaske
5	Bhogale Amay	ICT, Mumbai	Synthesis of nanoparticles and their applications in coatings	Dr. S. T. Mhaske
6	More Arti	ICT, Mumbai	Studies in recycling of polyester and its application in coatings	Dr. S. T. Mhaske
7	Kolekar	Shivaji University	Cellulose based bionanocomposites	Dr. S. T. Mhaske
8	Bangar Kunal Anand	ICT, Mumbai	Studies in conducting polymers	Dr. V.V. Shertukde
9	Dinesh Balgude	ICT, Mumbai	Studies in anticorrosion coatings	Dr. Anagha Sabnis
10	Akshay Dhake	ICT, Mumbai	Anticorrosive rebar coating	Dr. Anagha Sabnis
11	Kiran Konge	Shivaji University	Studies of modification of oil	Dr. Anagha Sabnis
12	Premkumar Deogade	ICT, Mumbai	Water based coating for paper sizing	Dr. Anagha Sabnis
13	Bhakti Mehta	ICT, Mumbai	Study of bio-based plasticizer	Dr. Anagha Sabnis
14	MayurShinkar	ICT, Mumbai	To study the synthesis of L-lactic acid	Dr. Anagha Sabnis
15	Ashok Fad	Shivaji University	Studies in Depolymerization of waste PET for Coating applications	Dr. Anagha Sabnis

M.SC. (CHEMISTRY) (BY RESEARCH)

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Sakir Shaizer	Mumbai University	Antifouling Coatings	Professor R. N. Jagtap

GOVERNMENT AGENCIES:

No.	Sponsor	Title	Duration	Total Amount (Rs.)	Principal Investigator	Research Fellow
1.	BRNS	Green approach for recycling of e-waste through radiation processing	1 Year	10,58,800	Professor R. N. Jagtap	Anand Krishnan
2.	Board of Research in Nuclear Sciences (BRNS), Govt. of India	Development of volatile organic compound (VOC) free radiation indicator labels along with prototype product manufacturing in collaboration with Bhaba Atomic Research Centre, Mumbai	June 2012-2015)	24.45 lakh	Dr. S.T. Mhaske	

PRIVATE AGENCIES:

No.	Sponsor	Title	Duration	Total Amount (Rs.)	Principal Investigator	Research Fellow
1.	Sawriya Polymers	Polymeric Nanocomposites	2 Years	1,20,000	Professor R. N. Jagtap	Sanket Hushe
2.	Asian Paints Industries Ltd.	Anti carbonation coating	2 Years	2,67,000	Professor R. N. Jagtap	Niranjan Savadekar
3.	Kansai Nerolac Paints	Blocked Isocyanates	2 Years	3,00,000	Professor R. N. Jagtap	
4.	Technova Imaging Sytems Ltd.	Plastisol inks	3 Month	60,000	Professor R. N. Jagtap	Sanket Hushe
5.	Ingenia Polymers, Huston, USA	Development of Polymer based Nanomasterbatches	6 months	20,00,000	Dr. S.T. Mhaske	
6	Polyplex Corp.Ltd	Ceanwrap	36months	2 lac	Adarsh Rao	Nihal Pratiksha
7	Godavari Biorefineries (Somaiya Group)	Studies in Polymerization of Isopropenyl Cetate for Caoting Applications	2 yrs	6.5 lacs	Dr. A S Sabnis	Nilesh Shinde
8	Universal Starch & Allied Chemicals, Mumbai	Studies in Synthesis of Biodegradable Polymers	4 yrs	20,18,490	Dr. A S Sabnis	Mr. Mayur Shinkar
9	Monopol Chemicals Pvt. Ltd	Synthesis of Biodiesel from Vegetable oils by Ultrasonication	2 yrs	7,00,000	Dr. A S Sabnis	Mr. Kiran Konge
10.	UICT-Golden Jubilee	Thermally Stable Polymers	2000-01	32000	Dr. V.V. Shertukde	
11.	UICT-Golden Jubilee	Polypropylene Hybrid Composites	2005-06	20000	Dr. V.V. Shertukde	

PUBLICATIONS:

No.	Title and Authors	Journal	Vol. No.	Pages	Year
1.	Nano ZnO grafted on MAA/BA/MMA copolymer: An additive for hygienic coating T.K. Sontakke, R.N. Jagtap, Arvind Singh, D.C. Kothari	Progress in Organic Coatings	Vol-74	Issue-3, pp-582-588	2012
2	Nmp free hybrid Polyurethane Dispersions as adhesives for Plastic laminates Y. Chimankar, S. K. Patel & Professor R. N. Jagtap	Der Chemica Sinica,	Vol-1	Issue-3, pp-91-99	2011
3.	Studies in core and shell Polyurethane Dispersions A. Khopade, G. N. Manvi & Professor R. N. Jagtap	Journal of Dispersion Science & Technology,	Vol-32	Issue-2	2011
4.	Isocyanurate based fluorinated polyurethane dispersion for anti-graffiti coatings Gururaj N. Manvi, Arvind R. Singh, Ramanand N. Jagtap, D.C. Kothari	Progress in Organic Coatings	Vol-75	Issue-3, pp-139-146	
5	Effect of DMPA content of Polyurethane Dispersion on coating Properties Gururaj N. Manvi & Professor R. N. Jagtap	Journal of Dispersion Science & Technology	Vol-31	Issue-10, pp-1376-1382	2011
6	Characterization of the glass transition temperature of chitosan and its oligomers by temperature modulated differential scanning calorimetry Prerna P. Dhawade. and Ramanand N. Jagtap	Pelagia Research Library Advances in Applied Science Research			2012
7	Synthesis and Study of Urethane Acrylate used as EB-curable Oligomer for Coatings with varying ratio of Nano-silica, Pallavi Deshmukh, P.A.Mahanwar, Sunil Sabharwal and V.A.Bambole	Biomedical applications of nanostructured materials	Vol-40	Pp117-122	2011
8	Synthesis of urethane acrylate from PENTA based polyol and EB curing with varying ratio of TMTPA, P.P. Deshmukh and P.A. Mahanwar	Pigment & resin technology	Vol-41	pp-186-187	2011
9	" Extraction of colorant from the leaves of Terminalia catappa using non-conventional technique, S.S.Umale, P. A. Mahanwar	International Journal of Basic and applied Sciences	Vol-12	pp-78-88	2012
10	Corrosion Performance of Hybrid Epoxy Resin Coatings with Electrochemical impedance Spectroscopy, R. N. Patil, B.V. Sharma and P. A. Mahanwar	Pelagia Research Library		pp-458-467	2012
11	Synthesis of one pack hybrid epoxy resin emulsion for coating application, R. N. Patil, B.V. Sharma and P. A. Mahanwar	Der Chemica Sinica		pp-378-390`	2012
12	N. R. Savadekar, V. S. Karande, N. Vigneshwaran, A. K. Bharimalla and S. T. Mhaske, Preparation of nano cellulose fibers and its application in Kappa-Carrageenan based film	International Jo-urnal of Biological Macromolecules	In Press		2012

13	P. Wasekar, P.G. Kadam and S. T. Mhaske, Effect of Cenosphere Concentrationon the Mechanical, Thermal, Rheological and Morphological Properties of Nylon 6	Journal of Minerals & Materials Char-acterization and Engineering	In Press		2012
14	P. Wasekar and S. T. Mhaske, Dielectric coating of castor oil based polyurethane modified with Leucoemeralidine polyaniline,).	International jo-urnal of Polymeric Materials, 2012	In Press		2012
15	N. R. Savadekar and S. T. Mhaske, Synthesis of nano cellulose fibers and effect on thermoplastics starch based films	Carbohydrate Polymers	89(1)	146-151	2012
16	Mahajan L.H., Mhaske S.T., Composite microspheres of poly(o-anisidine)/TiO2	Materials Letters	68	183-186	2012
17	S.S. Ramteke , P. A. Wasekar, A. C. Rao , S. T. Mhaske, Effect of nano polytetrafluoroethylene on epoxy melamine coating.	Surface Coating International	95(3)	134	2012
18	Kunal Yeole and S. T. Mhaske, Novel approach for the preparation of conductive nanocomposites by using polypyrole/MWCNT,	Journal of Polymer Materials	29(1)		2012
19	Kadam P.G., Mhaske S.T., Effect of piperazine concentration on the properties of lower purity dimer acid synthesized polyamide hot melt adhesive	Journal of Adhesion Science and Technology	26	1267-1279	2012
20	Kadam P.G., Mhaske S.T., Synthesis and properties of polyamide synthesized for piperazine and lower purity dimer acid as hot melt adhesive	International Jo-urnal of Adhesion & Adhesives,	31	735–742	2011
21	Kadam P.G., Mhaske S.T., Effect of adhesive application method on lap shear strength of hot-melt adhesive with Fracture analysis	International Jo-urnal of Research in Chemistry and Environment	1(1)	48-54	2011
22	Krishnamurthy Prasad, D.V. Pinjari, A.B. Pandit and S.T. Mhaske, Synthesis of zirconium dioxide by ultrasound assisted precipitation: Effect of calcination temperature	Ultrasonics Sono-chemistry	18(5)	1128-1137.	2011
23	V. S. Karande, A. K. Bharimalla, S.T. Mhaske, N. Vigneshwaran, Nanofibrilation of cotton fibers by disc refiner and its characterization	Fibers and Polymers,	12(3)	399-404.	2011
24	Effect of concentration of mica and microsilica on particulate composite of poly(ether sulfone) and poly (ether-ether-ketone) V. V. Shertukde	Journal of Thermoplastic composite Mat-erial	Vol - 24	351-366	2011
25	Isothermal and non isothermal crystallization kinetics of poly(e-caprolactone) V. V. Shertukde	Journal App. Poly. Sc	Accepted		2011
26	Crystlization kinetics of Biodegradable polymers: Review V. V. Shertukde	Plastic technology and engineering journal	Accepted		2011

27	Synthesis and characterization of Tris (Nonyl) Phosphite and Interficial Study with karanja oil in acetonitrile solution Mane S. M., Thorat B. N., Sawant M. R.	Journal of Di-spersion Science & Technology			
28	Sabnis A., Kathalewar M., Raut P., Bhave V., Mare S., "New polyester polyol derived from recycled polyethylene terephthalate for coating application",	Archives of Applied Science Research	4(1)	85-93	2012
29	Sabnis A., Kathalewar M., Balgude D., Shinde N., "Use of Novel Urethane Organosilane Precursor Prepared via Nonlsocyanate Polyurethane Route for Sol Gel Based Protective Coatings",	Paints & Coatings News	3(3)	18-20	2012

Patents

No.	Inventors	Title	Country	Funding Agency
1.	R. N. Jagtap	Functionalized clay filled LLDPE Nanocomposite film with improved Barrier properties of food applications	India	BARC
2.	R. N. Jagtap	Bhupesh Marathe Heat Reflective Coatings	India	
3.	M. R. Sawant, V. Y. Joshi, S. S. Kamath	Novel quaternary ammonium glucoside surfactant process for producing the same and utilization thereof.	India	AICTE
4.	M. R. Sawant	Novel surface active agent of a class of sugar fatty acid esters and method of preparation.	India	AICTE

In-house Faculty Responsibilities
(Membership of various In-house Committees)

Professor R. N. Jagtap
Head of the Depatment
Administration
Arranging visiting faculties and visiting professors
Conducting smooth lectures and practicals for UG

Shri A. R. Rao
UG Factory Visit Committee
Timetable Committee
Endowment Lecture Committee

Dr. V.V. Shertukde
Chairman Instrumentation committee
TEQIP Coordinator
CAS Co-ordinator DRS Co-ordinator
Inplant Training supervisor

Seminars/Lectures/Conferences/Symposia/Workshops/ Summer or Winter Training Schools attended/Oral OR Poster Presentations

- Investigating improvement in performance properties when nano-alumina is incorporated into polyester based urethane acrylate clearcoat,Pallavi Deshmukh, Prakash Mahanwar, Poster, International conference on Nanotechnology,
- Presented a paper titled "Preparation of Cellulose Nanowhiskers from Cotton fibers and its Application in Biopolymer Composites to enhance their Performance"in an international conference on Sustainability in Polymer Materials to be held from May 20-23, 2012 at Netherlands, Europe.
- Presented a paper titled "Improvement in Functional Properties of K- Carrageenan /Nano-Cellulose Fibre (NCF) Nanocomposite Films" in an international conference on Sustainability in Polymer Materials to be held from May 20-23, 2012 at Netherlands, Europe.
- Presented poster on "Production of cellulose Nanowhiskers from zinc chloride pretreated microcrystalline cellulose by Homogenization" in 4th Bangalore Nano, a international conference organized Department of IT BT, Govt. of Karnataka in association with JNCASR, Bangalore and MM Activ Sci-tech Communications Pvt. Ltd. Between 7th-9th December 2011.
- Presented a paper on "Improvement in Functional Properties of Potato Starch/Nano-Cellulose Fibre (NCF) nanocomposite films", in ICCE 2011, Shanghai, China during 23rd to 31st July 2011.
- Presented a paper on "Synthesis and Characterization of ZnO2 and Flyash nanocomposite",in NanoSciTech 2012 organized by the Department of Physics, Panjab University during Feb 2012, Chandigargh.
- Presented a paper on "Electrical insulation coating of castor oil based polyurethane modified with Leucoemeralidine polyaniline"in International Conference on Advancements in Polymeric Materials (APM-2011), organized by CIPET Chennai (India) during 25th to 27th March 2011.
- Presented a paper on "Novel approach for trhe synthesis of PPY/MWNT conductive nanocomposites" (CORCON 2010) International conferenceof East Asia & Pacific Area Corrosion & Expo held during 24 -26. Sept. 2010 at Goa, India. Organized by NACE International at GOA.
- Presented a paper on 'Synthesis of Modified Triazole Corrosion Inhibitor and its Effect on Inhibition Efficiency at different Temperatures' (CORCON 2010) International conferenceof East Asia & Pacific Area Corrosion & Expo held during 24 -26. Sept. 2010 at Goa, India. Organized by NACE International at GOA and received second best paper prize.
- Presented a paper on 'Utilization of Cross-linked Polyethylene Foam as an Reinforcement material in Polyolefin based composites' in (Poly-ERA'10) organized by Department of Polymer Technology, College of Engineering and Technology, Akola, Maharashtra; Indian Plastics Institute, SubChapter, Akola and; Sant GadgeBaba Amravati University on 13th March 2010.
- Presented a paper on 'K-Carrageenan Biopolymer Films Reinforced with Attapulgite Clay'in Annual Research Symposium (ChEmference2010)organized by Department of Chemical Engineering, Indian Institute of Technology, Kanpur, Uttar Pradesh on 13th-14th July 2010.
- Presented a paper on 'Dispersion of Poly(oxypropylene) modified clay in Polypropylene' in (Recent Advances in Polymers) organized by Plastics and Polymer Engineering Department, Maharashtra Institute of Technology, Aurangabad, Maharashtra; Department of Science and Technology and; Ministry of Science and Technology on 17th and 18th August 2010.
- Presented a paper on 'Utilization of Cross-linked Polyethylene Foam as an Reinforcement material in Polyolefin based composites' in Prakalp2010 organized by Chemical Engineering Department, Maharashtra Academy of Engineering, Alandi, Pune, Maharashtra; SACE (Student Association of Chemical Engineers) and IIChE Students'on 3rd September 2010. Won Consolation Prize.
- Presented a paper on 'Plastic: Waste to Fuel' inInternational Conference on Environmental Challenges: A Global Concern.organized by Kanya Maha Vidyalaya, Jalandar, Punjab and Department of Science and Technology. 15th and 16th October 2010
- Presented a paper on 'Utilization of Cross-linked Polyethylene Foam as an Reinforcement material in Polyolefin based composites' organized by Panjab University & Asian Polymer Association, Chandigargh, Punjab; University on 26th to 27th November 2010(PSE 2010).
- Presented a paper on "Ultrasonic Assisted Synthesis of PS/TiO2 Nanoemulsions" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Preparation of Cellulose Nanofibrils by Homogenization from Micro-crystalline Cellulose" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Development of Carrageenan based Nanocomposite Film for Pachakging Applications" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Novel Preparation of Conductive Nanocomposite using Polypyrrole-MWCNT" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Impact Modification of Polybutylene Terphthale and Trimethylene Terphthale" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Ultrasound Assisted Synthesis of PMMA/CaCO3 Nanoemulsions" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Ultrasonic Assisted Synthesis Of Polystyrene Nanoemulsions" in International Conference on Advancements in Polymeric Materials (APM-2010), organized by CIPET Bhubaneswar (India) during 20 -22nd February 2010.
- Presented a paper on "Synthesis Of Nanostructured Metal Oxide (TiO2) by Acoustic Cavitation Assisted Sol-Gel Technique", in International Conference on Nano Science and Technology (ICONSAT-2010), organized by Indian Institute of Technology Bombay Mumbai, India during 17 – 20th February 2010.
- Presented a paper on "Ultrasonic Assisted Synthesis of Nano Metal Oxide" in National Conference on "Nanomaterials and Nanotechnology" (NCNN 2010), organized by Department of Chemistry and Department of Chemical Engineering, VNIT Nagpur (India) during 18th – 20th January 2010.
- Presented a paper on "Ultrasonic Assisted Synthesis of Polystyrene Nanomaterials"in International Conference on "Materials for the Millennium" (MatCon 2010), organized by Department of Applied Chemistry, Cochin University of Science and Technology, Kochi (India) during 11th – 13th January 2010.
- Presented a paper on "Preparation of Cellulose Nanofibrils by Mechanical Process" in Young Research Conference during 15th – 16th January 2010.
- Presented a paper on "Preparation of Cellulose Nanofibrils by Mechanical Process and its Characterization" in Indo-US Workshop on Nanotechnology: Applications and Implications during 10th-12th November 2009.

Seminars/Lectures/Conferences/Symposia/Workshops/ Summer or Winter Training Schools attended/Oral OR Poster Presentations

- Presented a paper on "Sonochemically assisted phase transformation and synthesis of nano TiO2: Anatase to Rutile", Presented at the 4th Asian Particle Technology Symposium, Delhi, September 2009.
- Presented a paper on "Acoustic Cavitation Assisted Sol Gel Process Synthesis of Nanostructured Metal Oxides" Presented at ChEmference 2009, IIT Madras, Chennai, Aug 2009.
- Presented a paper on "ZnO soluble starch polypropylene nanocomposites" International conference on Nanomaterials and Applications at Kolhapur, 2008.
- Presented a paper on "Starch graft copolymer: Granulation and Drying", Proceedings of 5th Asia Pacific Drying Conference, Hong Kong, 2007.
- Presented a paper on "Effect of Crosslinked Waste Polyethylene Foam on HDPE and LLDPE", in Indo-German Workshop on Polymer Science and Technology Rajkot.
- Presented a paper on "Wood Sawdust filled Polyvinyl Chloride", International Conference on Advances In Polymer Blends, Composites, IPNS and Gels: Macro to Nano Scales, School of Chemical Sciences, Mahatma Gandhi University, Kerala,India.
- Presented a paper on "Utilization of Waste Crosslinked Foam Powder for Polymer Composite" Presented at Amrita Institute of Technology,Coimbatore, India.
- Presented a paper on "Nylon Attapulgite Nanocomposite", National Conference on Advances in Nanocomposites, Tata Institute of Fundamental Research (TIFR), Mumbai, India.
- Presented a paper on "Novel Reactive Processing of PP / Clay Nanocomposite", Indian Institute of Technology (IIT), Mumbai.
- Presented a paper on "Nanocomposites for High End Application" Macro 2006, NCL, Pune.
- Given lectures on "Polymer Testing" and "Polymer Processing an Overview" at BATU March 2009, Lonere.
- Paper titled "Thermally resistant polyester-imide for electrical insulation", presented at Cable Wire Conference, Nov. 2011, Mumbai.
- Paper titled "Urethane organosilane precursor prepared via non-isocyanate route for sol-gel based coatings", presented at Symposium on Surface Protective Coatings (SSPC), Dec. 2011, Banglore.
- Poster titled "Synthesis of polyester polyol from depolymerized PET for coating application", presented at Symposium on Surface Protective Coatings (SSPC), Dec. 2011, Banglore.

EVENTS ORGANIZED:

Rangotsav : A National Level Symposium, 19th – 20th February, 2011
Colour Society International Seminar

INDUSTRIAL CONSULTANCY :

- Industrial Hardware
- Cosmos Enterprise
- VFC Industries
- Chemtreat Corp., (Division of Clariant Chemicals)
- Snowcem Paints Pvt. Ltd.
- Crompton & Greaves
- Anupam Colours
- Trans-Pek Industries India Limited
- Jotun India Pvt. Ltd.
- Witmans Industries
- Hindusthan Construction Company
- Kipol Coatings
- Suzlon Pvt. Ltd
- Jayant Rollers Pvt. Ltd.
- Noel Engineers
- K.G. Marketing Pvt. Ltd
- Jain Irrigation
- Silvo lacquer

Details of Post-graduate/Ph.D. students who passed out

M. TECH.

No.	Name	Degree	Title of Project	Supervisor
1	Kadam Pravin G.		Studies in Synthesis of Hot-Melt Adhesives	Dr. S.T. Mhaske
2	Pawar Bhushan		Studies in synthesis of Nano-particle	Dr. S.T. Mhaske
3	More Maheshkumar		Synthesis of Binders for Surface Coating Application from Renewable Sources	Dr. S.T. Mhaske
4	Pranthana Dhanvijay	M.Tech	Studies in crystallization Kinetics of Biodegradable Polymers	Dr. V.V. Shertukde
5	Momhad Yameen	M.Tech	Studies in Specialty Adhesives	Dr. V.V. Shertukde

Ph. D.

No.	Name	Degree	Title of project	Supervisor
1	Badal Dewangan	Ph.D. Tech.	Studies In Atrp	Professor R. N. Jagtap
2	Gururaj Manvi	Ph.D. Sci.	Polyurethans For Surface Coatings	Professor R. N. Jagtap
3	Tushar Sontakke	Ph.D. Tech.	Studies in RAFT Polymerization	Professor R. N. Jagtap
4	Nishant Tale	Ph.D. Sci.	Synthesis of Difunctional monomers for coatings applications	Professor R. N. Jagtap
5	Anand Krishnan	Ph.D. Tech.	Recycling of E-Waste	Professor R. N. Jagtap
6	Kumudini Ghag	Ph.D. Sci.	Adsorbant	Professor P. A. Mahanwar

Short abstract on salient features of research work

Professor R. N. Jagtap

Name of the student: Ingale Raghunath Pralhad
Degree: Ph. D. (Science)
Thesis title: Synthesis of Novel Monomers for surface Coating Application
Abstract: The interest in the novel monomer is increases because of their unique properties. Inrecent years, there are hundreds of organic reactions are reported in the literature. Trying to exploit some of the reaction like Baylis-Hillman reaction, Heck Reactions,Sonogashira Coupling, Suzuki Coupling etc. for synthesizing some monomers.In this project we envisage a possibility of substituting existing costly & carcinogenicmonomers with the novel monomers which exhibit almost same properties like hightemperature resistant, ant graffiti coating, antibacterial coating etc. These novel monomerswhich may contain functional groups.
In order to meet the requirement of the final coating applications copolymers are employed. In this different endeavor different Novel monomers and their corresponding copolymerized by polymerization technique. These binderswould be employed as part of coating materials may be for High Temperature Resistance Coating, Antibacterial coating and HygienicCoating etc.

Name of the student: Yogesh T. Chimankar
Degree: Ph.D. (Tech)
Thesis title: Synthesis and applications of Hyper-Branched polymers
Abstract: Hyperbranched polymers haveattracted increasing attention owing to their unique properties and greater availability. Theyoffer the chance for the development of new products but at the same time they present achallenge due to their complex branched structure. Hyperbranched polymers are by now anestablished class of polymeric materials and can be considered as highly functional specialtyproducts. In the project different core molecules are synthesiszed for required number of arm to the hyberbranched macromolecules by convergent approach. These hyberbranched molecules are employed as additive or sole binders for water as well as solvent based systems for varieties of end applications like architectural. Automotive and radiation curable coatings.

Name of the student: Prerna P. Dhawade
Degree: Ph. D. (Science)
Thesis title: Biosafe Antifouling Coatings
Abstract: Marine biofouling is the undesirable deposition and growth of aquatic flora and fauna on submerged structures. The fouling on the surface initiates with the formation of biofilm which is the boosting point for the further growth and survival of the microorganisms in the water. Fouling on the submerged structure occurs in the following stages. Biofouling commences with formation of conditioned film which follows subsequent adherence of microorganisms and eventually by macro organisms. The antifouling paints have to be formulated by keeping in mind the characteristics of sea-water such as pH, salinity, temperature, dissolved salts and oxygen concentration. Current environmental norms have banned the use of TBT (tri butyl tin) as an anti-foulant which was discontinued due its detrimental effects on aquatic flora and fauna, The need for environmentally benign solutions have been sought since. To prepare an antifouling paint the binder has to be as ecofriendly as possible. To ensure this, chitosan a marine biopolymer has been narrowed down. This polymer is best suited due to its film forming property, inherent antimicrobial activity and the presence of two available functional groups. Current research is directed towards chitosan silane sol gel hybrids for the binder system. Also work has been initiated on chitosan – acrylates emulsions due to low cost and versatility. These paints consisting of biopolymers would be ecofriendly and with further probing could make the binder cidal enough to eliminate the usage of biocides. Due to environmental norms and legislations, eventually biosafe coatings could be the answer for antifouling paints in the times to come.

Name of the student: Sachin U. Chambhare
Degree: Ph. D. (Science)
Thesis title: Studies in RAFT Co-polymerization for coating applications.
Abstract: Free radical polymerization with reversible addition–fragmentation chain transfer [RAFT] polymerization, receiving more attention among the other controlled polymerization techniques.
Like nitrogen mediated polymerization [NMP] and Atom transfer radical polymerization [ATRP]

RAFT polymerization technique can used wide range of monomers having different functionalities, variety of solvents and initiators for polymerization. RAFT mediated controlled radical polymerization is based on equilibrium between active and dormant species, achieved by a degenerative chain transfer process, by using various chain transfer agents like dithioester, dithioxanthate and dithiocarbamate.

RAFT polymerization is widely used for the synthesis of block Co-polymers having definiteMolecular weight, narrow polydispersity and with complex architecture like star, block,microgeland hyperbranched with high purity. Thus by selecting the appropriate RAFT agent, we are able to synthesize the block co-polymers of definite molecular weight and narrow polydispersivity which can be used for solvent and water borne coatings.

Name of the student: Dipak Sudhakarrao Tathe
Degree: Ph. D. (Science)
Thesis title: Modified Biosources Material for Coating Application.
Abstract: The use of renewable sources in the preparation of various industrial materials has been revitalized because of the environmental concerns. These Natural materials possess the properties comparable to those of widely used petroleum-based polymers and offer a significant cost reduction. Among the available natural resources, triglyceride vegetable oils are widely used as renewable raw materials for the preparation and modification of different polymers. Vegetable oil chemically modify with suitable functional groups it gives valuable product for polymeric industries such as polyurethanes, polyamides, surfactants, alkyd and also dispersing agent for surface coating application.

Name of the student: Lokhande Gunawant Pandharinath
Degree: Ph. D. (Science)
Thesis title: Synthesis of Copolymer for the Coating applications using control
Abstract: The development of control–living polymerization methods has been a long standing goal in polymer chemistry. All these methods are based on establishing a rapid dynamic equilibrium between a minute amount of growing free radicals and large majority of dormant species the dormant species may be alkyl halides in ATRP thioester as in reversible addition fragmentation chain transfer process (RAFT) alkoxy amine as in nitroxide mediated polymerization (NMP) or stable free radical polymerizations (SFRP) a control radical polymerization include activation and deactivation step and generated free radicals propagates and terminates as in conventional free radical polymerization. By using this method average molecular weight of polymer made bywell control while maintaining relatively narrow molecular weight distribution. The main aim use and

synthesize of different type of initiator for polymerization process and their rates on the polymerization process for synthesis block Copolymers.

Name of the student: Poonam B. Saindane
Degree: Ph. D. (Science)
Thesis title: Study on Controlled Radical Polymerization.
Abstract: Controlled radical polymerization is also termed as living polymerization. Living polymerization is a popular method for synthesizing block copolymers since the polymer can be synthesized in stages, each stage containing a different monomer. Additional advantages are predetermined molar mass and control over end-groups. Several new methods were discovered which allowed the development of living polymerization using free radical chemistry. These techniques involved catalytic chain transfer polymerization, iniferter mediated polymerization, and stable free radical mediated polymerization (SFRP), atom transfer radical polymerization (ATRP), reversible addition-fragmentation chain transfer. RAFT (Reversible Addition–Fragmentation chain Transfer) is a form of controlled free radical polymerization (CRP) which helps in achieving controlled molecular weight distribution and low polydispersity index.
RAFT is a user- and, environmentally-friendly process that does not require expensive and contaminating additives unlike other controlled free radical polymerization processes This technique helps in synthesizing macromolecules with complex architectures including block, graft, comb, and star structures with predetermined molecular weight by using suitable raft agent. This techniques help to synthesis additives which act as efficient wetting and dispersing agent, rheology modifier, thickener, decorative and architectural paint and many more.

Name of the student: Prashant Gupta
Degree: Ph. D. (Tech.)
Thesis title: Environmentally Degradable Polyolefins.
Abstract: Plastics are indeed an integral part of human civilization. It has been one of the most durable and ubiquitous material known to mankind. One of the significant applications of polymer is packaging which has shown a rapid growth over the last decades. Polyolefins account for about 66% of the total plastics consumption, followed by PVC and polystyrene (PS). The increased usage has aggravated the problem, particularly of its disposal and impact on the environment. They have become an eye sour in the public opinion and there is hue and cry for its usage in packaging applications. The management of solid waste disposal is a tedious problem worldwide and is progressively becoming worse with economic growth and development. The development of technologies for reducing polymeric waste which are cost effective and acceptable from the environmental standpoint has proven to be a difficult challenge due to whole range complexities inherent in the reuse of polymers. Oxodegradable plastics are a perfect solution to this ever growing menace. The "oxo-biodegradable" additives are typically incorporated in conventional plastics such as Polyethylene (PE), Polypropylene (PP), Polystyrene (PS), while processing tothe final products. These additives catalyze the degradation process by means of thermal or photo initiation, thereby degrading the polymer in the stipulated time. Furthermore, they can be recycled with the pristine material thereby making them oxo-degradable.

Name of the student: Yogesh S. Ahire
Degree: Ph. D. (Tech.)
Thesis title: Studies in Controlled Radical Polymerization
Abstract: It was the desire of polymer chemist to have control over the molecular architecture of polymers and the dream come true through controlled or living radical polymerization. With this tool one can prepare a polymer with required molecular weight, molecular weight distribution, polydispersity, branching and functional groups attached. In the present endeavor various block copolymers, hyperbranched polymers of 2-hydroxyethyl methacrylate (HEMA), Butyl Methacrylate (BMA), Trimethylolpropane Triacylate (TMPTA) were prepared by Atom transfer radical polymerization (ATRP) & Reverse ATRP; which is one of the most versatile methods of controlled radical polymerization. In these experiments the composition of monomers along with ligand, catalyst and initiator were varied. Block copolymers with molecular weight 3000, 5000, 10000, 15000, 25000, 35000 were prepared and characterized by ^{13}C-NMR, ^{1}H NMR, FTIR, DSC, XRD and GPC. These block copolymers, hyperbranched polymers were incorporated as a wetting & dispersing additives in water, solvent based paints and evaluated for various properties.

Dr. S. T. Mhaske

Research Student: Niranjan Savdekar
Polymer nanocomposites have attracted great attention from both academic and industrial point of view. In the present scenario, organic–inorganic nanometer composites have attracted great interest, both in industry and in academia, because they often exhibit remarkable improvement in mechanical and other properties when compared with pristine polymer or conventional micro and macro composites, such as high modulus, increased strength and heat resistance. However, due to the degradation concerns of the petroleum based polymers, the concept of biodegradability enjoys both user friendly and eco-friendly attributes. Bionanocomposites represent an emerging group of nanostructured hybrid materials. They are formed by the combination of natural polymers and inorganic solids and show at least one dimension on the nanometer scale. Similar to conventional nanocomposites, which involve synthetic polymers; these biohybrid materials also exhibit improved structural and functional properties of great interest for different applications. The properties inherent to the biopolymers, that is, biocompatibility and biodegradability, open new prospects for these hybrid materials with special incidence in regenerative medicine and in environmentally friendly materials (green nanocomposites).

Research Student: Vilas Karande
Nanowhiskers obtained from microcrystalline cellulose (MCC) are of huge interest due to their good mechanical strength. The present study deals with preparation of cellulose nanowhiskers (CNW) from microcrystalline cellulose using high pressure homogenizer. Microcrystalline cellulose (MCC) was prepared by acid hydrolysis of short staple cotton fibers using hydrochloric acid. To achieve better homogenization, MCC was passed through homogenizer repeatedly till 15 passes; and after every 3 passes was characterized using scanning electron microscopy (SEM), atomic force microscopy (AFM), X-ray diffractometer (XRD) and viscometer. From SEM it was found that the average diameter of MCC decreased significantly from 5-10 μm to about 60 nm (also confirmed by AFM) after 15 passes. Force distance (FD) curve analysis demonstrated that the Young's modulus of CNW was about 452 MPa. Prepared CNW was used as a reinforcing agent in chitosan. Tensile strength and Young's of the composite increased by 33.3% and 52.3% respectively, whereas % elongation at break decreased by 69.6%, at 3% loading of CNW. Enthalpy of melting increased

with increase in concentration of CNW in Chitosan but no significant change was observed in the melting temperature. CNW was found to have uniformly distributed at 3% concentration, above which it started aggregating as depicted by SEM.

Research Student: Parag A. Wasekar

With increasing concern about the conservation of natural resources, there is requirement of find alternative material for replacement of natural resource. Fly ash is one of potential material for replacement of extender in paint and coatings also as filler for polymer composite. But certain drawback of fly ash has to minimise for effective application. The colour of fly ash is one of important drawback for large scale utilization of fly ash in coating and polymer composite.

The color modification of fly ash is done by purification and mesostructure development on surface of fly ash by calcium hydroxide with varying ratio. The calcium hydroxide is reacted on surface of fly ash with varying ratio and will studies the effect on color and performance properties like specific gravity, oil absorption value, resistance to acid, alkali and bleeding resistance for application in coating and polymer composite. The particle size of fly ash is studies with Dynamic light scattering particle size analyser (DLS). The crystallinity and whiteness value of fly ash is show increases with increasing ratio of fly ash to calcium hydroxide.

Research Student: Kunal Yeole

Recently, waterborne coatings have gained increasing importance due to strict environmental regulations on the emission of volatile organic compounds from solventborne coatings. With the environmental criteria becoming stricter waterborne coating has been gaining importance in the modern coating industry. The use of waterborne coatings has made it possible to control pollution, to reduce risks of fire and to improve aspects of occupational health and safety. To maintain constant product quality and to develop new products, structural characterization and measurement of barrier properties of these new coatings become crucial. Waterborne coatings usually contain different additives and an appropriate choice among various alternatives of these additives brings a challenge to both manufacturers and researchers.

Epoxy resin is one of the most important materials in coating industry. The manufacture of its waterborne emulsion has received considerable attention in industrial field. There are two ways to produce waterborne epoxy emulsion. One is dependent on the external emulsifier to make the resin dispersed in water. The other is by way of chemical modification to introduce polar groups which confer water dispersibility to the resin. The former technology is simpler and cheaper, while the latter one can achieve very fine and well distributed emulsion (nm particles).

A novel waterborne modified epoxy coating was prepared by using different types of silanes like 3-glycidoxypropyltrimethoxysilane (GPTMS), MPTMS, etc., a termination agent of adduct, and liquid epoxy resin. The structure of the curing agent was characterized. The synthetic process and the effects of the amount of silanes on the properties of curing agent and performances of cured film were studied.

Research Student: Pravin G. Kadam

Poly (vinyl chloride) (PVC) /Thermoplastic polyester elastomer (Hytrel) blend system prepared in 50:50 composition was found to have a highest possible elongation at maximum load owing to molecular compatibility but had lower strength and modulus. In order to improve the strength and modulus nano-alumina was added as a reinforcing agent in concentrations as 1, 3, 5 and 7 phr. The prepared nanocomposites were characterized for mechanical, thermal, rheological, morphological and electrical properties. The 5 phr nano-alumina loaded PVC/Hytrel blend had optimal improvement in its strength values, but above that concentration nano-alumina started forming aggregates which is evident from scanning electron micrographs. Tensile strength and tensile modulus were found to have increased by about 20% and 97% respectively; whereas elongation at maximum load decreased by 50%, indicating the effect of nano-alumina as reinforcing agent in the PVC/Hytrel system. The onset degradation temperature, viscosity, surface resistivity and volume resistivity increased whereas degradation weight loss (%) decreased with increase in nano-alumina concentration in PVC/Hytrel blend system.

Research Student: Lalit Mahajan

Anti-static coatings are conducting coatings which remove static electricity build up in insulating surfaces. These are the conducting coatings with optimized resistance. Conducting polymer/metal oxide nanocomposites were made to use as fillers in anti-static formulations. Epoxy-amine coating system has found to be a best system for anti-static formulation because of low static charge accumulation and good mechanical properties. Conducting fillers with different geometry such as microspheres, nano-fibres, whiskers etc can induce large variations in the conductivity range of coating systems. Basic objective is to synthesize fillers which are easy to disperse in polymer matrix and provides conductivity required at lower concentrations and thus to formulate anti-static coating systems with required conductivities.

Research Student: Manoj Mali

Nanotechnology has been dominating in automotive industry from last many years due to their enhanced properties against conventional materials. Nanocomposites are versatile in nature they are used in automotive Industry (Thermoplastic Vulcanizate CASE). Thermoplastics vulcanizates are made by dynamic vulcanization of Polypropylene and Ethylene propylene diene monomer (EPDM). The use of nanocomposites in vehicle parts and system is expected to reduce weight and promote recycling. The weight and energy savings are the enhanced physical properties that nanocomposites offer, such as stiffness, strength and dimensional stability, that set them apart from conventional fiber reinforced or mineral-filled materials. Property enhancement in nanocomposites occurs at very low nanoparticles loadings up to 5%.

Research Student: Avinash Munde

Reverse osmosis has become the standard approach for desalinating water. Reverse osmosis is a separation process that uses pressure to push salt water through a membrane that holds the salt on one side and allows the pure water to pass to the other side. This is the reverse of the normal osmosis process, which is the natural movement of water from an area of low salt concentration to water containing high amounts of salt until all water has the same salt concentration.

The membranes used for reverse osmosis have a dense barrier layer at the surface where the separation of salt and water takes place. The membrane is designed to allow only water to pass through this dense layer while preventing the passage of salt ions and other impurities.

The process of desalinating water through reverse osmosis has historically been both capital and energy intensive. Polymer-based membrane control key membrane properties. Aim of this project is a synthesis & modification of different types of membranes (Ultrafilteration, Nanofilteration & Reverse osmosis membrane) using various polymers & characterization by different techniques (SEM, TEM etc.).

Dr. A.S. Sabnis

Name: Nileshkumar J. Shinde
Course: M. Tech (Surface Coating Technology)
Project Title: Studies in Polymerization of Isopropenyl Acetate for Coating Application
Abstract: By far vinyl acetate is the most widely used monomer from acetate family used for emulsion copolymer in adhesive, exterior & interior paints and numerous other applications. Vinyl acetate is a polar and very reactive monomer and requires special treatment to copolymerize with less polar and reactive monomer. In addition, some effective initiator systems are required to homopolymerize or copolymerize highly water soluble vinyl acetate monomer. The films made of vinyl acetate polymer also posses less hydrolytic stability. One of the monomers from this family is Isopropenyl acetate which has an unsaturation with a methyl group attached to the ethylenic carbon. The unsaturation present in the monomer could be utilized for the free radical polymerization. Current work includes the study of polymerization of this monomer and to find its application for coating industry.

Project Scheme: Solution polymerization of Isopropenyl acetate with acrylonitrile was carried out using DMF as solvent and AIBN as an initiator. The ratio of both the co monomers was varied from 100:0 to 50:50 w/w of acrylonitrile to IPA. This polymer is being evaluated for suitable applications in fibre industry. Synthesized polymers are under characterization.
Emulsion polymer of Isopropenyl acetate with Butyl Acrylate & Methyl methacrylate was synthesized. i.e. by replacing Vinyl acetate with Isopropenyl acetate emulsions are synthesized. The performance of these emulsions in paint is being evaluated.

Name of the student: Mukesh Kathalewar
Course: M. Tech (Surface Coating Technology)
Project Title: Studies in NonIsocyanate Polyurethanes
Abstract: Polyurethanes are the most versatile polymeric resins which are widely used in plastic and coating industries because of their excellent properties. The synthesis and applications of these polymers involves toxic and environmentally hazardous materials such as isocyanates and various solvents. Growing global awareness of the need to protect our environment and continually strive to ensure the health and well being of those in the Industry and consumers, create the demand for environmentally friendly products.

Recent discovery of Non-isocyanate Polyurethanes (NIPU) provide an excellent alternative to conventional polyurethanes. Relatively new class of compound "cyclocarbonates" are used for synthesis of these "green", porous free, and moisture insensitive polyurethanes. These cyclocarbonate compounds are mostly oligomers having cyclic carbonate groups based on vegetable oils and other synthetic polymers.

In the same line of work, we are currently working on development of NIPU coatings for various applications as listed below.

Scheme 1: Sol-gel based coatings for corrosion protection.

Cyclocarbonation of 3-Glycidoxypropyl trimethoxysilane (GPTMS) was carried out under high pressure in autoclave reactor under CO_2 atmosphere. The product was confirmed with FTIR analysis.

A urethane precursor was synthesized using C-GPTMS and amino silane. The structure was confirmed with FTIR analysis.

The precursor was then used in sol-gel coating formulation in variable concentration and applied on aluminum alloy substrate.

These coatings were further studied for mechanical, chemical and corrosion resistance properties.

Scheme 2: NIPU coatings from vegetable oil sources.

Fatty acid diester and triester were synthesized from dehydrated castor oil fatty acid (DCOFA) via esterification process with diol and triol respectively. The products were characterized using Acid, SAP and Hydroxyl value.

Further work includes epoxidation of these products followed by modification into cyclocarbonated product. These modified products will later be used for preparing NIPU coatings followed by coating characterization for various properties.

Dr. V. V. Shertukde

Currently doing work on synthesis of multifunctional additives for modification of Nano-clays. These modified nono-clays will be used in different polymers.

Work on polymer based catalyst is also being carried out for synthesis of LSD & bulk drugs.

Work is also in progress of manufacturing green FR for epoxy or inherently Green FR epoxy. In another research work we are exploring new treatments for conducting fillers for using them in different polymers for electronic & electrical applications.

MAJOR ACCOMPLISHMENTS :

- Department Selected for getting DST-FIST Development Grant
- Pioneered Technology of interfolic compatibilization in polymers.
- Published 23 International peer-reviewed research papers in the journal of international repute and attended three international conferences at abroad.
- Mr. Lalit Mahajan had awarded "Best Research Student" by Plastindia foundation

First Row (L to R): Gunawant Lokhande (Ph.D. Sci), Snehal Balurkar (M.Tech. Polymer) Professor R.N.Jagtap, Poonam Saindane **Second Row (L to R):** Prashant Gupta (Ph.D. Tech), Dipak Tathe (Ph.D. Sci) Yogesh Ahire (Ph.D. Tech), Sanket Hushe (M.Tech. Polymer) Sachin Chambhare (Ph.D. Sci), Ganesh Bhoite (M.Tech), Chaitanya Munde (M.Tech), **Last Row (L to R):** Yogesh Chimankar(Ph.D. Tech), Raghu Ingale (Ph.D. Sci),

First Row (L to R): L-R Mr. Kelkar Sunder, Mr. Sahai R. S. N., Professor Mahanwar P. A., Mr.Gaval Vivek R. Mr.Gaikwad Praveen **Second Row (L to R):** L-R Mr. kashif Patel, Mr. Bhuvanesh Kumar, Mr. Chandan Fuke **Third Row (L to R):** Miss Shweta Umale, Miss Rupali Nehate

First Row (L to R): Vaishali Mishra, Aarti More, Monica Paturkar, Professor S.T. Mhaske, Nidhi Shah, Niranjan Savdekar, Manoj More,
Second Row (L to R): Kunal Yeole, Amay Bhogale, Vilas Karande, Ravindra Kute, Parag Wasekar

Laboratory

DEPARTMENT OF CHEMISTRY

From Right to Left

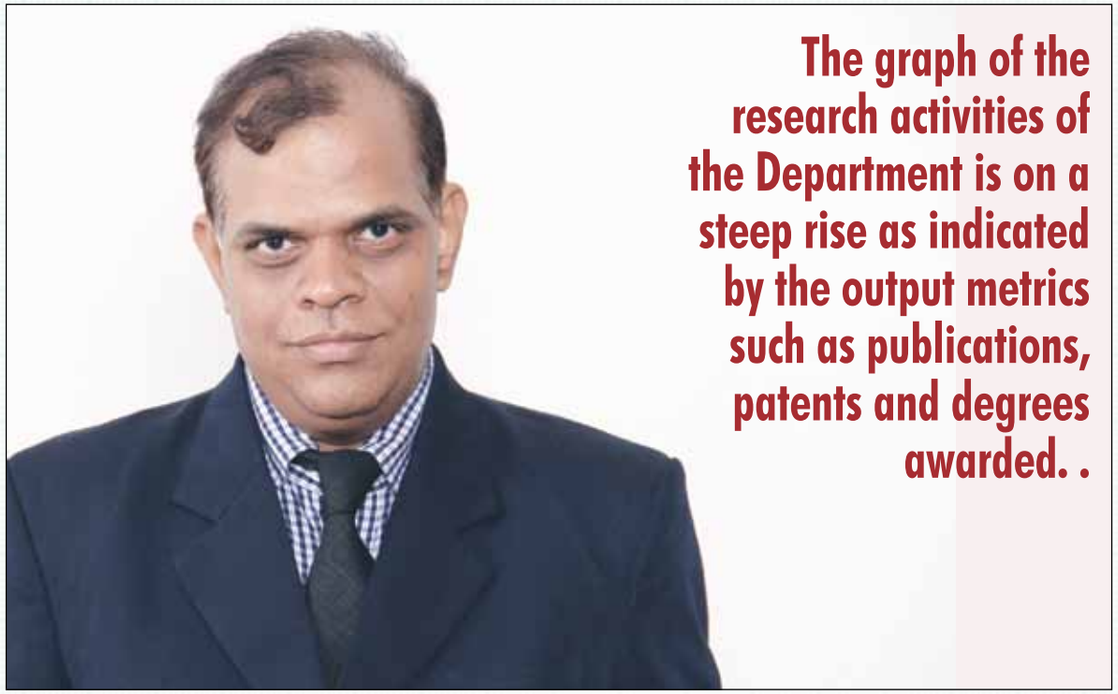
BHALCHANDRA M. BHANAGE
Professor of Industrial and Engineering Chemistry
Head , Department of Chemistry

MRS. JAYASHREE M. NAGARKAR
M.Sc., Ph.D
Associate Professor of Physical Chemistry

ANANT. R. KAPDI
M.Sc., Ph.D.
DST-Fast Track Fellow
Professor of Chemistry

SHRINIWAS D. SAMANT
M.Sc., Ph.D.
Professor of Organic Chemistry

MRS. RADHA. V. JAYARAM
M.Sc., Ph.D
Professor of Physical Chemistry



Professor B. M. Bhanage
Head of the Department

It is my pleasure to bring out this report of the Department of Chemistry, which summarizes the activities of the Department during the period 2011-12. This year is particularly a year of commemoration for the Department as the first batch of the M.Sc (Chemistry) Programme of the Department passed out. It is my pleasure to mention here that almost all of the student who had successfully cleared the course have got lucrative placements.

The Department continues to be benefited by the UGC-SAP (DRS-I) programme. Under the auspices of this programme, the Department organized a one day Theme Meeting on 'Room Temperature Ionic Liquids', in collaboration with IGCAR, Kalpakam, in the month of February. There was very good response to the workshop from both academic institutes and industrial organizations. The Department hosted short courses (one day each) on 'Science Communication' for the benefit of the students of ICT during 6th -11th January 2012. This activity was organized and conducted by the Marathi Vidnyan Parishad and supported by the Department.

The Department could revamp the inhouse instrumentation facility by efficiently utilising the infrastructure development grant of the UGC-SAP programme.

Getting an overwhelming response to the PhD programme has become a regular feature in the recent past. There was an overwhelming response to our Ph. D Programme this year too.

The graph of the research activities of the Department is on a steep rise as indicated by the output metrics such as publications, patents and degrees awarded. The faculty of the Department published 39 research papers and 05 patents in this year.

Apart from research, the faculty members of the Department also contributed to various academic activities at the state and National levels. They have made valuable contributions to the academic activities of various educational Institutes of the state and the country in terms of giving lectures, participating as resource persons in training programmes and workshops.

Some of the activities that merit special mention are the National Initiative For Undergraduate Sciences (NIUS) programme and the National and International Chemistry Olympiads. Both these activities are coordinated by the Homi Bhabha Centre for science Education, Mumbai. Professor R.V. Jayaram was the Delegation Leader of the Indian Team of the 43rd International Chemistry Olympiad, which was held at Ankara, Turkey in July 2011. The team bagged two gold, one silver and one bronze medal.

I am thankful to all the faculty members, support staff, Post graduate and research students of the Department, who have taken part whole heartedly in all these activities. The achievements and the performance of the Department is the outcome of a synergistic and cumulative efforts of all the members of the Department. I thank them all once gain and am sure that they will continue to render their support in all the future endeavours of the Department and the Institute.

BHALCHANDRA. M. BHANAGE

Professor of Industrial and Engineering Chemistry Head , Department of Chemistry

Subjects taught:

Organic and Inorganic Chemistry, Green Chemistry

Research interests:

- Homogeneous catalysis, Reaction kinetics & mechanism
- Preparation & Characterization of organometallic complexes
- Catalyst-product separation techniques in homogeneous catalysis such as biphasic catalysis, Supported liquid phase catalysis
- Ultrasound assisted organic reactions and catalysis
- C-C, C-N coupling reaction for organic synthesis.
- Microwave assisted organic reactions and catalysis
- Preparation and application of ionic liquids for organic synthesis
- Catalysis and reactions in supercritical carbon dioxide
- Carbon dioxide fixation into valuable chemicals
- Carbon mono-oxide fixation into valuable chemicals
- Hydroformylation for the synthesis of fine chemicals
- Polycarbonate synthesis via organometallic complexes
- Heterogeneous catalysis
- Biocatalysis - study of the behavior of hydrolases in organic solvents and neoteric solvents like ionic liquids, supercritical carbon dioxide.
- Synthesis of nanomaterials. exploration of nanomaterials as catalysts for organic synthesis.
- Green chemistry- Development of environmentally benign synthetic procedures for organic synthesis.
- Hydrogenation reactions for organic synthesis.
- Asymmetric catalysis for organic synthesis.

Research students:

Ph.D - 22
M.Sc - 03
M.Tech -01

Sponsored Projects: 01

Research Publications: 27

Patents: 04

Professional Activities:

- Hon. Secretary , Catalysis Society of India (Mumbai Chapter)
- Member, Scientific Advisory Board, Indian Patent Office
- Resource Person, Maharashtra Public Service Commission
- Fellow, Maharashtra Academy of Sciences
- Life Member :
  - UDCT Alumini Association
  - Indian Chemistry Teachers Association
  - Marathi Vidnan Parishad
  - Catalysis Society of India
  - Chemical Research Society of India
- Examiner and Resource Person to Indian Chemistry Olympiad Since 2004
- Resource Person: Maharashtra State Bureau of Textbook Production and Curriculum
- Biography covered in Marquis Who's Who in the World, 75th Edition, 2008
  - Member, Editorial Advisory Board-
  - The Open Acoustics Journal since 2007
  - The Open Catalysis Journal, since 2008

In house responsibilities:

- Head, Department of Chemistry
- Coordinator of UGC- SAP (DRS-I) programme, Dept of Chemistry
- Coordinator, M. Tech Green Technology (till January 2011)
- Chairman, Research Recognition Committee for Chemistry

Member- Feedback Committee, Time Table Committee, Senate, Academic Calendar Committee, Classroom Committee, Stores and Purchase Committee, Examination Committee

MRS. RADHA V. JAYARAM

M.Sc., Ph.D

Professor of Physical Chemistry

Subjects taught:

Physical chemistry, Organic Chemistry, Analytical Chemistry and Green Chemistry

Research interests:

Heterogeneous catalysis in organic synthesis, Green Chemistry, structurally ordered materials, amorphous alloys, functional polymers, adsorption techniques for removal of water pollutants

Research students:

Ph.D - 13
M.Sc - 05
M Tech -02

Sponsored Projects: 01

Research Publications: 03

Professional Activities:

- Faculty Member, NIUS Programme, HBCSE
- Member, Board of Examiners, Indian National Chemistry Olympiad (INChO)
- Office Bearer – Catalysis society of India (Mumbai Chapter)
- Fellow - Maharashtra Academy of Science
- Resource person- Orientation-cum-Selection Camp - Indian Team of International Chemistry Olympiad
- Examiner, Indian National Chemistry Olympiad Examination
- Resource Person, Work shop on problem solving in Chemistry, IUPAC recognized IYC activity, , Vaze College, Mumbai

In house responsibilities:

- Coordinator, M.Tech (Green Tech) course, ICT
- Member - Academic Council of Institute of Chemical Technology
- Chair person, Research Committee for M Tech (Green Tech) , ICT
- Deputy Coordinator, UGC-SAP Programme, Department of Chemistry
- Coordinator, TEQUIP II for Chemistry Department
- Member, Research Committee for Chemistry, ICT
- Member, Research Committee for Chemical Engineering, ICT
- Member secretary – Faculty Common Room, ICT

MRS. JAYASHREE M. NAGARKAR

M.Sc., Ph.D

Associate Professor of Physical Chemistry

Subjects taught:

Inorganic & Physical Chemistry

Research interests:

Homogeneous catalysis, Reaction kinetics and mechanism, Preparation and characterization of organometallic complexes, Ultrasound assisted organic reactions and catalysis, C-C, C-N coupling reactiona for organic synthesis, Preparation and application of DES for organic synthesis, Heterogeneous catalysis, Synthesis of nanomaterials. Exploration of nanomaterials synthesized as catalysts for organic synthesis, Green chemistry -development of environmentally benign synthetic procedures for organic synthesis, Degradation of organic pollutants, Emusification of vegetable oils.

Research students:

Ph.D- 10
M.Sc- 03

Sponsored projects: (Govt.) 01

Research Publications: 07

Professional Activities:

- Life member, Indian Society of Surface Science and Technology
- Life Member, Indian Women Scientist Association
- Life Member, Society of Advancement of Electro-chemical Science and Technology
- Life Member, Indian Council of Chemists
- Life Member, Catalysis Society of India

In house responsibilities:

- Incharge, Annual report of the Department
- Coordinator for the visiting faculty of the Department
- Departmental representative for Annual report of the Institute
- Member,Special Assistance Programme (SAP), Dept. of Chemistry
- Chairperson ,Visiting faculty of the Institute

SHRINIWAS D. SAMANT

M.Sc., Ph.D.

Professor of Organic Chemistry

Subjects taught:
Organic Chemistry

Research interests:
Mechanistic Organic Chemistry, Synthesis of biologically interesting compounds, New methods of Organic synthesis, Chemistry of surfactants, Sonochemistry, Catalysis.

Research students:
Ph.D – 10
M.Sc - 03

Sponsored projects:
(Govt.) -01
Private - 01

Research Publications: 03

Professional Activities:

- Member, Academic Board, Department of Chemistry (Autonomous), University of Mumbai
- UGC Nominee, UGC-SAP-DRS-II, School of Chemical Sciences, North Maharashtra University, Jalgaon
- UGC Nominee, UGC-SAP-DRS-II, Department of Chemistry, Goa University, Goa
- Member, Syllabus Committee, M. Sc., Part-I (Organic Chemistry), University of Mumbai
- Member, Governing Council, Atomic Energy Education Society
- Member, National Steering Committee, Science and Mathematics Olympiad
- Chairman, paper setting Committee, National Standard Examination in Chemistry, Organized by the Association of Chemistry Teachers, 2011
- Chairman, Paper Setting Committee, M. Sc. Entrance Test (CUCET 2011), Central University of Rajasthan
- Member, Board of Studies, Chemical Sciences, NMIMS University
- Member, Examination Committee, NEST -2011
- Member, Moderation Board, Indian National Chemistry Olympiad Examination, 2011 (INChO-2011) on Undergraduate Science
- Resource Person, Orientation-cum-Selection camp for International Chemistry Olympiad, HBCSE, May 2011
- Member, Panel of Juries, Best Chemistry Teachers Award of Tata Chemicals.
- National Chemistry Presentation Competition on theme Chemistry – Our Life Our Future, organized by National Council of Science Museums at New Delhi, 30th September 2011
- Arranged Science Communication Seminar for UG and PG students at Institute of Chemical Technology on 20th and 21st Jan 2012

In house responsibilities:

- Member of Board of Management of Institute of Chemical Technology
- Memmber of Academic Council of Institute of Chemical Technology
- Member of Research Recognition Committee, Department of Chemistry, Institute of Chemical Technology

ANANT. R. KAPDI

M.Sc., Ph.D.

DST-Fast Track Fellow

Professor of Chemistry

Subjects taught:
Organic chemistry, Organometallic and Analytical Chemistry

Research interests:
Catalysis- Homogeneous catalysis using palladium & nickel based complexes, Heterogenization of the complexes on solid supports & application of both the methodologies in cross-coupling and C-H bond Functionalization of heterocycles; Green Chemistry approaches to synthesis- Microwave assisted organic reactions in aqueous media.
Research students (No.) M.Sc. Project students - 0 4

Sponsored projects: (Govt.) - 01
Ongoing - 01
(DST-SERC Fast Track Fellowship- Rs. 25, 00,000/- from Mar 2011 till Feb 2014)

Sponsor: Department of Science and Technology

Title: Application of Palladacyclic complexes in synthesis

Duration: 3 years (2011-2014)

Total amount: Rs. 25, 00,000/-

Principal investigator: Dr. Anant R. Kapdi

Research publications: 05

Patent: 01

MISS MANJIRI MULYE

M.Sc. (Physical Chemistry)

Tutor

Subject Taught:
Tutorials of Organic Chemistry & Inorganic Chemistry
(FY. BTech (All Branches) & FYCE)

MISS PALLAVI PARAB

M.Sc. (Inorganic Chemistry)

Tutor

Subject Taught:
Tutorials of Analytical Chemistry and Inorganic Chemistry (FYBTech (All Branches) & FYCE)

Mr. P.S. Gaikwad
Laboratory Assistant

Mr. V.R. Haval
Laboratory Assistant

Mr. R.M. Mhatre
Laboratory Assistant

Mr. A.P. Patil
Laboratory Assistant

Mr. A. H. Awale
Laboratory Attendent

Mr. D. P. Chavan
Laboratory Attendent

Mr. S. P. Chavan
Laboratory Attendent

Mr. S. B. Khapne
Laboratory Attendent

Mr. V. G. Masdekar
Laboratory Attendent

Mr. B. V. Tilve
Laboratory Attendent

GC-MS, HPLC, GC and FT-IR

GC-MS

HPLC

GC

FT-IR

Speaker	Topic	Date
Spinco-Biotech Ramanathan Endowment		
Mr.S.Imamichi, M.D., Shimadzu Analytical India Pvt. Ltd., Mumbai	Latest Technologies of Ultrafast LC & LC-MS	23rd February
Golden Jubilee Endowment		
Dr.S.K.Patil, ex.Scientist, BARC, Mumbai.	Discovery of Nuclear Fission	5th March
Gokhale Endowment Lectureship		
Dr. Anil Kumar FNA, FASc, FNASc. (J C Bose National Fellow) Chairman, Physical Chemistry Division National Chemical Laboratory, Pune.	Organic Reactions in Water and Ionic Liquids: A Physical Chemist's Point of View	11th April
B.D.Tilak Visiting Fellowship		
Professor S.R.Gadre IIT, Kanpur	Treating large molecules & clusters by quantum chemical methods- an art of the possible.	20th April
UGC –SAP visiting fellowship **Dr.P.A.Hassan** BARC, Mumbai	Surface and Interfacial Chemistry	
Dr. Amit Bandopadhay **General Manager** analytical instrument Department , Blue star Ltd	Advance in electron microscopy and electron microscopy for chemical analysis	7th July

VISITORS FROM ABROAD

Speaker	Topic	Date
Professor Yves Queneau Associate Director of Institute of Organic Chemistry, University of Lyon, France	Carbohydrates: molecules at the frontier of green chemistry and bioorganic applications	16th January 2012
Professor Arno Basedow Managing Director Patent Exploitation Agency Universities of Baden-Württemberg)-	Patent Evaluation and Exploitation The talk was on the general principles of the evaluation of inventions, their patenting and the exploitation of the results (e.g. through licensing).	19th January 2012
Professor Dr. Oliver Reiser University of Regensburg Institute of Organic Chemistry Regensburg, Germany	Magnetic Molecules - Synthesis and Application	10th February 2012

DAE-ICT centre	Synthesis, Characterization of 1,3-diketonate complexes & their applications in CVD and MOCVD.	3 yrs	48.28 lakh.	Professor B. M. Bhanage	Mr. Satish Lanke Aniruddha Patil
IGCAR, Kalpakkam	Development of novel phosphorous extractants for actinides	3 yrs	Rs. 23,92,000/-	Professor R.V. Jayaram	Mr. S. Disale and Mr. Rupesh Gaikwad
DST-SERC Fast Track	Application of palladocyclic complexes in cross coupling under Green Conditions	3 yrs.	Rs. 25,00,000/-	A. R. Kapdi	-
IGCAR, Kalpakkam	Development of Crown ethers and crown ether based materials for the separation of impo-rtant radioactive elements from high level nuclear waste.	3 years	Rs. 24,37,540	Professor S. D. Samant	Mr. Sachin C Agrawal Mr. Druman R. Utekar
Colgate Pamolive India Ltd.	Study of the degradation of some organic compounds	3 months	Rs. 1, 03, 406/-	Professor S. D. Samant	Mr. Mahesh Edake

RESEARCH CONSULTANCY

Professor B. M. Bhanage

- Laxmi Organics Ltd. Mumbai.

Professor S. D. Samant

- IPCA, Mumbai
- NOCIL, Mumbai

Publications and Patents: Jan - Dec 2011

S.N.	Title of the paper	Authors	Journal
Professor B. M. Bhanage			
1.	Regioselective synthesis of 5-aryl-2-oxazol-idinones from carbon dioxide and aziridines using Br–Ph3+PPEG600P+Ph3Br– as an efficient, homogenous recyclable catalyst at ambient conditions	Watile R. A, Bagal D. B Patil Y. P, Bhanage B. M.*	Tetrahedron Letters, 52, 6383-6387, 2011.
2.	Nanosize Co3O4 as a novel, robust, efficient and recyclable catalyst for A3-Coupling reaction of propargylamines	Bhatte K. D, Sawant D. N Deshmukh K. M Bhanage B. M *	Catalysis Comm-unications, 16, 114-119, 2011.
3.	One-pot electrochemical synthesis of palladium nanoparticles and their application in Suzuki reaction of unactivated halides in aqueous media	Deshmukh K. M, Qureshi Z. S , Bhatte K. D, Venkatesan K.A, Srinivasan T.G Vasudeva Rao P. R Bhanage B. M*	New Journal of Chemistry, 35, 2747-2751, 2011.
4.	PEG-anchored Rhodium polyether di-phosphinite complex as an efficient homogeneous and recyclable catalyst for hydroaminomethy- lation of olefins	Khan S. R, Bagal D. B Bhanage B. M*	Catalysis Communications, 15, 141-145, 2011.
5.	Palladium on Carbon: An efficient, heterogeneous and reusable catalytic system for carbonylative synthesis of N-substituted Phthalimide.	Khedkar M. V, Khan S. R Sawant D. N, Bagal D. B Bhanage B. M*	Advanced Synthesis & Catalysis, 353, 3415-3422, 2011.
6.	Carbon monoxide free one step synthesis of isoindole-1,3-diones via cycloaminocarbonylation of o-halo- arenes using formamides	Sawant D. N., Wagh Y. S K.D. Bhatte, Bhanage B.M*	European Journal of Organic. Chem-ical, 6719- 6724, 2011.
7.	Allylation of 1-phenyl-1-propyne with N- and O- pronucleophiles using polymersupported triphenylphosphine palladium complex as a heterogeneous and recyclable catalyst	Wagh Y. S, Sawant D. N Dhake K. P Deshmukh K. M Bhanage B. M *	Tetrahedron Letters, 52, 5676-5679, 2011.
8.	Improved activity and stability of Rhizopus oryzae lipase via immobilization for citronellol ester synthesis in supercritical carbon dioxide	Dhake K. P, Deshmukh K. M Patil Y. P, Singhal R. S Bhanage B. M*	Journal of Biotec-hnology, 156, 46-51, 2011.
9.	Bronsted acidic ionic liquid: A simple, efficient and recyclable catalyst for regioselective alkylation of phenols and anti-Markovnikov addition of thiols to alkenes	Qureshi Z. S, Deshmukh K. M, Dhake K. P Bhanage B. M *	RSC Advances, 1, 1106-1112, 2011.
10.	Microwave ECR plasma assisted MOCVD of Y2O3 thin films using Y(tod)3 precursor and their characterization	Barve S, Deo M, Kar R , Kishore R, Sreenivasan N Biswas A , Rao M, Gantayet L.M, Patil D, Bhanage B.M *	Plasma Processes & Polymers, 8, 740-749. 2011.
11.	Palladium-catalyzed carbon monoxide free aminocarbonylation of aryl halides using N-substituted formamides as an amide source	Sawant D.N , Wagh Y.S Bhatte K.D, Bhanage B. M*	Journal of Organic Chemistry. 76, 5489-5494, 2011. Top 20 most downloaded arti-cles of June 2011
12.	An efficient and heterogeneous re- cyclable palladium catalyst for chem- oselective conjugate reduction of α,β unsaturated carbonyls in aqueous medium	Bagal D. B, Qureshi Z.S Dhake K. P, Khan S. R Bhanage B. M*	Green Chemistry., 13, 1490 – 1494, 2011.
13.	Palladium polyether diphosphinite complex anchored in polyethylene glycol as an efficient homogeneous recyclable catalyst for Heck reactions	Sawant D. N. Wagh Y. S Bhatte K. D., Panda A. G., Bhanage B. M *	Tetrahedron Letters, 52, 2390-2393, 2011.
14.	Reductive carbonylation of aryl & heteroaryl iodides using Pd(acac)2 as an efficient catalyst	Singh A. S., Bhanage B. M Nagarkar J. M*	Tetrahedron Letters. 52, 2383-2386, 2011.
15.	HPMC-PVA film immobilized Rhizopus oryzae lipase as a biocatalyst for transesterification reaction	Dhake K. P., Tambade P. J Qureshi Z. S Singhal R. S Bhanage B.M*	ACS Catalysis, 1, 316-322, 2011.
16.	Cyanides free cyanation of aryl halides using formamide	Sawant D. N , Wagh Y. S Tambade P. J., Bhatte K. D, Bhanage B. M*	Advanced Synthesis and Catalysis, 353, 781-787, 2011. Top 20 most downloaded articles of May 2011.
17.	Pd(OAc)2/dppf as an efficient and highly active catalyst for the allylation of amines, alcohols and carboxylic acids with 1-phenyl-1-propyne	Wagh Y. S., Sawant D. N., Tambade P. J, Dhake K. P., Bhanage B. M*	Tetrahedron, 67, 2414-2421, 2011.
18.	Ultrasound assisted additive free synthesis of nanocrystalline zinc oxide	Bhatte K. D., Fujita S Arai M, Pandit A. B, Bhanage B. M*	Ultrasonics Sonochemistry, 18, 54-28, 2011.
19.	A simple, efficient and recyclable phosphine-free catalytic system for carbonylative Suzuki coupling reaction of aryl and heteroaryl iodides	Qureshi Z. S Deshmukh K. M Tambade P. J Bhanage B. M*	Synthesis, 243-250, 2011.
20.	Effects of precursor evaporation temperature on the properties of the yttrium oxide thin films deposited by microwave electron cyclotron resonance plasma assisted metal organic chemical vapor deposition	Barve S. A, Mithal J. N Deo M. N , Biswas A Mishra R., Kishore R Bhanage B. M* Gantayet L. M, Patil D. S	Thin Solid Films, 519, 3011-3020, 2011.

21.	Polyvinylsulfonic acid as a novel Brønsted acid catalyst for the synthesis of bis(indolyl)methanes	Ekbote S. S Deshmukh K. M Qureshi Z. S Bhanage B. M*	Green Chemistry Letters Review. 4, 177-183, 2011.
22.	An efficient, catalyst- and solvent-free N-formylation of aromatic and aliphatic amines	Dhake K. P Tambade P. J Singhal R. S Bhanage B. M*	Green Chem. Lett. Rev. 4, 151-157, 2011.
23.	Polymer supported diol functionalized io- nic liquids: An efficient, heterogeneous and recyclable catalyst for 5-aryl-2-oxazolidinones synthesis from CO2 & aziridines under mild and solvent free condition.	Watile R. , Bagal D. B Deshmukh K. M Dhake K. P Bhanage B. M*	J. Mol. Catal. A. Chem., 351, 196-203, 2011.
24.	Synthetic Methodologies Using Sonication Techniques	Qureshi Z.S Deshmukh K.M Bhanage B. M*	Book Entitled "Sono-chemistry: Theory, Re-actions & Synthesis & Applications" pp. 157-188. Editors: Filip M. Nowak, ISBN: 978-1-61728-652-0, Nova Science Pub-lishers,2011.
25.	Homogeneous Catalysis in carbonylative coupling reactions	Tambade P.J Patil Y. P Bhanage B. M*	Book Entitled " Homo-geneous Catalysts: Ty-pes, Reactions & Ap- pl-ications", pp.205-231, Editors: Andew c. Poehler, ISBN: 978-1-61122-894-6, Nova Science Publishers, 2011.
Professor R. V. Jayaram			
26.	Silica supported heteropolyacid catalyzed dehydration of aldoximes to nitriles and alcohols to alkenes	Parghi K.D, Satam J.R Jayaram R.V*	Green Chemistry Letters & Reviews, 4(2), 14, 3-9, 2011.
27.	Synthesis and characterization of versatile MgO–ZrO2 mixed metal oxide nanoparticles and their applications	Gawande M. B Parghi .K.D, Shrikhande J.J Pandey R. K , Ghumman C. A. A Bundaleski N Teodoro O. M. N D Jayaram R. V. Branco P. S*	Catalysis Science and Technology, 1, 1653-1664, 2011.

Dr. J M Nagarkar			
28.	Reductive carbonylation of aryl and heteroaryl iodides using Pd(acac) 2/dppm as an efficient catalyst	Singh, A.S. Bhanage B.M Nagarkar J.M*	Tetrahedron Letters 52 (18), 2383-2386 , 2011
29.	Nano ceria catalyzed synthesis of α-aminophosphonates under ultrasonication	Agawane, S.M Nagarkar J.M*	Tetrahedron Letters, 52, 3499-3504, 2011
30.	Nano ceria catalyzed Ullmann type coupling reactions	Agawane, S.M Nagarkar J.M*	Tetrahedron Letters 52 (41), 5220-5223, 2011
31.	Synthesis of highly substituted indoles in presence of solid acid catalysts.	Nadkarni S. V Nagarkar J. M*	Green Chemistry Letters and Reviews, 4(2), 121-126 ,2011
32.	Formulation and Rheology of Vegetable Oil Based Cosmeceutical Cream Bases	Kumthekar K. R Nagarkar J.M.*	Cosmetics and Toiletries, 126, 702, 704-706, 708, 2011 (Cover Page Article)
33.	Formulation, Rheology and Hypolepidemic Activity of Vegetable Oil Based Egg-Less and Low Fat Food Emulsions	Kumthekar K. R Patravale V. B Nagarkar J. M *	"Journal of Dispersion Science and Technology", Manuscript ID 590747. DOI:10 .1080/01932691. 2011.590747
34.	Storage Stable O/W Emulsions of Karanj (Pongamia glabra), Castor (Ricinus communis L.) and Neem Oil (Azadirachita indica A. Juss) for Pesticide Applications,	Kumthekar K. R Nagarkar J.M*	"Pestology" 35(11), 35-45 ,2011
Professor A. R. Kapdi			
35.	Highly Active Air-Stable Dimeric Palladium(II)-Phosphonite Complex for Efficient Kumada-Corriu Cross-Coupling of (Hetero)Aryl and Alkenyl Tosylates	Ackermann, L Kapdi, A. R Kornhass, C Fenner, S Schulzke, C	Chem. Eur. J. 17, 2965-2971, 2011
36.	C-H bond Arylations and Benzylations on Oxazol(in) es with a Palladium Catalyst of a Secondary Phosphine Oxide.	Ackermann, L Barfusser, S Kornhass, C Kapdi, A. R	Organic Letters. 13, 3082-3085, 2011
37.	Bis(imidate)palladium(II) complexes with labile ligands. Mimics of classical precursors?	Sánchez, G García, J Martínez, M Pérez, J, García, L Serrano J. L Kapdi, A R.	Dalton Trans. 40, 12676-12689, 2011. (Cover Page Article)

Professor S. D. Samant			
38.	Acylation of aromatic ethers using different carboxylic acid anhydrides as acylating agents in the presence of nontoxic, noncorrosive resin amberlyst 15 as a solid acid catalyst,	Pande, M.A., Samant, S. D.,	Syn. Commun. 2011, 41, 754-761.
39.	Mg-Al hydrotalcite as a first heterogeneous basic catalyst for the synthesis of 4H-pyrano[2,3-c] pyrazoles through a four-component reaction,	Kshirsagar, S.W., Patil, N.R., Samant, S.D.,	Syn. Commun., 2011, 41, 1320-1325.
40.	Versatile three component procedure for combinatorial synthesis of biologically relevant scaffold spiro[indole-thiazolidinones] under aqueous conditions,	Dandia, A., Singh, R., Bhaskaran, S., Samant, S.D.,	Green Chem., 2011, 13, 1852-1859.

Patents:

Professor B. M. Bhanage

- Method for the synthesis of palladium nanoparticles using solar energy; A.B. Patil, K.M. Deshmukh, A.B. Pandit, B.M. Bhanage, 2011, Indian patent: 1842/MUM/2011
- Improved process for the electrochemical synthesis of Palladium nanoparticles in ionic liquid as an electrolyte; K. M. Deshmukh, Z. S. Qureshi, K. D. Bhatte, J. M. Nagarkar, K. A. Venkatesan, K. Nagarajan, T. G. Srinivasan, P. R. Vasudeva Rao, B. M. Bhanage, 2011, Indian patent: 1978/MUM/2011
- Improved Process for nitration of phenol using diluted nitric acid alone as the nitrating agent under sonication; N. S. Nandurkar, M. J. Bhanushali, A.G. Panda, B. M. Bhanage Indian Patent No. IN 247957, (20011)
- An Improved Process for the sulfonation of aromatic compounds using sulfuric acid under sonication; Z. S. Qureshi, K. M. Deshmukh, N. S. Nandurkar, B. M. Bhanage; Indian Patent No. IN 247765, (2011)

Dr. A. R. Kapdi

- Tiwari, S., Pednekar, S., Kapdi, A. R. 'Tetrazolinohydrazino pyrazolin-5-one, useful antibacterial molecule' Patent filed PCT. IND 2012.

Faculty

Professor B. M. Bhanage

1) Chemicals in day to day life B. M. Bhanage Invited talk on occasion of "Hindi Day" at " Bhabha Atomic Research Centre (BARC), Mumbai on 14th September 2011.
2) Green processes for the synthesis of valuable chemicals based on carbon dioxide and carbon monoxide B. M. Bhanage Invited talk at "2nd Indo-German Catalysis Conference, at Rostock, Germany during 19th –22nd June 2011.
3) Catalysis Using Carbon Monoxide and Carbon Dioxide to Valuable Chemicals B. M. Bhanage Invited talk at "International Year of Chemistry (IYC-2011), 1st CRSI Zonal Meet at NCL, Pune on 13 -14th May 2011.

Professor R V Jayaram

4) Public private partnership in teaching/ Undergraduate chemistry education-A renewed approach. Veena Khilnani, and R. V. Jayaram Presented in World Education conference at "D.A.V. Public school" New Panvel, Mumbai, Dec. 2011

Mrs. J. M. Nagarkar

5) Presented a research paper entitled "Importance of Ethics in Science and Technology" at the XIth All India Meeting of Women in Science (28-30 January, 2011) at Navi Mumbai, India organized by Indian Women Scientists Association (IWSA).

Dr. A. R. Kapdi

6) Seminar on Green Chemistry and Catalysis: Hosted by Department of Chemistry, K. V. Auditorium, Institute of Chemical Technology, Mumbai, India. 3-4 March 2011.
7) 3rd Indo-German Symposium on Frontiers of Chemistry: Hosted by Department of Chemistry, Indian Institute of Technology at Victor Menzes Centre, IIT Mumbai Powai, Mumbai. 27-28 September 2011.
8) National Conference on Emerging Trends in Chemistry-Biology Interface (ETCBI-2011): Hosted by Department of Chemistry, DBS Campus, Kumaun University, Nainital. At Dr. Sarvapalli Radhakrishnan Hall, 03-05 November 2011. (Presented a poster on "A new route towards Cyclopalladated Complexes with Saccharinate Ligands: Luminescence Properties and Catalytic activity-Submitted Article to Dalton Transaction, 2011)
9) 1st Theme meeting on Room Temperature Ionic Liquids: Hosted by Department of Chemistry, K.V Auditorium, Institute of Chemical Technology, Matunga, Mumbai. 3rd December 2011.

Professor S. D. Samant

10) The National Convention of Chemistry Teachers (NCCT2011) organized by the Association of Chemistry Teachers, October 15-17, 2011 at A N College, Patna, Bihar, State along with a seminar on Green Chemistry and a symposium on Thermal Analysis and Calorimetry (SATAC 2011)
11) 48th Annual Convention of Chemists 2011 and the Celebration of the International Year of Chemistry organized by the Indian Chemical Society, Allahabad University, December 03–07, 2011.
12) Edited by Chemical Education - Narosa Publishing house India By, Dr. Savita Ladhapure, Professor S. D. Samant

Professor B. M. Bhanage

1) An efficient and heterogeneous recyclable palladium catalyst for chemoselective conjugate reduction of α,β-unsaturated carbonyls in aqueous medium D. B. Bagal and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011
2) Allylic Amination of Internal Alkynes with Aromatic and Aliphatic Amines using Polymer Supported Triphenylphoshine Palladium Complex as a Heterogeneous and Recyclable Catalyst Y. S. Wagh and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011
3) Immobilized Rhizopus oryzae Lipase Catalyzed Acetate Synthesis K. P. Dhake and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011
4) An efficient and heterogeneous recyclable palladium catalyst for chemoselective conjugate reduction of α,β-unsaturated carbonyls in aqueous medium D. B. Bagal and B. M. Bhanage Presented as Poster at "International Year of Chemistry (IYC-2011), 1st CRSI Zonal Meet at NCL, Pune on 13 -14th May 2011
5) A Simple, Efficient, and Recyclable Phosphine free Catalytic System for Carbonylative Suzuki Coupling Reaction of Aryl and Heteroaryl Iodide M. V. Khedkar and B. M. Bhanage Presented as Poster at "International Year of Chemistry (IYC-2011), 1st CRSI Zonal Meet at NCL, Pune on 13 -14th May 2011
6) Lipase Catalyzed Synthesis of Acetamide Using Ionic Liquid as a Reaction Medium K. P. Dhake and B. M. Bhanage Presented as Poster at "National Technology Day and International Year of Chemistry Celebrations, at Institute of Chemical Technology, Matunga Mumbai, 11-12th May 2011
7) An efficient and heterogeneous recyclable palladium catalyst for chemoselective conjugate reduction of α,β-unsaturated carbonyls in aqueous medium D. B. Bagal and B. M. Bhanage Presented as Poster at "National Technology Day and International Year of Chemistry Celebrations, at Institute of Chemical Technology, Matunga Mumbai, 11-12th May 2011
8) Pd/C: an efficient, heterogeneous and reusable catalyst for phosphine-free carbonylative Suzuki coupling reaction of aryl and heteroaryl iodides M. V. Khedkar and B. M. Bhanage Presented as Poster at "National Technology Day and International Year of Chemistry Celebrations, at Institute of Chemical Technology, Matunga Mumbai, 11-12th May 2011
9) Allylic Amination of Internal Alkynes with Aromatic and Aliphatic Amines using Polymer-Supported Triphenylphoshine Palladium Complex as a Heterogeneous and Recyclable Catalyst Y. S. Wagh and B. M. Bhanage Presented as Poster at "National Technology Day and International Year of Chemistry Celebrations, at Institute of Chemical Technology, Matunga Mumbai, 11-12th May 2011

Professor R. V. Jayaram

10) Green approach for the synthesis of triazoles using copper apatite as a heterogeneous and reusable catalyst Sandip R. Kale and Professor R. V. Jayaram Presented in International conference on "Heterocyclic chemistry" at Jaipur, Nov. 2011 organized by university of Rajasthan
11) Green synthesis of triazoles using copper apatite as a heterogeneous catalyst. Sandip R. Kale and R. V. Jayaram Presented at "National Technology Day and International Year of Chemistry Celebrations" at ICT, Mumbai, May 2011.
12) Synthesis and catalytic activity of nano Co3O4/ZnO for benzylic methylene oxidation Utkarsha U. Indulkar and R. V. Jayaram Presented at XIIth Internationbal conference on 'Catalysis and Chemistry' 28 February March 2011 at Leeuwenhorst, Noordwijkerhout, Netherlands
13) Studies on Physico-chemical properties of in symmetrical phosphates as an alternative to tributyl phoshpate for nuclear fuel processing. Rupesh H. Gaikwad and R.V. Jayaram Presented in 4th International conference of the Chemistry and physics of trans actinide elements (TAN- 2011) Held in Sochi Russia, 5-11 Sept. 2011
14) Hazard free green synthesis of 1,2,3-triazoles catalyzed by copper apatite as a heterogeneous catalyst in aqueous medium Sandip R. Kale and Professor R.V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT
15) Sulphated Yttria-Zirconia catalysed highly regioselective epoxide ring opening by alcohols under solvent free conditions Sandeep S. Kahandal and Professor Radha V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT.
16) Nano ZnO catalyzed solvent-free enamination of 1,3-dicarbonyls Utkarsha U. Indulkar and Professor R.V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT
17) Nano ZnO catalyzed solvent-free enamination of 1,3-dicarbonyls Utkarsha U. Indulkar and Professor R.V. Jayaram Presented at "National Technology Day and International Year of Chemistry Celebrations" held at ICT, Mumbai, May 2011
18) Nitrobenzene reduction on amorphous alloy Anant Chauhan and Professor R.V. Jayaram Presented at Catschol organized by Department of Chemistry, ICT, Mumbai on March 2011
19) Reduction of nitro aromatics on amorphous alloy using hydrazine hydrate Anant Chauhan and Professor R.V. Jayaram Presented at "National Technology Day and International Year of Chemistry Celebrations" held at ICT, Mumbai, May 2011
20) Surface modified metal oxides and mixed metal oxides as solid acid catalysts Sandeep S. Kahandal and Professor R.V. Jayaram Presented at "National Technology Day and International Year of Chemistry Celebrations" held at ICT, Mumbai, May 2011
21) Study of dissociation equilibria of methyl orange in single and mixed miceller system. M. Sharmam, S. Ladage and R.V. Jayaram Presented at "Third Asian Spectroscopy Congress" Xiamen, China, Nov 2011

Dr. (Mrs.) J. M. Nagarkar

22) "A Novel, Energy Efficient, Recyclable Green Production Protocol for Chlorpyrifos Synthesis" Kedar Kumthekar and Dr. J M. Nagarkar Presented a research paper entitled at 3rd "International Conference" organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata at Panjim, GOA, India. (28-30 Nov. 2011)
23) "A Novel, Rapid and Energy Efficient Process for Anilofos Preparation" Kedar Kumthekar and Dr.Jayshree M. Nagarkar Presented a research paper at 3rd "International Conference on Ecotoxicology and Environmental Sciences (ICEES)" organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata at Panjim, GOA, India. (28-30 Nov. 2011)
24) "An Effective Ecological Balancing through Biopesticidal Potential of Mixed Vegetable Oil Formulations" Kedar Kumthekar and Dr. J M. Nagarkar Presented a research paper at 3rd "International Conference on Ecotoxicology and Environmental Sciences (ICEES)" organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata at Panjim, GOA, India. (28-30 Nov. 2011)
25) "Nanocrystalline photocatalytic treatment for oxidation of dichlorvos and optimal experimental condition in water, Suresh Shendge and Dr. J M. Nagarkar Presented a research paper at 3rd International

Conference on Ecotoxicology and Environmental Sciences (ICEES) organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata at Panjim, GOA, India. (28-30 Nov. 2011)

26) "Effect of Natural Polymer on Rheological Properties of O/W Emulsions" Kedar Kumthekar and Dr. J M. Nagarkar Presented a research paper at National Technology day & International Year of Chemistry Celebrations - A Two day Seminar on Challenges and Opportunities for Education and Research for Development of Sustainable Chemical & Allied Industries" at Institute of Chemical Technology (Deemed University) at Matunga, Mumbai, India. (28-30 Nov. 2011)
27) "Nano Ceria catalyzed novel ullmann type coupling reactions." Sandeep M. Agawane and Dr. J M. Nagarkar Oral presentation at National conference on'48th Convention of Chemists 2011' Presented at Indian Chemical Society in University of Allahbad, Allahbad, 03-07 Dec. 2011
28) "Nano ceria catalyzed synthesis of α Aminophosphonates under ultrasonication" in two day seminar "Challenges and Opportunity for Education and Research for Development of Sustainable Chemical and Allied Industries" Sandeep M. Agawane and Dr. J M. Nagarkar Poster presentation at Institute of Chemical Technology , Mumbai, India , 11-12 May 2011

Professor S. D. Samant

29) Use of solid acid/ base catalyst for the synthesis of fine chemicals. Mohan R. Shetty and Professor S.D Samant Presented at 23rd Research Scholar meet- 2011. Indian Chemical Society, N. G. Acharya and D. K. Marathe College, Chembur, Mumbai
30) Hydrotalcite: A mild and an efficient heterogeneous bas catalyst for the synthesis of fine chemicals. Mohan R. Shetty and Professor S.D Samant Presented at 3rd Catalysis Scholars Meet-2011 (CATSCHOL-2011) in collaboration with Catalysis Society of India, ICT, Mumbai, 23rd - 24th Feb 2011
31) Development of solid polymer based heterogeneous catalyst for unit processes in organic synthsis. Nitin R. Patil and Professor S.D Samant Presented at 3rd Catalysis Scholars Meet-2011 (CATSCHOL-2011) in collaboration with Catalysis Society of India, ICT, Mumbai, 23rd and 24th Feb 2011
32) Investigation of Diels Alder reaction of 4-styrylcoumarins with symmetrical dienophiles leading to 3-4 annulated coumarins Kailas K. Sanap and Professor S.D Samant Presented at Department of Chemistry, D. S. B. Campus, Kumaun University, Nainital
33) Synthesis of dibenzopyranones by Diels-Alder reaction of 7-substituted-4-styrylcoumarins with N-phenylmaleimide followed by dehydrogenation. Kailas K. Sanap and Professor S.D Samant Presented at 48th Annual Convention of Chemists 2011 organized by The Indian Chemical Society, Allahabad University, December 03–07, 2011
34) Studies in the synthesis of heterocyclic polycyclic compounds containing benzopyran moiety Kailas K. Sanap and Professor S.D Samant Presented at 24th Research Scholars Meet in collaboration with Indian Chemical Society (Mumbai Branch), SIES college, Mumbai- 400 022 17th and 18th Feb 2012

BOOK CHAPTER

Inception of a multiphase few M.Sc Programme in Chemistry Chapter in the book Chemical Education- Narosa Publishing house India By Professor R.V. Jayaram, & Professor S.D. Samant

Special Lectures and Visits

Professor B. M. Bhanage

1) Visited Germany, Rostock for invited lecture at 2nd Indo-German workshop on catalysis.
2) Visited Japan During 12th Dec. -19th Dec.2011 at Sendai, Tokyo under AIST-India Collaborative Programme.

Professor R. V. Jayaram

3) Green revolution in Chemistry, VNSG University, Surat, 28th Dec. 2011.
4) Chemical Kinetics- An Introduction, Orientation and Selection Camp, INChO, 26th May 2011.
5) Green chemistry Metrics, ICGW, 12th June 2011.
6) Nano world- An Introduction- K. C. College of Engineering, 10th Jan 2011
7) Synthesis of nano particles- K. C. College of Engineering, 10th Jan 2011
8) Heterogeneous catalysis and green chemistry- RSC sponsored national Seminar, Swami Vivekananda College, Madurai, 25th Jan 2011
9) Laboratory safety and hazard management – safety workshop, ICT, 2nd Feb 2011.
10) Catalysis- brief Introduction to a vast arena, at NIUS camp,HBCSE 24th Dec. 2011

Dr. A. R. Kapdi

11) Research Talk on "Recent Developments in Palladium-Catalyzed Cross-Coupling Reactions" at BASF India Pvt. Ltd., Mumbai, India on 21st September 2011

Professor S. D. Samant

12) 'Organic Reaction Mechanism' at 'Vaze College', Mumbai on 11th Nov 2011
13) 'Excitement in Chemistry' at IGCAR, Kalpakkam on the occasion of IYC on 27th Dec 2011
14) Lecture on Thesis Writing at School of Chemical Sciences, North Maharashtra University, Jalgaon on 9th Mar 2012.
15) Green Chemistry – Educational Perspectives, Lectured delivered at Sant Gadgebaba University, Amravati University Chemistry Teachers Association, Amravati, 25th September 2011

Sr. No.	Research Scholar	Previous Institution	Project
Research Guide- Professor B M Bhanage			
1.	Mr. Sunil S. Ekbote	Assistant Manager at Dharamsi, Morarji Chemicals Co Ltd, Mumbai.	Development of polymer supported catalyst for organic reactions.
2.	Mr. Krishna M. Deshmukh	Project Assistant at NCL, Pune.	Synthesis and Application of Ionic Liquids for organic reaction.
3.	Mr. Ziyauddin S. Qureshi	Project Assistant at NCL, Pune.	Synthesis and Application of Basic Ionic Liquids in Organic Synthesis and Metal Separation.
4.	Mr. Kishor P. Dhake	Microbiologist at CIPLA Ltd, Navi Mumbai.	Studies in Lipases for organic reactions.
5.	Mr. Kushal D. Bhatte	R & D Chemist at IPCA Laboratory, Mumbai.	Synthesis and Application of nanomaterials for organic reactions.
6.	Mr. Dinesh N. Sawant	R & D Chemist at Nicolas Primal Life science, Mumbai.	Transition metal complexes for C- N, C-C bond forming organic reactions.
7.	Mr. Yogesh S. Wagh	R&D Chemist at RPG Life sciences, Mumbai.	Amination and Hydroamination reactions.
8.	Mr. Satish R. Lanke	Project Assistant at IIT Mumbai.	Coupling reactions in organic synthesis.
9.	Mr. Aniruddha B. Patil	Lecturer in chemistry at CKT College, Panvel, Navi Mumbai.	Synthesis of nano-materials for application in organic synthesis with kinetic studies of the reactions.
10.	Mr. Rahul A. Watile	Vidarbh Mahavidyalaya, Amravati	Utilization of Carbon- dioxide for synthesis of valuable chemicals.
11.	Mr. Dattatraya B. Bagal	R&D Chemist at SAI Pharma Ltd. Pune	Studies in hydrogenation reaction for organic synthesis.
12.	Mr. Shoeb R. Khan	Shree Shivaji Science College	Hydroformylation reaction for synthesis of fine chemicals.
13	Mr. Mayur V. Khedkar	Lecturer in Applied chemistry at P. R. Patil Institute of Engg and Technology, Amravati.	Studies in Carbon monoxide fixation reactions for synthesis of fine chemicals.
14	Mr. Ganesh V. More	Lecturer in Applied chemistry at VJTI college, Mumbai.	Studies in Asymmetric catalysis.
15	Mr. Kirtiikumar C.Badgujar	Lecturer in Organic chemistry at Pratap College, Amalner, Jalgaon.	Studies in biocatalysis (Hydrolase's) for organic synthesis.
16	Mr. Ashok B. Khemnar	Wadia College, Pune.	C-H activation strategies for organic synthesis of valuable chemicals.
17	Mr. Sandeep T. Gadge	Project Assistant at IISER, Pune.	Studies in Carbonylation reaction for organic synthesis.
18	Mr. Dilipkumar Yadav.	R&D Chemist at Nycomed Pharma Pvt. Ltd.	Studies in Amination reaction for organic synthesis.
Research Guide- Professor R. V. Jayaram			
19	Mr. Kalpesh Parghi	Institute of science, Mumbai	Studies on bifunctional Catalysts
20	Ms. Utkarsha U. Indulkar.	Institute of science, Mumbai	Catalytic studies of nano sized metal and metal oxides.
21	Mr. Shyam T. Disale.	K.T.H.M. College, Nashik.	Synthesis & application of organo-phosporous & organophoshonates.
22	Mr. Rupesh H. Gaikwad.	Institute of science, Mumbai	Studies on nitrogen and phosphorous based extractants
23	Mr .Sandeep S. Kahandal	K.T.H.M. College, Nashik	Surface modified metal oxides and mixed metal oxides as potential solid acid catalysts.
24	Mr. Sandip R. Kale	Sangamner college, sangamner	Multicomponent reactions catalyzed by solid acid/base catalysts.
25	Mr.Anand S. Burange	Mahatma Phule Senior college, Amravati.	Studies on catalytic and photocatalytic processes using Metal oxides
26	Mr. Anant Chavan	Institute of Science, Mumbai.	Catalytic hydrogenation –theoretical and experimental studies
27	Mr. Deepak Kurhe	R.B.N.B. college, Shrirampur	Synthesis and characterization of functional polymers..
28	Mr. Tushar Deore	Dept. of Chemistry North Maharashtra University, Jalagaon.	
29	Ms.Meenakshi Tayade	Kirti College, Mumbai.	
30	Mr.Suyog Vilas Katkar	SSGM College, Kopargaon.	
31	Mr.Thomson Fernandes	H. Somani Bhavan's College, Mumbai.	
Research Guide- Dr. (Mrs.) J. M. Nagarkar			
32	Mr.Sandeep.M.Agawane	Institute of Science	Heterogeneous catalysis for degradation of pesticides and organic transformation
33	Mr. Kedar R. Kumthekar	University of Mumbai	Studies In Mixed Surfactant Systems And Vegetable Oil Emulsions
34	Mr. Suresh Shendge	Vaze College, Mumbai	Study of transition, inner transition metals and complexes in catalysis
35	Mr. Umakant B. Patil	Pratap College Amalner	Novel methodologies in C-C and C-X bond formation reaction in organic synthesis
36	Mr. Radhesham Shelkar	Pratap College Amalner	Studies in C-N bond formation reaction

37	Mr. Abhilash S. Singh	Institute of Chemical Technology	Studies in C-C and C-O bond formation reaction
38	Mr. Ramesh Zhade	Siddharth College Fort	---------
39	Mr. Sachin A. Sarode	D. G. Ruparel College Matunga	---------
40	Mr. Jeevan M. Bhojane	C. K. T. Panvel	---------
41	Mr. Vilash A. Jadhav	New Arts, Commerce and Science College Ahmednagar	---------
Research Guide- Professor S. D. Samant			
42	Mr. Mohan Shetty	Institute of Science, Mumbai	Use of solid acid/base catalysts for the synthesis of fine chemicals
43	Mr. Sachin Agrawal	Amrawati College, Amrawati	Synthesis of Calixarenes and related compounds & study of their ionophoric properties
44	Ms.Leena Patil	Department of Chemistry, University of Mumbai, Mumbai	Studies in the Synthesis of Nucleoside Analogues
45	Mr. Kailas Sanap	S. P. College, Pune	Studies in the synthesis of Heterocyclic, Poly-cyclic compounds containing benzopyran moiety
46	Mr. Druman Utekar	K. J. Somaiya College, Mumbai	Synthesis of Crown Ether Derivatives
47	Mr. Mahesh Edake	Abasaheb Garware College, Pune	Development of Heterogeneous acid catalysts and their applications in Aromatic Electrophilic Reactions
48	Mr. Nanabhau Karanjule	Ahmednagar College, Ahmednagar	Development of new strategies for the heterocycle synthesis by using solid base catalysts
49	Mr. Balasaheb Jadhav	S. P. College, Pune	Study of ring opening reactions of epoxides for developing new pathways for structurally and functionally important compounds
50	Mr. Adil Khatri	Department of Chemistry, University of Mumbai, Mumbai	Studies in the synthesis of polycyclic heterocyclic compound containing pyran moiety.
51	Mr. Nilesh Korgaonkar	University of Ratnagiri, Ratnagiri	---------
52	Mr. Pratik Jain	Vaze College, Mumbai	Preparation and application of modified metal oxide catalysts for organic synthesis.

Guide: Professor B. M. Bhanage
Name of the Student: Ziyauddin S. Qureshi
Degree: Ph. D. (Sci)
Thesis Title: Application of ionic liquids in organic synthesis, catalysis and various metal separations

Abstract: Environmental concern associated with chemical synthesis has posed strict and vital demands for greener processes, and the development of cost-effective and environmentally benign catalytic systems has become one of the main themes of present day synthetic chemistry. In this context, developments of highly active and selective catalysts are of major importance.

Room temperature ionic liquids (RTILs) have gained great attention in last 15 years as evidenced by their increasing popularity as innovative and environmentally benign reaction media as well as their use as new medium for the immobilization of transition metal-based catalystsThe work done is summarized as follows;

1. Brønsted acidic ionic liquid as an efficient and reusable catalyst for transesterification of β-ketoesters
2. Brønsted acidic ionic liquid: A simple, efficient and recyclable catalyst for Regioselective alkylation of phenols and anti-Markovnikov addition of thiols to alkenes
3. Amberlyst-15 in ionic liquid: An efficient and recyclable reagent for the benzylation and hydroalkylation of β-dicarbonyl compounds
4. Amberlyst-15 in ionic liquid: An efficient and recyclable reagent for nucleophilic substitution of alcohols and hydroamination of alkenes
5. A simple, efficient, and recyclable phosphine-free catalytic system for carbonylative Suzuki coupling reaction of aryl and heteroaryl iodides
6. Electrochemical study of Lanthanum (III) in room temperature ionic liquid
7. Ultrasound assisted sulfonation reaction

Guide: Professor B. M. Bhanage
Name of the Student: Krishna M. Deshmukh
Degree: Ph. D. (Sci)
Thesis Title: Synthesis and characterisation of ionic liquids with their application in organic synthesis and catalysis.

Abstract: The room temperature ionic liquids (RTILs) are liquids which consist of ions and melts at or below 100 °C. They have typical properties like negligible vapor pressure, high thermal stability, and nonflammable nature. Moreover, the physicochemical properties of ionic liquids, such as their melting temperature and hydrophilicity/hydrophobicity, can be finely tuned by altering the structure of the cations and anions.

We have synthesized various Brønsted, Lewis acidic ionic liquid and functionalized ionic liquids. The prepared ionic liquids were extensively characterized by 1H-NMR, 13C-NMR, IR, ESI-MS, TGA and DSC analysis. Furthermore, the applications of prepared ionic liquids were shown as a novel catalyst or ligand for organic transformation. We have also focused on the use of ionic liquid as electrolyte for metal nanoparticle preparation.

The work done is summarized as follows;

1. Synthesis and characterization of ionic liquids Synthesis and characterization of ionic liquids with their application in organic synthesis and catalysis Synopsis
2. Application of ionic liquid as catalyst in organic synthesis
   2.1. Synthesis of β -amido ketones using Brønsted acidic ionic liquid as an efficient and reusable Catalyst
   2.2. Transesterification of dimethyl carbonate with phenol using Brønstedand Lewis acidic ionic liquids

2.3. Ionic liquid promoted synthesis of 1-amidoalkyl-2- naphthols and 1- Carbamatoalkyl-2-naphthols under solvent free conditions

3. Application of ionic liquid as electrolyte
   3.1. Electrochemical synthesis of palladium nanoparticles and their application in Suzuki reaction of unactivated halides in aqueous media
   3.2. Synthesis of silver nanoparticle using ionic liquid as electrolyte at ambient temperature
4. Diol-functionalized ionic liquid as a ligand for Copper **(I) catalyzed reaction of aryl iodide and thiols**: A Theoretical and Experimental Study

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Guide: Professor R. V. Jayaram
Name of the Student: Kalpesh D. Parghi
Degree: Ph. D. (Sci)
Thesis Title: Studies on bifunctional Catalysts
Abstract: Bifunctional catalysts are a class of catalytic materials which have emerged as an outcome of process development. These catalysts reduce the number of steps required to achieve a particular target molecule. In this research programme, we have prepared several bifunctional catalysts with both acidic and oxidative properties. The prepared catalysts were well characterized and tested for their catalytic activity for the following conversions -

1) Dehydration of aldoximes to nitriles and alcohols to alkenes.
2) Oxidation of alcohols to aldehydes/ketones.
3) Sequential epoxidation-aminolysis of styrene to β-amino alcohols.
4) Sequential oxidation and condensation of alcohols to benzimidazoles /benzodiazepines
5) Alkylation of toluene to cymene under vapour phase conditions.
6) Sequential oxidation-condensation for the synthesis of dihydropyrimidones. Silica supported heteropolyacids, mixed metal oxides and surface treated metal oxides were explored as bifunctional catalysts for the above mentioned reactions.

Guide: Professor S. D. Samant
Name of the Student: Nitin Patil
Degree: Ph. D. (Sci)
Thesis Title: Development of solid heterogeneous polymer based reagents and catalysts for unit processes in organic synthesis
Abstract: Heterogenization of catalysts and reagents is an important strategy applied to great advantage in organic synthesis. Catalytic species as well as specific reagents can be tied by different means to solid insoluble supports like polymers and resulting materials can be used in reactions. Such materials have advantages such as easy workup; ease of handling, reusability, and in some cases selectivity.
In the present project polyvinyl pyridine (PVP) is prepared and used, through suitable modifications, to carry out different reactions. Crosslinked PVP was prepared using 4-vinylpyridine and 1,4-divinylbenzene as a crosslinking agent (3%, 5%, 7%). The polymer was supported on inorganic supports such as silica, acidic, neutral and basic alumina in order to obtain maximum surface area. These heterogeneous solid bases were used in the following reactions:

1. The Knoevenagel reaction of aromatic aldehydes with active methylene compounds like ethyl cyanoacetate, malanonitrile

2. Synthesis of 4H- aminopyrans from aromatic aldehydes, malanonitrile and β-ketoesters/ β-diketones through a multicomponent strategy.
3. Tandem Knoevenagel-Michael reaction using aromatic aldehydes, malonitrile and active methylene compounds
4. Study of 1, 2 and 1, 4 addition of active methylene compound on α,β-unsaturated compounds
5. Crosslinked polyvinyl pyridine N-oxide was prepared and used as new heterogeneous catalyst for Morita - Baylis- Hillman reaction
6. Synthesis of aza-heterocycles through cyclocondensation of amines, hydrazine with dihalo, ditosylate derivatives

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Awards and honors

FACULTY

Professor B. M. Bhanage

- Awarded Bronze Medal for the contribution in the field of Chemical Sciences by Chemical Research Society of India (CRSI) on 5th Feb 2012 in RSC-CRSI symposium Trivandrum Kerala
- Visited Germany, Rostock for invited lecture at 2nd Indo-German workshop on catalysis
- Visited Japan During 12th Dec. -19th Dec.2011 at Sendai, Tokyo under AIST- India Collaborative Programme

ISCMA Outstanding Professor Award by Indian Speciality Chemical Manufacturers Association for excellence in academic field for the year 2012.

Professor R. V. Jayaram

Resource person, Orientation-cum-Selection Camp for selecting Indian Team for International Chemistry Olyympiad

J. M. Nagarkar

Received "Expert Featured Research Article Honorarium" of $ 500 for an article entitled "Properties of Vegetal Oil Based creams in skin care" the article was published in Cosmetics and Toiletries

Professor S. D. Samant

Received a special grant of Rs 7 lac., under UGC-BSR one time grant for his research contributions

LIST OF STUDENTS QUALIFIED NET/SET/GATE AFTER MARCH-2011

Sr.No		Name of Student	Exam
1.		Kirtikumar Badgujar	CSIR-NET-JRF June-2011, Rank-143 SET. May-2011
2.		Dilip Kumar Yadav	UGC- NET-JRF Dec.-2011, Rank-72 GATE, Feb-2012. Rank-1185
3.		Radheshyam Shelkar	(NET-LS)-Dec-2011
4.		Nanabhau Karanjule	CSIR-UGC-NET-JRF-December - 2011 and GATE-2012
5.		Nilesh Korgaonkar	CSIR-UGC-NET-LS-December - 2011 and GATE-2012
6.		Prerna Lokhande	GATE-2012
7.		Santosh Revankar	GATE-2012
8.		Vijyesh Vyas	GATE-2012

LIST OF OUTSTANDING ACHIEVEMENTS & AWARDS

Mr. Dinesh Sawant		1. Mr. Dinesh N. Sawant for 'Young Scientist Award in organic Chemistry 2011 at National conference 'Emerging trends in Chemistry Biology Interface' held at Kumaun University, Nainital, Uttaranchal during 03-05th Nov. 2011
Mr. Kishore Dhake		1. Mr. Kishore Dhake received Common Wealth Fellowship to do part of his research work in University of Saskatchewan, Toronto, Canada
Mr. Dattatraya Bagal		1. Mr. Dattatraya B. Bagal Awarded DAAD fellowship (German Academic Exchange Service) 2012 for Doctoral research at Regensburg University, Germany 2. Mr. Dattatraya B. Bagal for 'Indian Chemical Society's Young Scientist Award 2011 and Mr. Dinesh N. Sawant for 'Indian Chemical Society's Young Scientist Award 2011 in Organic Section during their oral presentation at "48th Annual Convention of Chemists and Celebration of the International Year of Chemistry' held at University of Allahabad, U. P. during 03-07th Dec. 2011 3. Selection of Mr. Dattatraya B. Bagal for participation in "FORTH SCIENCE CONCLAVE-An Interaction with Nobel Laureates" held on November 26th - December 02nd, 2011 (Supported by MHRD & DST, GoI), Indian Institute of Information Technology (IIIT), Allahabad, India
Mr. Mayur Khedkar		1. Mr. Mayur V. Khedkar for RSC-PTG Award –2011, during his poster presentation at "15th Indian Society of Chemists & Biologists International Conference", Saurashtra University, Rajkot, India, 4th -7th Feb 2011
Mr. Rupesh Gaikwad		1. Post Graduate Diploma in Chemical Technology Management 2. Elected as a "Member of International Youth Nuclear Congress, Grant Committee" for the conference held at Charlotte, North America 3. Awarded "Shri. G. M. Abhyankar Research Presentation Award" instituted in the Institute of Chemical Technology, for the year 2011-12 to attend "4th International conference on the Chemistry and Physics of the Transactinide Elements", Sochi, Russia, 5-11 September 2011, organized by Flerov Laboratory of Nuclear Reactions (JINR, Dubna), Russia 4. Associate member of Royal Society of chemistry London 5. Life member of Association Separation Scientist and Technologist (ASSET)

Mr. Kedar Kumthekar		1. Kedar R Kumthekar received Award for research paper on "An Effective Ecological Balancing through Biopesticidal Potential of Mixed Vegetable Oil Formulations" presented at 3rd "International Conference on Ecotoxicology and Environmental Sciences (ICEES)" organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata at Panjim, GOA, India. (28-30 Nov. 2011) 2. Kedar R Kumthekar received "Expert Featured Research Article Honorarium" of $500.00 for article entitled "Properties of vegetal oil based creams in skin care" This article was published in Cosmetics and Toiletries October 2011 Issue 702, 704-706, 708
Mr. Sandeep Agawane		1. Sandeep M Agawane received Professor P. Sengupta Memorial" young scientist award in oral presentation, Organic Chemistry Section in National Conference, 48th Convention of Chemists 2011
Mr. Kailas Sanap		1. Dr B N Mankad Award (Young Scientist Award) at 48th annual convention of chemist in December 2011 at Allahabad university organised by ICS Indian Chemical Society at University of Allahbad, Allahbad in Dec. 2011

LIST OF STUDENTS WHO WENT ABROAD TO ATTEND CONFERENCES -

Professor B. M. Bhanage

Sr.No	Name of Student		Name of Conference
1.	Mr. Datta Bagal		• An efficient and heterogeneous recyclable palladium catalyst for chemo selective conjugate reduction of α,β-unsaturated carbonyls in aqueous medium D. B. Bagal and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011
2.	Mr. Yogesh Wagh		• Allylic Amination of Internal Alkynes with Aromatic and Aliphatic Amines using Polymer-Supported Triphenyl phosphine Palladium Complex as a Heterogeneous and Recyclable Catalyst Y. S. Wagh and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011
3.	Mr. Kishor Dhake		• Immobilized Rhizopus oryzae Lipase Catalyzed Acetate Synthesis K. P. Dhake and B. M. Bhanage Presented as Poster at "International conference "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011

Professor R V Jayaram

Sr.No	Name of Student		Name of Conference
1.	Ms. Utkarsha Indulkar		• Synthesis and catalytic activity of nano Co3O4/ZnO for benzylic methylene oxidation U.U. Indulkar and Professor R. V. Jayaram Presented at XIIth International conference on'Catalysis and Chemistry' 28 February- March2011 at Leeuwenhorst, Noordwijkerhout, Netherlands • Nano ZnO catalyzed solvent-free enamination of 1,3-dicarbonyls U.U. Indulkar and Professor R. V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT
2.	Mr. Sandeep Kahandal		• Sulphated Yttria-Zirconia catalysed highly regioselective epoxide ring opening by alcohols under solvent free conditions S. S. Kahandal and Professor R. V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT
3.	Mr. Sandip Kale		• Hazard free green synthesis of 1,2,3-triazoles catalyzed by copper apatite as a heterogeneous catalyst in aqueous medium S. R. Kale and Professor R. V. Jayaram Presented in International conference of "Global Challenges- the role of chemistry in giving their solutions" at Bangkok during 11-15th June 2011 organized by IIIT
4.	Mr. Rupesh Gaikwad		• "Studies on physico-chemical properties of unsymmetrical phosph-ates as an alternative to Tributyl phosphate (TBP) for nuclear fuel processing". • R. H. Gaikwad and Professor R. V. Jayaram at "4th International conference on the Chemistry and Physics of the Transactinide Elements", Sochi, Russia, 5-11 September 2011, organized by Flerov Laboratory of Nuclear Reactions (JINR, Dubna), Russia

MSC STUDENTS

- MSc. Students won Late Professor A. P. Rao Inter collegiate Rolling Trophy from Ramnarain Ruia College

  Mr. Vikrant Yelve, Ms. Vidhi Shah, Ms. Pritam Kamble, Ms. Amruta Karbelkar, Ms. Neelam Tiwari, & Ms. Shilpa Mehendale had participated in Intercollgiate Competition held in Ramnarain Ruia College

L to R: Ms. Pritam Kamble, Ms. Amruta Karbelkar, Mr. Vikrant Yelve, Ms. Vidhi Shah

Ms. Neelam Tiwari received "Best Student" award 2010-2012 under CMP Endowment

MSc Students participated in the YICC (Young Innovation Challenge Competition) event at ICT and won Prizes.

Mr. Shailesh Kannojia, Mr. Bhaskar Gautam: 1st prize in YICC for Ion-Exchange.

Mr. Vaibhav Sable, Ms. Prerna Lokhande and Ms. Sayli Hazare: 2nd prize in YICC for Indofil

Mr. Vijesh Vyas, Ms. Neelam Tiwari: 3rd prize in YICC for Jaydev chemical Industries

M.Sc (II) CHEMISTRY Ist Batch2012

ICT-IGCAR THEME MEETING ON ROOM TEMPERATURE IONIC LIQUIDS

The Marathi Vidnyan Parishad in collaboration with Department of Chemistry, ICT, had organized a one day short course on Science Communication for the benefit of our UG and PG students.

Date: 6th to 11th January

First Row (L-R): Ziyauddin, Shoeb, Mayur, Rahul, Kushal, Dinesh, Kirti kumar, Ashok, Krishna, Dilip, Sandeep, Kishore
Second Row (L-R): Neelam, Santosh, Dattatraya, Ganesh, Anirudh, Yogesh

L to R : Sandeep, Suresh, Radhesham, Sachin, Kedar, Ramesh, Umakant & Abhilash

First Row (L-R): Sandip Kale, Sumesh, Ravi, Anant, Shyamrao
Second Row (L-R): Rupesh, Anand, Indu, Shiwani, Deepak, Sandeep Kahandal

L To R: Prateek, Nanabhau, Vijay, Druman, Kailas, Leena, Mahesh, Balasaheb, Adil, Nilesh

DEPARTMENT OF PHYSICS

First Row Left to Right

Mrs. Vineeta Dinesh Deshpande
M.Sc. M.Phil. Ph. D.
Associate Professor

Deshmukh R. R.
M.Sc., B.Ed., Ph.D.
Associate Professor

Siddharth Kasthurirangan
M. Sc. (Physics)
Assistant Professor

Second Row Left to Right

Mohan Narayan
Ph.D
Associate Professor

Mrs. S. M. Pawde
M. Sc. B. Ed. Ph. D.
Associate Professor

N. C. Debnath
DAE Scientist.C

Third Row Left to Right

S. V. Panse
Ph. D.
Adjunct Professor in Physics

A. K. Kalkar
Adjunct Professor

Faculty has applied for three patents; 1 international and two national. Faculty is engaged in collaborative research with national institutions like Bharthiyar University Coimbatore and BTRA. Department also has research projects from industry- one from Universal Starch and Allied Chemicals and the other from Ambuja Cement.

Mrs. Vineeta Dinesh Deshpande

M.Sc. M.Phil. Ph. D.

Head of the Department

Department for the first time witnessed an extensive refurbishment activity. Entire department got a face-lift with UGC – CAS fund; walls were painted, tiles redone, air conditioners exchanged and a seminar room extended with new amenities.

Department has set up a laboratory with innovative experiments for M.Sc. (Physics) course which is scheduled to start anytime.

Apart from handling teaching effectively, faculty of the Department was effectively engaged in the Research Activity. Apart from studies in various aspects of polymer-polymer composites and nano-composites; like structure-property relationship, morphology, mechanical &rheological properties, thermal behavior, barrier properties, effect of surface modification; department faculty is also actively engaged in solar thermal applications and melt extruded drug delivery studies. Faculty does collaborative research with Polymer, Textile and Pharma Departments. Department faculty is guiding 13 research fellows. Faculty has published 12 papers in refereed journals, given over 15 oral and poster presentations in international/national seminars, delivered 07 invited talks on various occasions. Faculty has received funding from AICTE, DAE and UGC; two major research projects- one from UGC and the other from AICTE are sanctioned this year. Faculty has applied for three patents; 1 international and two national. Faculty is engaged in collaborative research with national institutions like Bharthiyar University Coimbatore and BTRA. Department also has research projects from industry- one from Universal Starch and Allied Chemicals and the other from Ambuja Cement. Faculty has also undertaken industrial consultancies, one to Universal Starch and Allied Chemicals and the other to upcoming solar thermal company.

Mrs. Vineeta Dinesh Deshpande

M.Sc. M.Phil. Ph. D.

Associate Professor

Subjects taught during 2011-12:
Applied Physics, Colour Physics

Research interests:
Structure property relationships of Polymer composites and nanocomposites, evaluation of nanodrug delivery, improvement of solar efficiency in solar panels.

Number of research students :
Ph.D. (Sc) - 08

Number of research publications:
National- 01
Conference proceeding- 04

Number of patents:
National – 01 (applied)

Professional Activities :

- To increase the aptitude of basic sciences among the students, invited popular lectures on colour physics and polymer physics were given in degree colleges.
- Life member of The Society for Polymer Science, India.
- Life member of The Indian Physics Association., India.
- Life Member, Marathi Vidnyan Parishad.
- Life Member of Friend of Tree society
- Member, Association of British Council of Scholars

Deshmukh R. R.

M.Sc., B.Ed., Ph.D.

Associate Professor

Subjects taught during 2011-12:
Solid State Physics

Research interests:
Plasma Technology, Polymer Physics, Functionalization of nano-particles. Molecular tailoring of surfaces using plasma for biomedical applications, textile physics, Electro-optical properties of Polymer Dispersed Liquid Crystals. Polymer nano composites materials.

Number of research students:
Ph.D. (Sc) - 06

Number of research publications:
International- 02 Conference proceeding- 06

Number of sponsored projects:
Government – 01 Private- 01

Professional Activities:

- Life member of Electron Microscope Society of India.
- Life member of The Society for Polymer Science, India.
- Life member of The Indian Physics Association., India.
- Life Member, Marathi Vidnyan Parishad.

Siddharth Kasthurirangan

M. Sc. (Physics)

Assistant Professor

Subjects taught during 2011-12:
Applied Physics 1 , Applied Physics 2, Colour Physics, Physics laboratory, Colour physics laboratory

Research interests:
Ion-atom collisions, x-ray spectroscopy of highly charged ions and plasmas, theoretical polymer physics, solar thermal technology

Number of research publications:
International- 02
Peer-reviewed- 02
Conference proceeding- 05

Fellowships/ Memberships of Professional Bodies :
Member, Indian Society for Atomic and Molecular Physics (ISAMP)

Total No. of Publications:
(peer reviewed) : 07

Total No. Conference proceedings/papers :
international - 12
national – 26

Total No. of Seminars/Lectures/Orations delivered : 02

No. of Citations : 19

Professional Activities (Membership of important Committees):
Member, Indian Society for Atomic and Molecular Physics (ISAMP)

Mohan Narayan
Ph.D
Associate Professor

Subjects taught during 2011-12:
- Physics Lab: F.Y.BChem Engg and F.Y.BTech
- Quantum Mechanics: F.Y.BChem Engg and F.Y.BTech
- Statistical Mechanics: S.Y.BChem Engg.

Research interests:
Theoretical aspects of Polymer Physics

Number of research students currently working :
Ph.D.(Sc) - 01

Number of research publications:
International- 04

Fellowships/ Memberships of Professional Bodies:
Member of ISTE (Indian society for technical education)

Mrs. S. M. Pawde
M. Sc. B. Ed. Ph. D.
Associate Professor

Subjects taught during 2011-12:
Rheology, Physics, FY.BChem Engg. / FY.BTech.
course theory in Semester II and practical in semester I and II

Research interests:
Mechanical, Optical, Thermal and Dielectric Properties of pure polymer, blends and composites

N. C. Debnath
DAE Scientist.C

Research interests:
- Structure-property relationship in complex materials systems

Number of research students:
Ph.D. (Sc) - 2

Number of research publications:
International : 03

S. V. Panse
Ph. D.
Adjunct Professor in Physics

Subjects taught :
Heat, Thermodynamics, Optics to F. Y. B. Chem. Engg. and F.Y. B. Tech.

Research interests:
- Concentrating Solar Power (CSP) technologies

Number of research students:
Ph.D. (Sc) – 02

Number of research publications:
International - 01
conference proceedings - 01
Number of sponsored projects:
Government - 01

A. K. Kalkar
Adjunct Professor

Subjects taught 2011-12 :
Physical Methods of Analysis :

M. Tech. (Sem I)
(Polymer, Surface Coatings, Pharma, Oils, Textiles);
M. Pharma. (Sem I).

Research interests :
- Polymer Science and Engineering,
- Polymer nanocomposites,
- structure-property relationship

Research publication :
International – 01

Professional Activities :
- Life Member, The Society of Polymer Science, India
- Life Member, Materials Research Society of India
- Life Member, Indian Physical Society
- Life Member, Indian Physics Association
- Life Member, Indian Laser Association

Support Staff

Shri A.P. Mhaskar
Instrument Mechanic

Shri P.Y. Nikam
Laboratory Assistant

Shri Y.D. Waghmare
Laboratory attendent

Shri S.Y. Pawar
Laboratory Attendent

Postdoctoral/Ph. D. students' research projects
(name of students, previous institute, title)

No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Gokarna Vinod Shridhar	University of Mumbai	Study of Nanoclay-polymer nano-composites	VDD
2.	Jape Sandeep Padmakar	UDCT	Studies of Crystallization kinetics in thermoplastics / thermotropic liquid crystalline polymer blends	VDD
3.	Vatsaraj Bhakti	University of Mumbai	Structure-Property Relationship of the in situ thermoplastic nanocomposites	VDD
4.	Sayed Amrin	Sardar Patel University, Gujarat	Study of Polymer CNT nano-composites	VDD
5.	Dhanaji Kale	Pune University	Experimental and theoretical heat loss and heat utilization factor for solar thermal power applications	VDD
6.	Nikam Pravin	University of Mumbai	Study of Polymer Metal nano-composites	VDD
7.	Arvind Singh	University of Mumbai	Study of Polymer Nanocomposites using CNT and surface modified CNT	VDD
8.	Sanjay Sahare	Nagpur University	Synthesis and Characterization of carbon nanotube based dye sensitized solar cell.	VDD
9.	Arolkar Gauree	UICT	Study of Biodegradation Kinetics and Characterization of Plasma Processed Biodegradable Polymers	RRD
10.	Malik Manoj	UICT	Synthesis and Characterization of Novel Polymer Liquid Crystal Composites	RRD
11.	Parab Sanmesh	UICT	Studies in Dielectric Properties of Polymer/Liquid Crystal Composites	RRD
12.	Upadhyay Ravindra	Mumbai Univ.	Synthesis of Barium Titanate (BaTiO3) Nanoparticles & Their Use in Polymer Ceramic Composites	RRD
13.	Anuja Jain	Govt Arsts and Science college Ratlam (MP)	UGC/SAP	RRD
14.	Ashish Nimbekar	Nagpur University	UGC/SAP	RRD
15.	Kasthurirangan Siddharth	University of Mumbai	X- ray Spectroscopy of highly charged ions.	Dr. Mohan Narayan
11.	Ramchandra Patil	Mumbai Univ.	UGC/UPE	SVP
12.	Dhanaji Kale	Pune Univ.	UGC/UPE	SVP/VDD

Details of sponsored projects – Government and Private
(Name of Sponsor, Title of Project, Duration, Grant, Principal Investigator/Co-investigators, Names of Research Fellows)

GOVERNMENT AGENCIES:

Sponsor	AICTE
Title	Synthesis Characterization and Study of Properties of Nano-fillers based Polysiloxane composites
Duration	2 years
Total amount	20 Lakhs
Principal Investigator	Dr. (Mrs.) V. D. Deshpande
Research Fellows	-

Sponsor	UGC
Title	Studies of unique morphological and thermal behavior of reorganized Poly (Ethylene Terepthalate) and its nanocomposites with organo modified clay
Duration	2 years
Total amount	9 Lakhs
Principal Investigator	Dr. (Mrs.) V. D. Deshpande
Research Fellows	-

Sponsor	AICTE
Title	Plasma Modification of Surfaces for Aligning Liquid Crystals
Duration	2 years
Total amount	10 Lakhs
Principal Investigator	Dr.R.R. Deshmukh
Research Fellows	-

Sponsor	UGC
Title	Solar steam generation
Duration	3 years
Total amount	25 lakhs
Principal Investigator	Prof. S. V. Panse
Research Fellows	Dhanaji Kale

PRIVATE AGENCIES

Sponsor	Universal Starch
Title	Synthesis of Lactic acid from starch
Duration	2 years
Total amount	14 Lakhs
Principal Investigator	Dr. A.S.Sabnis and Dr. R.R.Deshmukh
Research Fellows	Mayur Sinkar

Details of National and International collaborations:

- Prof S. Uma Sankar Department of Physics, IIT Bombay
- Dr. B. S. Koranga Kirori Mal College (Delhi Univ)

PUBLICATIONS

NO.	TITLE AND AUTHORS	JOURNAL	VOL. NO.	PAGES	YEAR
1.	Effect of Surround on Measured Colour	Colourage	-	-	2011
2.	"Ionization of uracil in collisions with highly charged carbon and oxygen ions of energy 100 keV to 78 MeV" A. N. Agnihotri, S. Kasthurirangan, S. Nandi, A. Kumar, M. E. Galassi, R. D. Rivarola, O. Fojón, C. Champion, J. Hanssen, H. Lekadir, P. F. Weck, and L. C. Tribedi.	Physical Review A	85	032711 (5 pages)	2012
3.	"Impact ionization of molecular oxygen by 3.5-MeV/u bare carbon ions" S. Nandi, A. N. Agnihotri, S. Kasthurirangan, A. Kumar, C. A. Tachino, R. D. Rivarola, F. Martín, and L. C. Tribedi.	Physical Review A	85	062705 (8 pages)	2012
4.	"Effect of Majorana Phases in neutrino oscillation" by B.S. Koranga and M. Narayan	Int. J. Theor.Phys	50	1831-1836 (6)	2011
5.	"Neutrino mass hierarchy above GUT scale" by B.S. Koranga and M. Narayan	Int. J. Theor.Phys	50	1868-1875 (7)	2011
6.	"Relation between CPT Violation inneutrino masses and mixings" by B.S. Koranga, M. Narayan and S. Uma Sankar	Int. J. Theor.Phys	50	760-766 (7)	2011
7.	"Do two flavor oscillations explaination both KamLAND data and the solar neutrino spectrum?" by B.S. Koranga, M. Narayan and S. Uma Sankar	Int. J. Theor.Phys	50	1515 – 1521 (7)	2011
8.	Study of Structures and properties of Silica-based Clusters and its Application to Modeling of Nanostructures of Cement paste by DFT methods Priyanka Bhat and N.C. Debnath	National Seminar on Current Trends in Material Science (CTMS-2011)	4-6	2011	
9.	Theoretical and experimental study of structures and properties of cement paste : the nanostructuralaspects of C-S-H Priyanka Bhat and N.C. Debnath	Journal of Physics and Chemistry of solids	72	920-933	2011
10.	Computation of X-ray powder diffractrograms of cement components and its application to phase analysis and hydration performance of OPC cement Rohan J. Jadhav and N.C. Debnath	Bulletin of Material science	34	1137-1150	2011
11.	Pulsed plasma polymerization for controlling shrinkage and surface composition of nanopores. Waseem Asghar, Azhar Ilyas, Rajendra R. Deshmukh, Sulak Sumitsawan, Richard B Timmons and Samir M Iqbal	Nanotechnology.		285304-285311,	22, 2011
12.	modification of cotton fabrics using plasma technology N. V. Bhat, A.N. Netravali, A.V. Gore, M.P. Sathianarayanan, G.A. Arolkar and R.R. Deshmukh	Textile Research Journal,	81(10)	1014-1026	2011

PATENTS

NO.	INENTORS	TITLE	COUNTRY	Patent No.
1.	V. D. Deshpande, Vinod Gokarna, P. Desai, V.B. Patravale	Pharmaceutical compositions for bioenhancement of active agents	Indian Patent Filed.	1108/MUM/2012

IN-house Faculty Responsibilities

(Membership of various In-house Committees)

Professor V. D. Deshpande

- Head, Department of Physics and various committees thereof
- Member, Examination Committee.

Professor Mohan Narayan

- Member of Classroom Committee.
- Member of T.A. Committee.
- Member Examination committee
- Member Travel Grant committee

Professor R. R. Deshmukh

- Member Admission Committee
- Member Hand book Committee
- Faculty Member on T.A.
- Member Canteen Committee

Seminars/Lectures/Conferences/Symposia/Workshops/Summer or Winter Training Schools attended/Oral OR Poster Presentations

Sr. No.	Title	Author(s)	Name, Volume, number of Journal, and Year of publication.
1	Non-isothermal Cry-stallization kinetics of Nylon 6,6/Bentonite nanoclay by Differential Scanning Calorimetry	V. D. Deshpande & Vinod S. Gokarna	Oral Presentation, ICNANO 2011, Conference Centre at University of Delhi during 18-21 December,2011
2	Study of Carbon nanotube based PVA nanocomposite	V. D. Deshpande & Amrin Sayed	ICNANO 2011, Conference Centre at University of Delhi during 18-21 December,2011
3	Isoconverional analysis of PET/ TLCP VA950 composites.	A. K. Kalkar, V. D. Deshpande, M. J Kulkarni.	Gordon Research conference, June 12-June 17, 2011, Mount Holyoke College South Hadley, Massachusetts, USA
4	Bioenhancement of Curcumin Using Hot Melt Extrusion Technology: Formulation Development, in Vitro Charaterization and in Vivo Pharmacokinetic Studies; at Drug Delivery India 2012	Desai P. P.; Gokarana V.S .; Gugulothu D. B.; Deshpande V. D. and Patravale V. B.	Innovations in Pharmaceutical& Manufacturing Sciences, Hyderabad, India, 24-25th February, 2012.
5	Stabilization & invest-igation of dielectric nature of hexagonal barium titanate with Fe-Li substitution.	P. G. Bhatia & R. R. Deshmukh	National Seminar on Technological Innovations with Environmental Integrity held at HVPM College of Engg. and Tech., Amravati, on 28th February, 2012.
6	Effect of Host Polymer Matrices on Electro Optical and Dielectric Behaviour of Polymer Dispersed Liquid Crystal System.	R. R. Deshmukh, S. S. Parab & M. K. Malik	International Conference on Recent Trends in Advanced Materials (ICRAM) held at Vellore Institute of Technology, Vellore, Tamil Nadu 20-22 February, 2012.
7	Dichroic Dye Induced Nonlinearity in Polymer Dispersed Liquid Crystal Materials for Display Devices.	R. R. Deshmukh, M. K. Malik & S. S. Parab	International Conference on Recent Trends in Advanced Materials (ICRAM) held at Vellore Institute of Technology, Vellore, Tamil Nadu, India 20-22 February, 2012.
8	Effect of Composition on the Dielectric Properties of Polymer-LC Composite Films.	S. S. Parab, M. K. Malik & R. R. Deshmukh	18th National Conference on Liquid Crystals held at North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh, India 15-17 November, 2011.
9	Opto-Electronic Swit-ching Properties of Dichroic Polymer Dispersed Liquid Crystal Composite Films.	R. R. Deshmukh and M. K. Malik	18th National Conference on Liquid Crystals held at North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh, India 15-17 November, 2011.
10	Advances in sustainable technologies for the prevention of marine biofouling.	R.R. Deshmukh, P. Sheth, R.B. Timmons and J.A.Schetz	AVS 58th International Symposium & Exhibition held at Nashville, Tennessee, USA. during Oct 30 to Nov 04, 2011.
11	Affinity Mesh Screen Materials for Rapid Drug Discovery Using Transmission Mode Desorption Electrospray Ionization Mass Spectrometry	Samuel H. Yang, Sumit Bhawal, Rajendrasing Deshmukh, Aruna B. Wijeratne, Brian L. Edwards, Frank W. Foss, Jr., Richard B. Timmons, Kevin A. Schug	American Society for Mass Spectrometry (ASMS), Denver, Colorado, June, 2011
12	'Compound Parabolic Solar Collectors for Process Heat'	A. S. Jadhav, A. S. Gudekar, S. V. Panse and J. B. Joshi,	presented at the World Sustainable Energy Days Wels/Austria 2-4 March 2012
13	Study of structure and properties of silica-based clusters and its application to modeling of nanostructures of cement paste by DFT methods	Priyanka Bhat, N. C. Debnath	Presented at the National Seminar on Current Trends in Materials Science (CTMS-2011) held at Christian college, Chengannur, Kerala, 4-6 August 2011
14	Structure and properties of cement paster : modeling of C-S-H- Nanophases	N. C. Debnath	Presented at 15th National conference on surfactants, emulsions and biocolloids organized by department of chemistry, Tripura University Agartala and Indian society for surface science and technology, Kolkata, 27-29 December 2011
15	Theroretical & exp-erimental investigation of nanostr-uctures of cement paste	N. C. Debnath	Presented at the international conference and workshop on nanostructured ceramics and other nanomaterials University of Delhi, 13-16 March 2012

EVENTS ORGANIZED :

The Centre for Advanced Study (CAS) in which Physics is one of the participating departments organized a one day workshop on "Physico-Chemical Aspects of Textiles, Fibres, Dyes and Polymers". This workshop mainly gave a platform for the research students of the departments under CAS to present their work in addition to lectures by experts in the various fields.

Workshop and Seminar attended :

- Capacity building of woman managers in Higher Education UGC sponsored, S.N.D.T. – Mumbai-400020.
- 'UGC Capacity Building of Women Managers in Higher Education - SAM Workshop' organised by S.N.D.T. Women's University from April 17 - 21, 2012.
- "Role of Bharat ratna Dr. B.R. Ambedkar in Indian Economy and social Upliftment "on his 55th death anniversary at KV Auditorium, ICT." On 7th December 2011 at 10.15 am

BOOK CHAPTER:

Chapter "Pretreatments of Textiles Prior to Dyeing: Plasma Processing" R.R. Deshmukh and N.V. Bhat, in the Book "Textile Dyeing" ISBN 978-953-307-565-5, Editor Peter J. Hauser, In Tech Publisher, December, 2011

Details of Post-graduate/Ph.D. students who passed out :

Name	Course	Title	Guide
Pawar Pravin Prataprao	Ph.D. (Sci)	To study the segmental orientation by Fourier Transform Infrared Study of PVC and it's Blends	Deshpande V.D.
Atul Jadhav	Ph. D. (Sci)	Study of theoretical practical and other aspects of solar thermal technology	SVP

DR. V. D. DESHPANDE

- **Structure Property Relationship:** Polymer Nanocomposites with various fillers are prepared and their thermal, mechanical, dielectrical and optical properties are studied. The structures of such composites are understood using various techniques. Crystallization kinetics studies are also undertaken. All results are analyzed for Structure property relationship.
- **Solar Thermal and Solar Collector Coatings:** Various collector designs are considered to get maximum solar conversion efficiency for solar thermal applications. Various collector paint coatings are being characterized and optimized upto higher temperatures for maximum solar heat transfer.
- **Nano Drug Delivery:** Optimization of melt extrusion of drugs in polymer matrix is done to enhance the efficiency of targeted drug delivery systems.

DR. R. R. DESHMUKH

- **Plasma Processing Of Polymeric Materials:** Low temperature plasma has attracted attention of Scientist and Researchers to convert inexpensive polymer in to a valuable product. Since the temperature of RF and DC glow discharge plasma is just around room temperature, it is the most suitable technique to modify most of the polymer surfaces, without affecting their bulk properties. Plasma is a one-step dry process, it does not require disposal of polluted water like wet chemistry. Therefore it is environment friendly and has many other advantages of other processes of surface modification. One can control plasma chemistry just by controlling plasma process parameters suitably. It is possible to attach certain functional groups such as Hydroxyl, Carboxyl, carbonyl, amine etc on nano particles or onto the polymer surfaces for further use in biomedical applications. Plasma functionalized nano particles can form covalent bonding in polymer composites, thus enhancing its mechanical and thermal properties. It is also possible to make super hydrophobic surfaces using fluorocarbon plasma. Polymers having low surface energy have poor adhesion properties can be subjected to plasma treatment to enhance these properties. Our group at Physics Department has successfully shown that gaseous plasma treatment can enhance surface energy of polymers and textile materials. Polymer surface activation have opened window for pervaporation membranes. Plasma processing can also be used for functionalization of nano materials for various applications.
- **Polymer Dispersed Liquid Crystals:** Liquid crystals are familiar as the basis of the multi-billion dollar flat panel display industry. Over the years, liquid crystal research has transformed into a truly interdisciplinary area. Liquid crystal displays (LCDs) are experienced in most portable electronic equipment's, large display systems, photonics devices etc. due to the inherent optical anisotropy of LCs, it has attracted attention in exploring the unique electro- optical effect of the polymer / LC composite film. At UICT, we are working in the area of polymer dispersed liquid crystal (PDLC) composite films. We have productively studied the electro-optical properties for different compositions of polymers, their co-polymers and different nematic liquid crystals. We showed that the electro-optical properties help us to select the proper composition for their use in displays, light shutters, and in non-display applications also. We have systematically carried out the temperature dependence of these properties and the results help us to apply them in the field of temperature sensors. Future research may see the advent of exploring ferroelectric, antiferroelectric, bent-core nematics for their applications. In addition, the developments would involve improved LC aligning layer for liquid crystal display device applications.

DR. MOHAN NARAYAN

Basically investigating the effect of Planckian mass physics as an effective operator at lower energy scales and its effect on observable neutrino parameters as derived from oscillation experiments.

DR. S. M. PAWDE

Fundamental and applied research aspects of polymer thin films, blends and composites are our main interest. The effect surface coating on substrate is been characterized on the basis of ATR-FTIR spectroscopy, UV – vis. Spectroscopy, SEM and X-ray diffraction techniques. Flexibility index and gloss reflectance are also plying main role in the study of surface properties. Bulk characteristics such as Dielectric properties and mechanical studies are also studied for pure, composite and blend polymer systems. The attempt is made to know the simultaneous application of DC bias potential from 0 to 40volts with AC frequency signal for measurements of electric parameters. Our study also involves Electron beam irradiation surface treatment and its effect due to ionizing radiation on the polymer. The result indicates that incorporation of dopant in the polymer for composites improved the properties, in comparison with those obtained by treatments given to the samples. Polymer coating on the substrate material helps in improving the surface property of the material; hence it can be used as packaging material. After plasma surface treatment polymeric materials shows good improvement in surface related properties and its biopotency.

PROFESSOR SUDHIR PANSE

A test unit of compound parabolic collector (CPC) has been fabricated, covering about 100m2 area and generating steam at about 150oC. The steam has been supplied to an 'absorption refrigeration unit' and its performance has been studied. Also, test rigs for CSP units have been developed to determine modifications in different factors to enhance efficiency.

LABORATORIES

HAAKE Minilab
Differential Scanning calorimeter (DSC)
FTIR
Colour Spectrophotometer
LCR Meter

DEPARTMENT OF MATHEMATICS

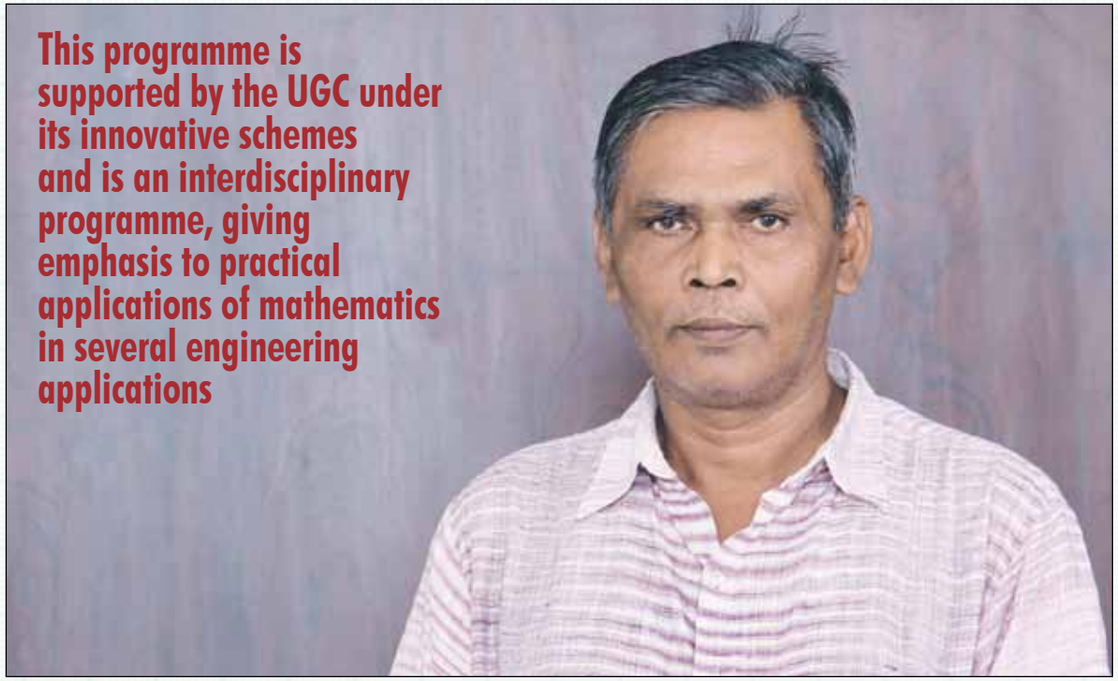
From Right to Left:

A. K. Sahu
B.Sc.(Hons), M.Sc., Ph. D.
Associate Professor

Sunil Kumar Gauttam
Ph.D.
Assistant Professor

Smrutiranjan Mohapatra
Ph.D.
Assistant Professor

Ajit Kumar
Ph.D.
Assistant Professor



A. K. Sahu
Ph. D.
Associate Professor & Head of the Department

The department of Mathematics has started a post graduate course in Engineering Mathematic from the academic year 2011-12. This programme is supported by the UGC under its innovative schemes and is an interdisciplinary programme, giving emphasis to practical applications of mathematics in several engineering applications. The department has also appointed two new faculties at the assistant professor grade under this scheme.

The department has started a new computer laboratory with a capacity of 50 computers with modern computational facilities. The department conducted a two day workshop for T.Y.B.Sc students on the use of computer in mathematics.

Dr. Ajit Kumar of this department was selected as a member of organizing and academic committee for Western Region National Initiative on Mathematics Education (NIME). This is a joint national initiative of INSA & NBHM. He was also selected to be a part of member of the delegation of national presentation on mathematics education at ICME 2012 at S.Korea. In addition to this, Dr. Ajit Kumar was selected as a member of "core committee" of MTTS programme to conduct a national level training programme in mathematics across the country. There were one PDF and one Ph.D student in the department.

A. K. Sahu
B.Sc.(Hons), M.Sc., Ph. D.
Associate Professor

Subjects taught :

- Appl. Math. III (S.Y.B.Chem), Chem. Eng. Math.(B.Chem. Eng.),
- Numerical Methods (M.Sc Eng. Math.)
- Mathematical biology (M.Sc Eng. Math.)
- Computer Applications II (M.Sc Eng. Math.)
- Software Lab. II.(M.Sc. Eng. Math.)

Research interests:
Computational Fluid Dynamics and Mathematical Modeling

Number of research publications:
International – 1
Conference proceeding- 1

Number of sponsored projects :
Government - 1

Total No. of Publications:
(peer reviewed) so far : 12

Total No. Conference proceedings/ papers: 6

Total No. of Seminars/Lectures/Orations delivered :10

Total No. of Masters Awarded as single/ Co-Guide: 1

NUMERICAL STUDIES OF THERMAL STRATIFICATION IN LIQUID METAL FAST BREEDER REACTOR

Energy is one of the most important needs for growth and prosperity of the modern world. The various sources of energy can be non-renewable (coal, natural gases and petroleum) and renewable sources of energy (biomass, solar, wind etc). In the recent years, nuclear energy has emerged as a vital source of energy especially in developing countries like India. Various designs of nuclear reactors (Boiling water reactors (BWR), Pressurized water reactors (PWR), Pressurized heavy water reactors (PHWR), Liquid Metal Fast breeder reactors (LMFBR) etc. are being developed and implemented for the power generation across the world. Researchers have developed their interest in design of LMFBR's. Since, they have capability of high power generation with less amount of fuel as compared to other nuclear reactors.

Thermal stratification is one of the most important problems in Liquid Metal Fast Breeder Reactor (LMFBR). The understanding of thermal stratification is very much essential for design of LMFBR. During, SCRAM condition the cold fluid enters into the hot pool. Due to high density of the cold fluid, it will be collected in the lower part of the reactor vessel. A large part of the coolant in the upper part of reactor vessel remains hot. This phenomenon creates a thermal stratified condition and produces an axial temperature gradient in the reactor pool. Thus, the study of the degree of thermal stratification and its persistence are essential for the thermal design of LMFBR. Several studies [1-2] (both experimental and numerical) have been carried out to study the thermal stratification in fast breeder reactors.

At present CFD studies have been carried out to investigate the parametric sensitivity of standard k-ε model for thermal stratification.

Fig.1 shows the effect of $C\mu$ (0.05,0.07 and 0.09) on rising speed of the stratification interface. It was interesting to note that below intermediate heat exchanger's (IHX)($z^* < 0.4$), the predicted interface height

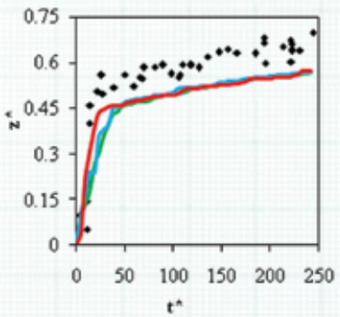


Fig.1: Effect of $C\mu$ on rising speed of stratification interface

Fig.2: Experimental Set-up for thermal stratification studies

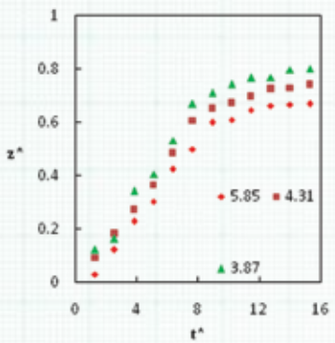


Fig.3: Effect of Richardson number's on thermal stratification

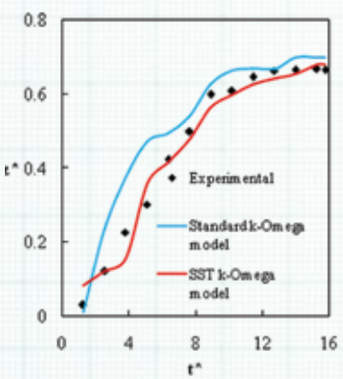


Fig.4: Effect of turbulence models on thermal stratification

agreed well with the experimental data. But, it under predicts in the upper part of the reactor vessel (Fig. 1). It may be concluded that the parametric sensitivity of k-ε model fails to predict thermal stratification and it's characteristics in the upper part of the reactor vessel.

Further, experimental studies have been carried out in the lab scale to investigate the effects of Richardson numbers (Ri's) on thermal stratification and it's characteristics. Fig. 2 shows the experimental set-up. It has been observed that, non-dimensional interface height (z*) is inversely proportional to Ri. It means that at high Ri, interface velocity decreases. This may be due to increase in the buoyancy forces near the stratification interface. Further, CFD studies have been carried out to investigate the turbulence models on thermal stratification. CFD validations have been carried out at Ri = 5.85. Fig. 4 shows the effect of turbulence models on thermal stratification. Since, it has been found from the parametric study of k-ε model [3] is not a robust model for the predictions of thermal stratification. So in the present study standard k-ω model and SST k-ω model have been considered for the computation. It was interesting to note that, the prediction of stratification interface from standard k-ω model agreed well with the experimental data. So, it may be concluded that the standard k-ω model is giving better performance as compared to SST k-ω model for thermal stratification studies.

REFERENCES

1. Moriya S., Tanaka N., Katano N., Wada A. (1987) Effects of Reynolds number and Richardson number on thermal Stratification in hot plenum, Nuclear Engineering and Design, 99: 441-451
2. Muramatsu T. and Ninokata H. (1994) Investigation of turbulence modelling in thermal stratification analysis, Nuclear Engineering and Design, 150 : 81-93.
3. Das, Shyam. S; Sahu, A.K; Padmakumar, G; Ganguli, A (2012) CFD Analysis of thermal stratification and sensitivity study of model parameters for k-ε model in cylindrical hot plenum , Nuclear Engineering and Design, Article in Press, May 2012.

Ajit Kumar

Ph.D.

Assistant Professor

Subjects taught during 2011-12:

- M.Sc.: Applied Linear Algebra, Optimization Techniqies, Software Lab
- U.G.: Applied Math I, Applied Math IV, Engineering Applications to Computers

Research interests:

- Optimization and Statistical Techniques,
- Differential Geometry & Analysis
- Mathematical Pedagogy,
- Use of Computer Aided Tools and Mathematical Software in Mathematics.

Total No. of Publications:

(peer reviewed) so far : 1

Total No. Conference proceedings/papers: 4

Total No. of Seminars/Lectures/Orations delivered : 25

Highlights of research work done and its impart (maximum two single-spaced pages with figures/diagrams etc.) :

My current area of interest is in the feld of Optimization Techniques, Statistical Techniques, Numerical Method and Mathematical Pedagogy. Although my doctoral thesis was in the area of Differential Geometry, I have not been able to work further in this area due to the nature of my current teaching assignments. However, this has provided me opportunity to developed newer interests. I plan to continue to focus these areas and get deeply involved. I also have signifcant experiences in using mathematical software and programming languages which are very important especially in these area of mathematics. I wish to explore the water resources management programmes where optimization and statistical techniques such as stochastic optimization etc can play a signifcance role. I believe not much has been done in India in this area and there is a lot of scope, especially when the county is facing a lot of challenges.

Mathematical software have potential to facilitate an active approach to learning, to allow students to become involved in discovery and to consolidate their own knowledge, thus developing conceptual and geometrical understanding and a deeper approach to learning. Emergence of such mathematical tools and its ability to deal with most of the undergraduate mathematics cannot be ignored by mathematics educators. While use of computer technologies in many countries in teaching and learning mathematics have made a signifcant impact at all levels, use of such tools in mathematics teaching at all levels is in its infancy in India. So much so, that many mathematics teachers are not even aware of existence of such tools. My aim is to create awareness about innovative use of Mathematical Software among mathematics teachers across the country. I also wish to create a pool of teachers who can create innovative teaching modules, constantly regular update mathematics teachers knowledge and work as catalyst. We can also create an institution which can take care teachers training programme at all level and use of (Information and comminction Technology) ICT will be in its forefront.

I have been involved with the Mathematics Training and Talent Search (MTTS) programme for last several years in the various capacities. I believe that this programme has benefted a lot of students including me and has made a signifcant impact on mathematical science in India.

Smrutiranjan Mohapatra

Ph.D.

Assistant Professor

Subjects taught during 2011-12:

- Applied Math II (F.Y.B.Tech.)
- Engineering Applcation to Computers (F.Y.B.Tech.)

Research interests:

Applied Fluid Dynamics, Integral Equations and Special Functions

Total No. of Publications:

(peer reviewed) so far: 8

Total No. of Seminars/Lectures/Orations delivered: 3

Number of research publications:

International – 3

Highlights of research work done and itsimpart:

1. The study of different kinds of water waves is of importance for various applications. The practical importance of water waves is evident for hydro-acoustics, submerges navigation, hydrobiology, hydro-optics and ocean research. Particularly in Ocean research, it is required for predicting the behaviour of floating structures (immersed totally or partially) such as ships, submarines and tension-leg platforms and for describing flows over bottom topography. Furthermore, the investigation of water wave patterns of ships and other vehicles in forward motion is closely related to the calculation of the wave-making resistance and other hydrodynamics characteristics that are used in the marine design.
2. Problems of scattering of surface water waves in the two-dimensional linearised theory have created varieties of challenges to applied mathematicians, willing to handle a class of mixed boundary value problems for the two-dimensional Laplace's equation under different types of mixed boundary conditions occurring in the modeling of realistic physical situations applicable to ocean engineering sciences.

Sunil Kumar Gauttam

Ph.D.

Assistant Professor

Fellowships/ Memberships of Professional Bodies:

Total No. of Seminars/Lectures/ Orations delivered : 1

Subjects taught during 2011-12:

F.Y.B.Tech, F.Y.B. Chem (Applied Math I)

Research interests:

Stochastic Control

Applied Math I

(F.Y.B.Tech & F.Y.B. Chemstry)

(name of students, previous institute, title) :

No.	Research Scholar	Previous Institution	Project	Supervisor
1	Mr. Shyam Sumanta Das	Utkal University	IGCAR	Dr. A. K. Sahu

Details of sponsored projects – Government and Private

(name of sponsor, title of project, duration, grant, principal investigator/co-investigators, names of research fellows)

GOVERNMENT AGENCIES:

Sponsor	IGCAR
Title	Thermal Stratification in Molten sodium Pool
Duration	Five years
Total amount	25 lakhs
Principal Investigator	Dr. A. K. Sahu
Research Fellows	one

PUBLICATIONS :

No.	Title and authors	Journal	Vol. No.	Pages	Year
	Das Shyam S., Sahu A. K., Padmakumar G., Ganguli A. :CFD Analysis of Thermal Stratification and Sensitivity Study of Model Parameters for k-ε Model in Cylindrical Hot Plenum.	Nuclear Engineering and Design (Article in Press).			

BOOK CHAPTER: (FIVE)

No.	Author(s)	Title of the chapter	Publisher	Place	Year	Page
1	Ajit Kumar	Laplace Transform	Institute of Distance Education, University of Mumbai	Mumbai	2011	150-180
2	Ajit Kumar	Inverse Laplace Transform	Institute of Distance Education, University of Mumbai	Mumbai	2011	183-197
3	Ajit Kumar	Applications of Laplace Transform	Institute of Distance Education, University of Mumbai	Mumbai	2011	199-209
4	Ajit Kumar	Fourties Series	Institute of Distance Education, University of Mumbai	Mumbai	2011	211-233
5	Ajit Kumar	Fourier Integral and Fourier Transform	Institute of Distance Education, University of Mumbai	Mumbai	2011	233-268

Membership of In-house Committees:

Dr. A.K. Sahu
UGPC, PGPC, Academic Council, Events Organized: Workshop on Use of computer in Mathematics.

Dr. Ajit Kumar
TEQIP Coordinator for Mathematics Department, Member of Classroom Committee, Member of Unfair Means Committee

Seminars /Lectures /Conferences /Symposia /Workshops /Summer or Winter Training Schools attended/Oral OR Poster Presentations:

Dr. Ajit Kumar

- Attended the International Congress of Mathematical Education (ICME-12), held during July 8-15, 2012 at Seoul, South Korea. I was a part of Indian delegation for Indian National Presentation on Mathematics Education in India.
- Attended Western Region conference on "National Initiative in Mathematics Education" at the IISER, Pune during 26-28 December 2011. I was the member of its organizing and academic committee and contributed as one of the panelists on Mathematics Education at Undergraduate and Postgraduate levels.
- Attended National conference on "National Initiative in Mathematics Education" at the HBCSE, Mumbai during 20-22 January 2012.
- Attended "Mathematics Education Trends and Challenges" at the University of Hyderabad, August 19-21, 2011. I was a one of the organizers and also one of the panel member of the theme "Use of Computers in Mathematics".
- Invited to give a talk on "Linear Algebra using SAGE" at the Bhaskaracharya Pratishthan, Pune during the workshop on "Pedagogial Training for Mathematics Teachers" held during April 6–10,2011.
- Invited to give two talks and mentor during the INSPIRE programme of DST at the University of Jammu on December 17 & 18th, 2012.
- Invited to be a resource person during 20th Mathematics Training and Talent Search Programme held at the IIT Kanpur during May 21-- June 14, 2012.
- A course of lectures on "Linear Algebra" during the Mathematics Training and Talent Search Programme at Vellalar College for Women, Erode, Tamil Nadu during December 5-10, 2011.
- Invited talk on "Use of Mathematical Software in Mathematics Teaching at UG level and Establishing Computer Lab for Mathematics" at Vellalar College for Women, Erode, Tamil Nadu during December 8, 2011.
- Invited to give a talk on "Applied Linear Algebra" at the P.R Govt. College, Kakinada during the National Seminar on Linear Algebra and Vector Analysis on 26thand 27thJuly, 2011.
- Invited to delver a series of lectures on "Computational Mathematics Lab" at the University of Mumbai-DAE centre for excellence in basics science, University of Mumbai, Mumbai.

Workshop organised

- "Mathematics Education Trends and Challenges" at the University of Hyderabad, August 19-21, 2011. I was a one of the organizers and also one of the panel members of the theme Use of Computers in Mathematics.
- Western Region conference on "National Initiative in Mathematics Education" at the IISER, Pune during 26-28 December 2011. I was the member of its organizing and academic committee.

Dr. Sunil Kumar Gauttam

Events Organized:

Industrial Consultancy : Project for CAFRAL (A Research Institute of RBI, India).

DEPARTMENT OF GENERAL ENGINEERING

FIRST ROW LEFT TO RIGHT

S. P. DESHMUKH
M.E. (Prod. Engg), Ph. D. (Tech)
Head of the Department

A.C. RAO
B.E. (Mechanical) M.E. (Plastic with Plastic Engg.)
Associate Professor in
Mechanical Engineering.

Mrs. PRERNA GOSWAMI
B.E.(Electrical), M.E.(Instrumentation & Control)
Assistant Professor

VIVEK. R. GAVAL
B.E. (PROD), M.E. (Plastics)
Assistant Professor

SECOND ROW LEFT TO RIGHT

KERAWALLA M.A.K.
B.E.(Electrical), M.E.(Power Systems)
Associate Professor

RAI SUJIT NATH SAHAI
B.E.(Mechanical), M.E.(Plastics Engg)
Assistant Professor

DILIP D. SARODE
Ph. D. (IIT Bombay), M. E. (Structures), B. E. (Civil),
P.G. D. Const Mgt, D.C.S.T.
Associate Professor (Civil)
Reviewer of American Concrete Institute (ACI) Journal.

S. P. Deshmukh
M.E. (Prod. Engg), Ph. D. (Tech)
Head of the Department

Department of general engineering was started in 1952 and right from its inception it is engaged in teaching of general engineering subject related to mechanical engineering, civil engineering, electrical and electronic engineering. The department also carries out the equipment and infrastructure maintenance of the whole Institute. Post graduate course of Master in Plastic Engineering was started by the department from the year 1972 and has been instrumental in graduating students helping the plastic manufacturing industries of the India and abroad. The students of this department have not only started their own industries but also occupy key positions of research, development, design, production and consultants in major plastic industries. Some our alumni has completed their doctoral degrees and handing R&D departments of the industries successfully.
The department has facilities in engineering workshop, electrical and electronic machinery, Plastic processing and testing, CAD/ CAM & CAE facilities with licensed CAD software, Structural mechanics laboratories etc. catering the needs of undergraduate and post graduate students of the Institute. The faculty of the general engineering department has maintained good industrial interactions and this has helped in placement of our students. Department has also guided the Doctoral students in the field of Plastic engineering. Presently students are working on the doctoral degrees in the field of mechanical engineering, energy engineering, electrical engineering, plastic engineering, and in civil engineering fields.

S. P. DESHMUKH
M.E. (Prod. Engg), Ph. D. (Tech)

Subjects taught
1. Equipment Design & Drawing,
2. Engineering Graphics,
3. CAD/CAM/CAE

Research interests
- Plastic composites, Polymeric additives,
- Engineering Materials,
- Energy Engineering,
- Solar Energy,
- Analysis of plastics using CAD/ CAE

Number of research students
RA - 1
Ph.D. (Tech.) - Ongoing 4
M.E. (Plastic Engg) :3

Number of research publications
International- 3
National- 5
Conference proceeding- 2
Books-1

Number of sponsored projects
Government-1

Professional Activities
- Head, Dept of General Engg,
- Member Secretary, Building and Works Committee,
- Member Campus evelopmet, Institute Sport Incharge,
- Member Examination Committee,
- Member Academic Audit Committee,
- Member Canteen Committee,
- Member UGPC/ PGPC committee,
- Chairman Research Recognition Committee of Engineering Subjects

Special Awards/Honours: Nil

Reviewer for :
1. Journal of Thermoplastic Composite Materials
2. Journal of Polymer Engineering & science

VIVEK. R. GAVAL
B.E. (PROD), M.E. (Plastics)
Assistant Professor

Subjects taught
1. Engg. graphics, Advance strength of materials,
2. Processing of plastics,
3. Energy Engg,Equipment design and drawing.

Research interests
Polymer Composites.

Number of research students
M.E.(Plastics engg) -1

Number of research publications:
International-3
Total No. Conference proceedings/ papers: 1
Total No. of Masters Awarded as single/ Co-Guide :1

Mrs. PRERNA GOSWAMI
B.E. (Electrical), M.E.(Instrumentation & Control)
Assistant Professor

Subjects taught
Electrical Engineering & Electronics

Research interests
Energy Conservation, MATLAB simulations

KERAWALLA M.A.K.
B.E.(Electrical), M.E.(Power Systems)
Associate Professor

Subjects taught
Electrical Engineering & Electronics

Research interests
Microprocessors in Power Systems, Power Electronics

Fellowships/ Memberships of Professional Bodies: A.M.I.E.

Faculty

A. C. RAO

B.E. (Mechanical) M.E. (Plastic with Plastic Engg.)

Associate Professor in Mechanical Engineering.

Subjects taught

1. Testing of Plastics,
2. Plastic Product Design,
3. Design of Molds I,
4. Design of Molds –II,
5. Design and Fabrication of Molds and Dies.

Research interests

- Injection mold Design, Extrusion Die Design,
- Extrusion of plastics, Plastic composites, Polymeric
- additives, plastics Design and analysis softwares.

Number of research students

Ph.D. (Tech.) Completed -2
Ph.D. (Tech.) - Ongoing 1
M.E. (Plastic Engg):
Completed - 25
Ongoing - 2

Number of research publications:

International- 3

Professional Activities:

1. Member Research Recognition Committee of Engineering Subjects.
2. Member Educational Committee of Plast India Foundation Member Educational Committee of AIMPA Examiner for Indian Plastic Institute.

RAI SUJIT NATH SAHAI

B.E.(Mechanical), M.E.(Plastics Engg)

Assistant Professor

Subjects taught

1. Engg.graphicsI,II,
2. Processing of plastics,
3. Energy Engg,
4. Principles of plastic machinery design

Research interests

Polymer Composites

Number of research students

M.E.(Plastics engg) -1

Number of research publications

International -2

Total No. Conference proceedings/ papers: 1

Total No. of Masters Awarded as single/ Co-Guide: 1

DILIP D. SARODE

Ph. D. (IIT Bombay), M. E. (Structures), B. E. (Civil), P.G. D. Const Mgt, D.C.S.T.

Associate Professor (Civil)

Reviewer of American Concrete Institute (ACI) Journal.

Subjects taught

Engineering Mechanics and Strength of Materials Structural Mechanics Process Equipment Design I

Research interests

1. Concrete Technology,
2. Construction Chemicals,
3. Composite Materials,
4. Geotechnical Engineering

Number of research students

Ph.D. (Tech.) - 01
Ph.D. (Sc) - 01
M.E. (Plastic) - 03

No. of Publications :

International - 01
Conference / Seminar - 04

Any other relevant additional information

Worked as an expert in the Appellate committee, Hearing Committee and Inspection committee of AICTE New Delhi.

Professional Activity :

1. Fellow of Indian Geotechnical Society
2. Member of Institution of Engineers
3. Member of Indian Society for technical Education

Support Staff

Shri S. D. Shirgaonkar
Draftsman

Shri P. R. Parab
Mechanic

Shri B. S. Bagul
Mechanic

Shri P. R. Gaikwad
Workshop Instructor

Shri V. B. Gorule
Engineering Assistant

Shri P. S. Wale
Mechanic

Shri. N. J. Rajam
Mechanic

Shri B. R. Budhawale
Mechanic

Shri J. M. Ghag
Boiler Attendant

Shri P. S. More
Electrician

Shri P. S. Potdar
Electrician

Shri P. G. Jadhav
Instrument Mechanic

Shri R. G. Butkar
Plumber

Shri L. D. Nunis
Carpenter

Shri. G. L. Bhagat
Carpenter

Shri. R. T. Dhudhmal
Mason & Fitter

Shri P. K. Chavan
Lab. Attendant

Shri D. G. Malusare
Lab. Attendant

Shri S. D. Vengurlekar
Lab. Attendant

Shri D. R. Tajane
Lab. Attendant

Shri. S. S. Mane
Lab Attendant

Shri. S. L. Pawar
Lab Attendent

Shri S. N. Shelar
Lab. Attendant

Shri L. R. Kadam
Lab. Attendant

Shri D. T. Baraskar
Lab. Attendant

Students' seminars/projects/home papers

UNDERGRADUATE: SEMINARS 1

No.	Name of the Student	Topic	Research Guide
1	Lahoti shilesh S & others	Cold & hot die casting & Centrifugal Casting processes & its Advantages & disadvantages	Dr. S. P. Deshmukh
2	Marfatia Pratik B. & others	Rolling ,forging & Extrusion of metals & its advantages &disadvantages	Dr. S. P. Deshmukh
3	Gupta Nishitha R & others	Submerged arc TIG,MIG, Plasma Welding Techniques	Dr. S. P. Deshmukh
4	Patil RavirajY. & others	Heat treatment of materials and their applications Its Advantages & Disadvantages	Dr. S. P. Deshmukh
5	Biswas Sumit B & others	Types of corrosion & environment in which it effects process Equipment materials.	Dr. S. P. Deshmukh
6	Bhomle Amrita A & others	Machining processes Such as Lathe, Drilling, Shaping, milling & grinding	Dr. S. P. Deshmukh
7	Kulkarni Rama S & others	Selection & types of Materials used for fabrication of Process equipments	Dr. S. P. Deshmukh
8	Khan Salman O &Others	Safety Devices used on process equipments.	Dr. S. P. Deshmukh

No.	Name of the Student (Beginning with Last name)	Topics	Research Guide
1.	Group Projects to S Y C E students under Structural Mechanics Laboratory	Aluminium and its alloys	Dr. D. D. Sarode
		Stress Strain Relationship	Dr. D. D. Sarode
		Polycarbonates	Dr. D. D. Sarode
		Strain Deformation Relationship	Dr. D. D. Sarode
		Thermogravimetry and Infrared Spectrometry	Dr. D. D. Sarode
		Bakelite	Dr. D. D. Sarode
		Carbon and Glass fibre Composites	Dr. D. D. Sarode
		Nylon	Dr. D. D. Sarode
		Corrosion in Metals and Anticorrosive coatings	Dr. D. D. Sarode
		NMR and TEM	Dr. D. D. Sarode
		Teflon	Dr. D. D. Sarode
		Carbon Black and Carbon Dating	Dr. D. D. Sarode
		Scanning Electron Microscope	Dr. D. D. Sarode
		Porosity Measurement by SANS and Surface area by BET	Dr. D. D. Sarode
		Graphites and its Uses	Dr. D. D. Sarode
		Photovoltaic Cell	Dr. D. D. Sarode

SEMINARS 2

No.	Name of the Student	Topic	Research Guide
1	Verma Disha H & Others	Radiographic Tests of Process Equipments & its Advantages & Disadvantages	Dr. S. P. Deshmukh
2	Deshpande Nitish S & others	Types of Ultrasonic Tests of process equipments, Test Setups, equipments & Result analysis	Dr. S. P. Deshmukh
3	Kale Nikita S & others	Air & Hydraulic Tesing of Process Equipments	Dr. S. P. Deshmukh
4	Priyanka Ramchandran & others	Dye Penetration Test of Process Equipment & its Advantages & Disadvantages	Dr. S. P. Deshmukh
5	Jain Akhil B & others	Freon Tests of Process Equipment. It's advantages & Disadvantages	Dr. S. P. Deshmukh
6	Nair Sujith K & others	Magnetic Particle Test of Process Equipment & it's limitations	Dr. S. P. Deshmukh
7	Kharbanda Pavneet K & others	Mechanical Tests performed on Process Equipment Materials & their applications	Dr. S. P. Deshmukh
8	Solanki Neelam P. &Others	Leak Tests of Process Equipments	Dr. S. P. Deshmukh

POSTGRADUATE

No.	Name of the Student	Topics	Research Guide
1	Dipak H. Kokate	Overview of Indian Plastic Industries and Opportunities for Conservation of Energy	Dr. S. P. Deshmukh
2	Vikramsinha S. Korpale	Recycling of Plastics Based on Nuclear Energyplexes	Dr. S. P. Deshmukh
3	Dipak H. Kokate	Processing of Polymer matrix Composites Using variable frequency Microwave (VFM)	Dr. S. P. Deshmukh
4	Dipak H. Kokate	Application of Solar Thermal Energy for Plastic Processing	Dr. S. P. Deshmukh
5	Vikramsinha S. Korpale	Particle filled Polyethylene Composites Used in the technology of Rotational molding.	Dr. S. P. Deshmukh
6	Vikramsinha S. Korpale	Bioplastics: A Promoter of Zero Land Fill Concept.	Dr. S. P. Deshmukh
7	Lokesh Kinge	Molecularly imprinted polymer	Shri. RSN Sahai
8	Mayur Deshmukh	Fiber Reinforcd Plastics used in Construction Industries	Dr. D. D. Sarode
9	Ajit More	Behaviour of FRP- confined Concrete after high Temperature exposure	Dr D. D. Sarode
10	Sagar Waghmare	Anti Corrosive Coatings for Steel	Dr D. D. Sarode
11	Prasad Balan Iyer	Thermoforming and Its Developments	Shri. V. R. Gaval

POSTDOCTORAL/Ph. D.

No.	Research Scholar	Previous Institution	PROJECT	Supervisor
1	Sandesh Ramtake	ICT	Studies In Polytetrafluroethylene As An Additive For Lubricating Materials For Various Applications	A.C.Rao

GOVERNMENT AGENCIES: ONE

No.	Sponsor	Title	Duration	Total amount	Principle Investigator	Research Fellows
1.	U.G.C.	Cycle time Reduction In Rotomoulding og plastic articles	Three Years	Rs. 9.4lakhs	Dr. S. P. Deshmukh	Vikramsinha Sarjerao Korpale

Details of National and International collaborations

1. VJTI, Mumbai

Details of publications, patents, books, etc.

PUBLICATIONS

No.	Title and Authors	Journal	Vol. No.	Pages	Year
1	S.P. Deshmukh, A.C. Rao, Mica Filled PVC Composites: Performance enhancement in Dielectric and Mechanical Properties with Treated/ Untreated Mica of Different Particle Size and Different Concentration	Jour. of Minerals, Materials Charact.& Engineering	11	169-181,	2012
2	Darshan P. Patel, S. P. Deshmukh, 'Polymer in Sustainable Energy'	Jour. of Minerals, Materials Charact.& Engineering	11	No.7	2012
3	Ramteke Sandesh S., Rao A.C., Deshmukh S. P.,"Effect of Polytetrafluorethylene on Wear properties and Extreme Load Carrying properties of Lubricating Oil",	Int. Jurn. Of Resear. in Chem. and Environment	2	44-47	July 12

NATIONAL PUBLICATIONS

1. Ashok S.Patole, Dr.B.E.Narkhede, Dr.S.P.Deshmukh, Dr. Koilakuntla Maddulety, "Lean Six Sigma-a synergistic approach", SIBACA Management Review, ISSN:2231-5861, Vol.-1, Issue-2, December 2011, pp 21-32.
2. Ashok S.Patole, Dr.B.E.Narkhede, Dr.S.P.Deshmukh, Dr. Koilakuntla Maddulety, "A Review of deployment of Statistical Tools in Lean Six Sigma", National Conference on India as a Technology Hub and 53rd National Convention of Indian Institution of Industrial Engineering (IIIE), 15-16 December 2011, New Delhi.
3. Ashok S.Patole, Dr.B.E.Narkhede, Dr.S.P.Deshmukh, "Precincts of Lean Six Sigma: An Academic Perspective", Udyog Pragati, NITIE, Accepted (March 2012), in press.

IN-HOUSE FACULTY RESPONSIBILITIES

DR. S. P. DESHMUKH

- Head, General Engineering.
- Member Secretary, B & W Committee,
- Member Infrastructute development, Sprot Inchare,
- Member Examination Committee,
- Member UGPC & PGPC committee,
- Member Research Reg. committee in Plastic Engineering,
- Chairman RRC committee in General Engineering

SHRI. VIVEK.R.GAVAL

- Visiting Faculty committee,
- Campus development

MS. PRERNA GOSWAMI

- Time Table Committee

SHRI. KERAWALLA M.A.K.

- In Charge of Scrap Committee

SHRI. A. C. RAO

- Member RRC committee in General Engineering

DR. D. D. SARODE

- Member of the committee for Training Need Analysis for faculty – TEQIP II
- Coordinator of General Engg Dept for TEQIP II
- Chief Examination Conductor
- Warden Hostel 2
- Member of Anti Ragging Committee
- Member of Unfair Means committee

SHRI. RAI SUJIT NATH SAHAI

- Scrap disposal committee

Seminars/lectures/conferences/symposia/workshops/ summer or winter training schools attended/oral or poster presentations

1. Oral presentation : 'Emerging Technologies-Distribution Generation' , Smart Grid, Future Trends in renewable Technologies, at Padmashri Dr. Vithalrao, Vikhe Patil Institute of Technology & Engineering Pravaranagar on 7th Sep. 2011.
2. Attended Two Week ISTE Worksop on Heat Transfer conducted by IIT Bombay form 29th Nov. to 10th December 2011.
3. Attended 6th International Workshop on Crystalization, filtration, Drying, Milling and Granulation organized by WFCFD & ICT during 16 to 18 Feb. 2012.
4. Attended Two Week ISTE Worksop on Introduction to Research Methodologies conducted by IIT Bombay form 25th June. to 4th July 2012.
5. Paper Presentation at National Conference on Emerging Trends in Energy Engineering (ETEE-2012) at Dehradun Institute of Technology Dehradun March 23-24, 2012 On "Energy Efficiency & Demand Side Management in agriculture Water Pumping".
6. Attended National Conference on Emerging Trends in Energy Engineering (ETEE-2012) at Dehradun Institute of Technology Dehradun March 23-24 ,2012
7. Worked as An Expert in Doctoral Consortium organized at VJTI on 16th March 2012
8. Worked as Member of selection panel of Senior Research Fellow at CIRCOT, Mumbai.

MS. PRERNA GOSWAMI

1. Completed Course work for Ph.D. at VJTI
2. 3 Audit courses- Optimal Control, Robotics and Feedback Control Design
3. 2 Credit courses- Research Methodology and Advance Control Theory

SHRI. KERAWALLA M.A.K.

1. Completed Course work for Ph.D. at VJTI.
2. 3 Audit courses- Optimal Control, Robotics and Feedback Control Design
3. 2 Credit courses- Research Methodology and Advance Control Theory

DR. D.D. SARODE

1. Keynote address on "Biological Additives – A step towards self healing and Durable Concrete Structures" at National Seminar on "Rehabilitation and Retrofitting of Sustainable Structures" on 20th August 2011 at Institution of Engineers (India) Jodhpur organised by Institution of Engineers and M B Engineering College, J. N. V. University, Jodhpur, Rajasthan.
2. Lecture on "Microbial methods for Repairs of RCC structures" on 10th January 12 during a one week short term training programme on "Damage Assessment and Repair Methodology for RCC Structures" orgnised by Civil & Environmental Engg Dept and Structural Engineering Department of V. J.T. I., Mumbai 19.
3. Invited Lecture on Developments in Civil Engineering on 30th Jan 2012 at K. T. Thanawala Hall, Thane for Hydrology Project (Surface Water) Water Resource Department, Govt. of Maharashtra.
4. Attended a two day National Seminar on "Rehabilitation and Retrofitting of Sustainable Structures" on 19th and 20th August 2011 at Institution of Engineers (India) Jodhpur organised by Institution of Engineers and M B Engineering College, J. N. V. University, Jodhpur, Rajasthan.
5. Attended a one day Semianr on Carbon Fibre on 13th Oct. 2011 at Odyssey, Dr. Annie Besant Road, Worli, Mumbai 400 030 organised by Toray International India Pvt. Ltd.
6. Attended a AICTE approved one week short term training programme on "Damage Assessment and Repair Methodology for RCC Structures" from 9th January to 13th January 2012 orgnised by Civil & Environmental Engg Dept and Structural Engineering Department of V. J.T. I., Mumbai 19.
7. Attended a TEQIP Sponsored one week short term training programme on "Performance Based Design of Structures" from 22nd March to 26th March 2012 orgnised by Structural Engineering Department of V.J.T. I., Mumbai 19
8. Dr. D.D. Sarode : Worked as an expert in the Appellate committee, Hearing Committee and Inspection committee of AICTE New Delhi.

Details of postgraduate/Ph.D. students who passed out (name, course, title of project)

Sr.	Name	Course	Tlitle	Research Guide
1.	D. U. Vedak	M.E. Plastic Engineering	Study & Optimization Of Moulding Parameters, Rejection Analysis & Control In Injection Moulding	Dr. S.P. Deshmukh
2.	D. P. Patel	M.E. Plastic Engineering	Effect of sintering additives on cycle time of rotational molding with different particle size.	Dr. S.P. Deshmukh
3.	Parag Nambir	M.E. Plastic Engineering	Replacing Metal Part with Plastic and Optimizing Plastic Part	Mr. A.C. Rao
4.	Pavankumar G	M.E. Plastic Engineering	Determination of Impregnated Parameters for Electrical Insulating Materials in HT-Motor	Mr. A.C. Rao

Short abstract on salient features of research work (maximum two single-spaced pages with figures/diagrams etc.)

DR. S. P. DESHMUKH

STUDY & OPTIMIZATION OF MOULDING PARAMETERS, REJECTION ANALYSIS & CONTROL IN INJECTION MOULDING

D. U. VEDAK

Plastic injection moulding is a typical complex manufacturing process. Rejection is the main problem in the injection moulding of plastic products. Customer being the leader of the global market always insists on better quality product with less cost and minimum rejection. Many companies fail in supplying good quality products at reasonable cost and their rejection rate is also high.

The objective of this work is to study & develop process parameters and cut down the rejection rate of injection molded automotive components where products have suffered due to heavy rejection. Different quality tools like Pareto Chart, Cause & Defect diagram etc. can be used to overcome such difficulties defining root cause analysis of the rejection. Standard operating procedure was implemented using proper process parameters and the corrective action was analyzed to overcome the difficulties of rejection.

EFFECT OF SINTERING ADDITIVES ON CYCLE TIME OF ROTATIONAL MOLDING WITH DIFFERENT PARTICLE SIZE

DARSHAN P PATEL

The objective of this work is to determine the effects of the polymer molecular structure on the sintering process. An experimental study on polymer sintering has been conducted in conjunction with an extensive characterization of the polymer used in this work. A combination of rheological, thermal and spectroscopic techniques was found to be effective in determining the molecular characteristics of the polymer. Rheological experiments were conducted under isothermal and non-isothermal conditions using both powder and cylindrical particles of different size. It was found that the trends observed the sintering of powder were consistent with the predictions of Newtonion sintering models. Sintering results obtained using cylindrical particles, however also show significant differences as compared to powdered particles.

SHRI. A.C. RAO

REPLACING METAL PART WITH PLASTIC AND OPTIMIZING PLASTIC PART

PARAG R. NAMBIAR

This study explores the current scenario of the automotive companies, to replace metal parts of the automobile to plastic parts, so as to reduce gross weight of the automobile and increase the efficiency of the automobile. Direct part-for-part replacement with modification can reduce both cost and time required to develop the product. The in-depth study of the existing metal part model is crucial for the model to be designed for the plastic part.

FEA analysis becomes the important aspect before freezing the Modeled part. Tooling and processing feasibility, also plays a crucial role in finalizing the model. Designing of the Mold and then its processing is the further process which is to be carried out. The processing has to deal with the different raw material and testing with the optimum setting in order to meet the drawing specification as laid down by the automotive engineers. Different fixtures have to be designed to meet the design specifications. The part is then further tested in the laboratory for the final application in the automobile.

DETERMINATION OF IMPREGNATED PARAMETERS FOR ELECTRICAL INSULATING MATERIALS IN HT- MOTOR

G. S. PAVANKUMAR

In electrical High tension (HT) motors mica based electrical insulating materials are replaced by the thermosetting resin impregnated insulating materials. This kind of replacement gives a crucial impact to the life of HT motors. To increase the electrical insulating properties and decrease the failure HT-motors which occurs due to corona current and eddy current, resin impregnated insulation material are suggested in many literatures. The literature study of the existing insulating is crucial for the process to be produce resin impregnated insulations materials by modifying existing insulating material.

At present different kinds of mica tapes are used as the electrical insulating materials in HT motors. Those are mica tape with polyester baking, mica tape with glass baking, semi conducting tape and conducting tape. The failure of happens in HT motors due to insulation system failures at higher voltages. In this research work normal mica insulating tapes are replaced by resin impregnated normal mica insulating tapes.

By resin impregnation on electrical insulating materials, it is found that the electrical insulating properties and mechanical properties of the tapes can be improved, so that the failures which will happen in HT-motors can be reduced.

DR. D.D. SARODE

M. E. (PLASTIC)

DEVELOPMENT OF ELECTRICALLY CONDUCTIVE COMPOSITE MATERIAL FOR BIPOLAR PLATE OF FUEL CELL

AJIT S. MORE

Conventionally the bipolar plates of the fuel cell are made up of graphite due to its good electrical and thermal properties. However it constitutes 80% weight of the fuel cell. Hence to reduce the weight, volume and cost, it is necessary to replace with suitable material. The project involves development of electrically conductive composite material (Dough Molding Compound) for bipolar plate to achieve the same. Acetylene carbon black, graphite powder and carbon fibres were used to make the polymer conductive. Various trials were made with varied percentages of these materials to get the electrical conductivity. Finally a suitable formulation is done so as to get the required electrical conductivity of 100 S/cm required for the bipolar plate.

DESIGN AND MANUFACTURING OF COMPOSITE MATERIAL COMPONENT

MAYUR S. DESHMUKH

Day by day many industrial metal components are replaced with composite materials. Composite material components are light in weight, more strength and energy efficient in manufacturing. Development of the computer aided design helps to do many trials before finalization of final design of the product. Project involves complete insight of the steps involved in design of a glass fibre reinforced polymer composite component to replace the metal component. The project gives complete details of right from the understanding of the component, development of CAD model, selection of material, design and fabrication of mould and finally taking out trials from newly fabricated mould. Two components spacer-140 and spacer-200 used in distribution box in electrical installations were successfully designed and manufactured using glass fibre polymer composite using a thermoset polymer.

PH.D. (SCIENCE)

STUDIES OF DEGRADING AND PRECIPITATING MICROORGANISMS IN MATERIALS

SUPRIYA RAUT

Co-Guide : Dr. D. D. Sarode

Certain microorganisms have been found to deposit carbonates. This precipitation of carbonates by biological action is used to improve the properties of cement composites and remediation of cracks in existing costuctions with cementitious materials. Carbonate produced by microorganisms is less soluble as compared to carbonates formed by other actions. Studies will be made to see the improvement in properties of cementitious materials due to precipitation of carbonates. Studies are carried out to understand the irreversible damage caused by biodegradation in materials due to microorganisms.

Laboratory Photo

Rotational Moulding

Group Photo with Research Students

Group photograph with research students

First Row (L To R): Darshan Patel, Palaskar V N, Sandesh Ramteke, Neha pawar, Vikram Korpale, **Second Row (L To R) :** Lokesh, RSn Shai, Sagar, Prasad **Third row (L To R) :** Goswami P, Gaval V R, S P Deshmukh, A.C. Rao, MAK Kerawalla

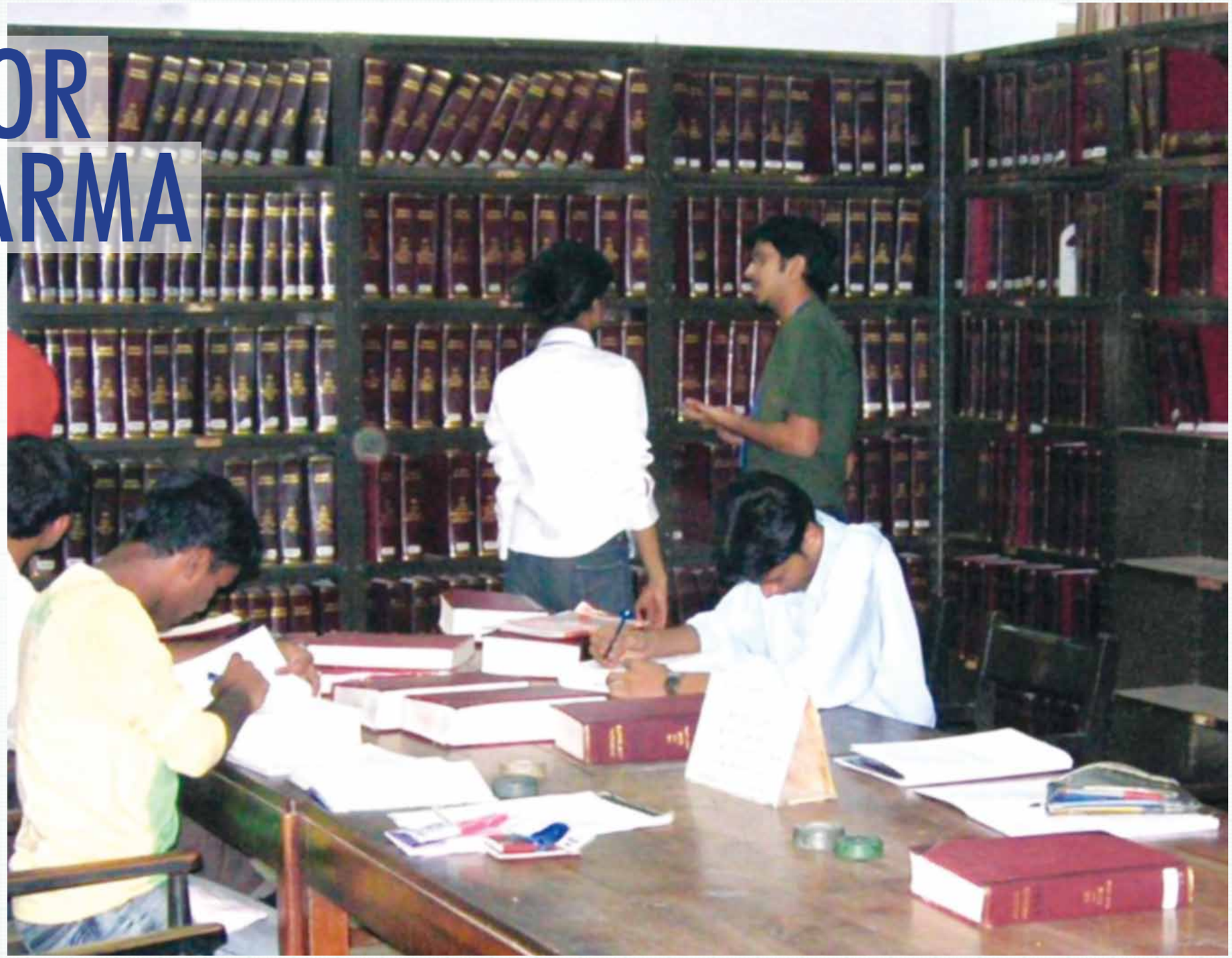
Shri. R. S. N. Sahai with P G Students

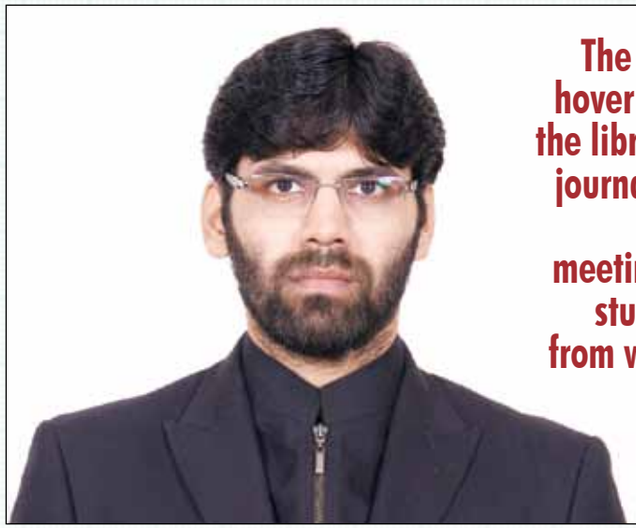
Dr. D D Sarode with Research Students

Shri. A C Rao with Research Student

PROFESSOR M. M. SHARMA LIBRARY

Amogh S. Lokhande
Librarian and the Head of the Library





The library's collection continues to hover around 1,00,000 volumes, and, the library subscribes to over 130 print journal titles. With this, the Professor M.M. Sharma Library continues meeting the information needs of the students, teachers and researchers from within and outside this Institute.

Amogh S. Lokhande
Head of the Library

It is again time to present the annual report of the Professor M. M. Sharma Library. This annual report presents the library's performance in terms of collection development, usage and staff's achievements etc. for the period 2011-2012.

The repairs and renovation of the Professor M. M. Sharma Library, which had begun during the previous year, continued through the year. In view of the library repairs, the theses, Indian Standards, the BIOS, FIAT and CIOS reports and the print journals (current – loose and archival – bound) in the library's collection had to be shifted to different locations out of the library. Thus, the above were inaccessible to the library users. This certainly caused inconvenience to the library users, as has been evident from the number of enquiries about them and also regarding the restarting of the library services.

The monsoon did cause damage to the library – the computer section of the library, on the first floor, was flooded due to combined effect of the heavy rains and the absence of a proper water-proofed ceiling over the second floor, the earlier ceiling being broken to cast anew. This caused disruptions in the library's circulation services for nearly a month. But I appreciate the concerns, patience and support exhibited by the library's users and the co-operation and perseverance of the library staff, in particular, and others, in general, in tiding over these unexpected problems. Such difficult times would make us stronger and lead us to a happy future.

The full-text access to electronic journals from publishers like the ACS, the RSC, Springer, Taylor and Francis and Wiley continued during the year through the UGC-INFLIBNET. While the library continued to subscribe to the databases – SCOPUS (for three years) and REAXYS, and e-journals via Sciencedirect. The library added three new serials (journals) to it's print journals subscription list from this year. The library's collection continues to hover around 1,00,000 volumes, and, the library subscribes to over 130 print journal titles. With this, the Professor M.M. Sharma Library continues meeting the information needs of the students, teachers and researchers from within and outside this Institute.

During the year, Ms. Vanita S. Howal, Library Assistant, received the "Professor M. M. Sharma Best Library Employee" award. Shri. Ashok S. Jadiyar, Library Attendant, won the Second prize in Chess competition at ICT. Ms. Vanita S. Howal, Library Assistant, also won the Second prize in the Carrom – Doubles and Basketball competitions respectively at ICT. Congratulations to the award winners.

Amogh S. Lokhande
Librarian

Librarian and the Head of the Library:
Mr. A.S. Lokhande

Library Staff

Technical Staff:

Ms. P. P. Sawant
Senior Library Assistant

Mr. V. U. Dalvi
Junior Library Assistant

Ms. Vanita Howal
Library Assistant

Mrs. Prajakta Khamkar
Library Assistant

Supporting Staff:

Mr. S. G. Khetle
Library Attendant

Mr. J. S. Pawar
Library Attendant

Mr. G. G. Anjarlekar
Library Attendant

Mr. Wahid Khan
Library Attendant

Mr. S. H. Keni
Library Attendant

Mr. A. S. Jadiyar
Library Attendant

Mr. R.V. Malusare
Library Attendant

Mr. S. S. Shende
Library Attendant

Library Committee:

Professor A.V. Patwardhan	(Chairman)
Professor R. V. Adivarekar	(Member)
Professor P. A. Mahanwar	(Member)
Dr. S.P. Deshmukh	(Member)
Dr. A.W. Patwardhan	(Member)
Dr. R.R. Deshmukh	(Member)
Miss Jyotsna Waghmare	(Member)
Shri D. Jotwani	(Expert: Librarian, Central Library, IIT, Mumbai)
Shri A.S. Lokhande	(Member Secretary)

Library Timings:

On Working days 8:30 a.m. – 8:30 p.m.
On 2nd and 4th Saturdays,
Sundays and holidays 11.00 a.m.– 6.00 p.m.
The library remains closed on Independence day, Republic day, Ganesh Chaturthi, and Dassera.

Speciality areas:

Chemistry, Applied Chemistry, Chemical Technology, Chemical Engineering, Pharmacy, Energy & Environmental Engineering, Biotechnology, Food

Technology & Fermentation, Polymer Science & Technology, Textile Science & Technology, Oils & Surfactants, Dyestuff Technology.

Facilities offered:

Circulation	Internet service (for teachers, students & researchers)
Current awareness	Document Delivery Service (from DELNET)
Photocopying service	Reference & Referral service

Library collection as on 31st March 2011

1. Number of books: 76053
2. Number of scientific and technical journals subscribed:
   - 2.1 Foreign: 108
   - 2.2 Indian: 23
3. Microfiches: 20,000
4. Theses & Dissertations: 4039
5. Electronic Resources
   - 5.1 CD-ROMs: 1243
   - 5.2 Online Journals (via IP) from Elsevier, Wiley, Springer, RSC, ACS, Taylor and Francis
   - 5.3 Online Journal Backfiles: 99 titles
     - Wiley: 40 Titles
       - Biotechnology, biochemistry & biophysics: 15 titles
       - Chemistry: 11 titles
       - Polymer: 10 titles
       - Chemistry Societies: 4 titles
       - RSC: 59 titles
   - 5.4 Online databases, namely, SCIFINDER, SCOPUS and REAXYS.

All the E-resources are available for ICT faculty/ scientists/students as per the license agreements.

Library resources added during the year 2011-2012:

1. Number of books: 70
2. Number of scientific and technical journals subscribed:
   - 2.1 Foreign: 106
   - 2.2 Indian: 25
3. Microfiches: Nil
4. Theses & Dissertations: 00
5. Electronic Resources
   - 5.1 CD-ROMs: 06

Membership of Consortia & Document Delivery Services:

UGC-INFLIBNET e-journals consortium
INDEST-AICTE consortium

Financial Resources

General Fund
Institutional Grants
Library Endowment Fund

Membership

Students of the institute
- Undergraduates: 951
- Post-graduates: 900

Academic staff + Other Academic staff: 101

Outside visitors
- Daily membership: 242
- Individual membership: 16
- Corporate Members: 2

Use of the Library Resources:

Books issue/return transactions: 7614 / 8225
Photocopies: 42570

Individual achievements:

Shri. Amogh S. Lokhande, Librarian, was nominated as a member of the Assessment Committee to assess the suitability for promotion of Library, Information and Documentation Staff Category I and Category II at CIRCOT, Mumbai.

Shri. Amogh S. Lokhande delivered an invited lecture on 'Literature Search' to the Third year and Final year B.Tech. (Dyestuff Technology) students on 23rd February 2012.

Awards and Prizes

Ms. Vanita S. Howal, Library Assistant, was awarded the "Professor M. M. Sharma Best Library Employee" award for her meritorious service.

Shri. Ashok S. Jadiyar, Library Attendant, won the Second prize in Chess competition at ICT.

Ms. Vanita S. Howal, Library Assistant, won the Second prize in the Carrom – Doubles and Basketball competitions respectively at ICT.

COUNSELLING SERVICES 2011-2012

It is mandatory for the first year students to have an interactive session with me, so that they feel comfortable in a new setting, and realize that for the next four years, they have someone they could confide in, and unwind in times of stress.

RITA DOCTOR, COUNSELLOR

An Orientation programme for the new entrants was held in the beginning of the academic year 2011 and addressing these students - some of whom were accompanied by their parents- turned out to be quite fruitful. Nearly 40% came on their own and some parents (whose wards had taken admission in the Hostel) said that they were relieved to know that their children could discuss their personal problems, with somebody on the campus.

The First year Pharma students came for sessions in groups of 10, but the Chem Eng and B.Tech students due to their tight academic schedule could not come for sessions, so whenever it was possible I met them for a few minutes in their respective classes, so that they could get familiar with the concept of a counselor .There were also some fruitful interactive sessions with the M.Pharm and the M.Tech (BPT) students.

As is the practice, once the Hostelites settle down in their new environment, I go to the Hostels and meet the new entrants individually. Their problems are generally connected with adjustment and feeling homesick, but within a couple of months they setle down reasonably well.

This year nearly 225 students came to talk about their personal problems, and of them nearly 60% came for follow-up sessions. Apart from the usual problems of low self confidence, poor self esteem, shyness, not being able to express themselves due to language difficulties, not being able to cope with failures, experiencing frustration and feeling depressed - sometimes for no apparent reasons-and some were also disturbed by adjustment problems with their room partners in the Hostel.

The problems faced by the Postgraduate students are slightly different. Some of them have differences with their Guides which leads to anxiety and frustration. Break-up of relationships, strong one sided attraction towards a member of the opposite sex, almost bordering on obsession, are some of the other problems faced both by the Undergraduates and the Post graduates. The married students come with some serious domestic problems(jealous spouse, intolerant husbands) which affect their work.

It would be in the interest of the students if many more avail themselves of the facility of counseling services provided by the Institute.

AWARDS, SCHOLARSHIPS AND FELLOWSHIPS

(FOR THE YEAR 2011-2012)

AWARDS

Professor R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem.Engg.) 7,500/-
Professor A.W. Patwardhan

Professor R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem.Engg.) 7,500/-
Professor A.B. Pandit

Best Teacher Award (Second Year B. Pharm.)
Professor P.D. Amin

Best Teacher Award (Final Year B. Pharm.)
Professor P.R. Vavia

Best Teacher Award (Second Year B.Tech.)
Professor Anand V. Patwadhan

Best Teacher Award (Final Year B.Tech.)
Dr. V.H. Dalvi

Support Staff who have completed their Doctorate Degrees
Dr. Ravindra Sawant
Dr. Suresh S.Salim

Gunvant Karmachari Puraskar for ICT Employee (Admn.)
Shri Sunil Chandivade

Gunvant Karmachari Puraskar for ICT Employee (Technical)
Shri Amar Mhaskar

Gunvant Karmachari Puraskar for ICT Employee (Class IV)
Shri Shantaram Sigavan

Professor M.M. Sharma Best Library Employee in UDCT 2,000/-
Ms. Vanita S. Howal

Professor M.M. Sharma Best Gardener Employee 2,000/-
Shri Vijay Patil (Head Mali), Shri Ajit Bhuwad, Shri Prakash Name, Shri Bhaskar Mali, Shri Chandrakant Prabhu, Shri Balkrishna Misal, Shri Janardan Pawar, Shri Yeshwant Mase

ICT Golden Jubilee Innovative Ph.D. Thesis Award 1,000/-
Dr. Sathe Mayur Jayant, Ph.D. (Tech.)

Dr. K. H. Gharda Best Thesis Award (Cheque by Dr. Gharda) 1,000/-
Dr. Biradar Prashant Maharuddappa Ph.D. (Tech.)

Ambuja Cement Best Ph.D. (Tech.) Thesis Award 10,000/-
Dr. Mehraj Fatema Z. Mulla, Ph.D. (Tech.)

Ambuja Cement Best Ph.D. (Sci.) Thesis Award 10,000/-
Dr. Devendra Leena, Ph.D. (Sci.)

Professor S.B. Chandalia Best Research student Award for Chem.Engg. 5,000/-
Mr. Bindwal Ankush, Ph.D. (Tech.) } Shared
Mr. Patil Pankaj, Ph.D. (Tech.)

Ambuja Cement Best Master's Thesis Award in Chemical Engg. /Tech. 5,000/-
Shri Kadam Pravin Gopal, M.Tech (Polymers)

O.P. Narula Best M. Chem. Engg. Thesis Award 2,500/-
Shri Chavan Vivek Prakash, M. Chem. Eng.

Golden Jubilee Best ICT Student Award 1,000/-
Ms. Mayee Samidha Dilip, B.Tech (Textiles) } Shared
Ms. Moorthy Aditi, B.Tech (Polymers)

ICT Alumni Association Prize for Best Student from penultimate year (Cheques by UAA Prize)
Ms. Bhinderwala Fatema 2001/-
Mr. Joshi Ravi Kiran 1001/-

Shri Ashvin Desai Prize for Best All-rounder hostelite 2,500/-
Ms. Tantry Chhayarani M., B.Tech. (Pharma.), } Shared
Mr. Indalkar Prashant K. B.Tech. (Foods)

Shri Ashvin Desai Prize for Best All-rounder Day Scholar 1,500/-
Ms. Jayakar Neha R. B.Tech (Foods)

LateDr. (Mrs.) Mahalaxmi Bhagwat Prize for F.Y.B. Chem. Engg. (Sem.II)
Students Highest Marks in 'Engineering Applications of Digital Computers' 1,000/-
Mr. Agarwal Kshitij Sanjay

Professor V. G. Pangarkar Award for Highest Marks in "Separation Processes" at final year B.Chem.Engg. (Sem VII & VIII) 5,000/-
Mr. Gangar Mitesh Laxmichand

Professor R.A. Rajadhyaksha Award for Highest Marks in "Chemical Reaction Engineering" at T.Y. Chem. Engg. 875/-
Mr. Choksi Tej Salil, } Shared
Ms. Shete Meera Hemant

Professor S.B. Pandya Prize for Highest Marks in Home Paper, B.Chem.Engg. 500/-
Mr. Ahuja Vishal Rajkumar

Ambuja Cement Best Home Paper Award 2,500/-
Mr. Ahuja Vishal Rajkumar

Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg. 8,000/-
a) **Mr. Menon Bharat Kumar** } Shared F.Y.B.Chem. (Sem I)
b) **Ms. Moharir Manjiri Arun**
Ms. Sarode Apoorva Dattatraya F.Y.B.Chem. (Sem II)
Mr. Tandon Aman Ramesh, S.Y. B. Chem. (Sem I)
Mr. Tandon Aman Ramesh S.Y. B. Chem. (Sem II)
Ms. Shah Mansi Sanjeev T.Y. B. Chem. (Sem I)

Mr. Kamat Pritish Milind T.Y. B. Chem. (Sem II)
Mr. Chhoga Hanoz Rohinton B.Chem. Eng. (Sem I)
Mr. Gangar Mitesh Laxmichand B.Chem. Eng. (Sem II)

Mrs. Asha Khemani Memorial Award 1st rank holder in each year (Textile) 4,000/-
Mr. Gupta Shashwat Vinod F.Y. B.Tech (Sem II)
Ms. Vyawahare Radhika Dinesh S.Y. B. Tech (Sem IV)
Mr. Gupta Rahul T. Y. B. Tech (Sem VI)
Mr. Vora Chintan Navin B. Tech (Sem VII)

Mrs. Asha Khemani Memorial Best Student Award from B.Tech. and M.Tech.(Textile) 1,000/-
Mr. Avinash K. Second Year M.Tech
Mr. Gupta Rahul Final year B.Tech 1,000/-

Jayant Kanhere Memorial Award 2,000/-
Ms. Khadilkar Aditi Bhushan Final Yr. Dyes

Professor S. Seshadri Prize, Dyestuff Division Highest Marks S.Y.,T.Y. Final Yr. B.Tech 10,000/-
Ms. Mehta Aakruti Ketan S.Y.B.Tech 2,000/-
Mr. Joshi Madhur Satish T.Y. B.Tech 3,000/-
Ms. Khadilkar Aditi Bhushan Final Yr. B.Tech 5,000/-

Mrs. Kamala Krishnan Award for Highest Marks in Pharmaceutical Practicals (allpracticals) 1,000/-
Ms. Banerjee Anamika Aashis, Ms. Malaney Prerna Rajkumar

T.N. Vasudevan Pharmacognosy theory and Practical combined at Final Year Award B. Pharm. Sci. (Pharmaceutial Div.) 2,000/-
Ms. Joshi Apoorva M., Ms. Sheth Chandani

Mrs. Usha M. Joshi/S.M. Joshi Scholarship for final year B.Tech.,1st, 2nd & 3rd rank 5,000/-
Mr. Vora Chintan Navin (Textile)
a. **Mr. Bhaway Sarang Mukund** } Shared (Polymer)
b. **Ms. Rajgarhia Stuti Sudir** (Polymer)
Ms. Simran Kaur (Foods)

Chimanlal Choksi Memorial Prize, Highest marks in each year, Chem.Engg. April-May 2011 4,500/-
Ms. Sarode Apoorva F.Y. C.E.
Mr. TandonAman Ramesh S.Y. C.E.
Ms. Shah Mansi Sanjeev T.Y.C.E.

Chimanlal Choksi Memorial Prize, Second Highest marks in each year, Chem.Engg. 4,500/-
Ms. Moharir Manjiri Arun, F.Y.C.E.
Ms. Irani Seema Hoshany S.Y.C.E.
Ms. Sheter Meera Hemant T.Y.C.E.

Auxichem Silver Jubilee Prize First Rank Textile Penultimate Year (Third Year) Sem VI 750/-
Mr. Gupta Rahul

Shree Mangalam Drugs & Organics Ltd. Endowment for securing highest marks in M.Chem.Engg. (Sem I and II) 2000/-
Mr. Panyaram Srikanth Krisha } Shared Sem I
Ms. Tanksale Rohini Girish
Ms. Tanksale Rohini Girish Sem II

Praharaj Manoj Memorial Award for securing highest marks in M. Tech. (Sem I and II) (Award amount to be given after submission of Thesis) Sem I 1,500/-
Ms. Mane Sharmilee Pratap } Shared Sem I
Mr. Garg Romy Brijlal
Mr. Garg Romy Brijlal Sem II

The Association of Food Scientist and Technologist (I) Bombay Chapter Award First rank in B.Tech. (Foods) April 2011 400/-
Ms. Simran Kaur

Professor P.J. Dubash Memorial – AFST (I) Mumbai Chapter Award to the B.Tech. (Semester V) student from Food and Fermentation Technology Department for securing highest marks in the subject of Food Chemistry. (Nov 2011) 2,000/-
a. **Ms. Sahasrabudhe Shreya Narayan** } Shared
b. **Ms. Samant Shilpa Shailesh**
Mr. Shreeya Ravishankar Shanthini

Manjula Bagmal Parikh Memorial Foundation Prize for standing first in the Final Year B.Chem. Engg. and Final Year B. Pharm. 2,000/- each
Mr. Gangar Mitesh Laxmichand Final Yr. B. Chem.Engg.
Ms. Malaney Prerna Final Yr. B. Pharm.

Professor M.A. Nabar Prize for Students who stand first in Chemistry (Theory & Practicals) in F.Y. and S.Y. Chem. Engg.and F. Y. B.Tech. & S.Y.B. Tech 300/- each
Ms. Jain Deeksha F.Y. Chem. Eng. (Sem I)
Mr. Joshi Anup First Yr. B.Tech. (Sem II)

Dr. P. V. Krishna prize for student who stands first in Final Year B.Tech. (Oils) in the examination held in April 2010 10,000/-
Mr. Nayak Purendu Kumar

Professor S.K. Pradhan Prize in Pharmacy for student standing first in B.Pharm. examination and continues further studies in Pharmacy in India. 2,000/-
Ms. Malaney Prerna Rajkumar

'Contect-2011-12' Awards by Department of Chemistry (cash prizes by Department of Chemistry).
a. **Mr. Gopal Arjun,** } Shared F.Y. B.Chem. Engg.
b. **Mr. Jayaraman Ashish** F.Y. B.Chem.Engg.
Mr. Sampat Spoorva F.Y. B.Chem. Eng.
Mr. Kamat Kartik F.Y. B.Chem. Eng.

Dr. M.V. Nimkar Award for Top Two Rankers of all years of UG and First year of M.Tech for Textiles Department

			1000/-
Mr. Gupta Shashwat Vinod	F.Y. B. Tech (First)		
Ms. Hunoor Anagha Anand	F.Y.B. Tech (Second)		1000/-
Ms. Vyawahare Radhika Dinesh	S.Y.B. Tech (First)		1000/-
Mr. Pradhan Siddesh Avinash	S.Y. B. Tech (Second)		1000/-
Mr. Gupta Rahul	T.Y.B. Tech (First)		1000/-
Ms. Mayee Samidha	T.Y. B. Tech (Second)		1000/-
Mr. Vora Chintan Navin	Final .Y.B. Tech (First)		1000/-
Ms. Banerjee Apurba Probir	Final .Y.B. Tech (Second)		1000/-
Mr. Avinash K.	S.Y. M.Tech.	First	1000/-
Mr. Arora Munish	S.Y. M.Tech	Second	1000/-

Dr. S. R. Purao Endowment Prize

Ms. Joshi Madhur	T.Y. B.Tech	2500/-
Ms. Khadilkar Aditi	Final Y. B.Tech	2500/-
Ms. Pawar Poonam	Ph.D Sci.	2500/-

Dr. B.M. Khadilkar Ex- Student and Friends Endowment Fund for First Y.B. Chem. Engg. Student securing Highest Marks in Organic Chemistry course both Theory & Practical April 2011

		3000/-
Mr. Pratik Krishnan		

Dr. Ram Sabnis Endowment Award for Ph.D. Thesis Dyes

		3,000/-
Dr. Padalkar Vikas	Ph.D. Sci.	

B.Chem.Engg. Merit Prizes (ICT Students' Fund)

First Year

Ms. Sarode Apoorva Dattatraya		2,000/-
Ms. Moharir Manjiri Arun		1,500/-
Ms. Chemburkar Ashwin Madhav		1,000/-

Second Year

Mr. Tandon Aman Ramesh		2,000/-
Ms. Irani Seema Hoshang		1,500/-
Mr. Agarwal Manas Manmohan	Shared	1,000/-
Mr. Sabnis Sanket Ulhas	Shared	

Third year

Ms. Shah Mansi Sanjeev		2,000/-
Ms. Shete Meera Hemant		1,500/-
Mr. Shah Chintan Milan		1,000/-

B. Tech. Merit Prizes (ICT Students' Fund)

First Year

Mr. Joshi Anup Sanjay		Pharma	2,000/-
Ms. Sinha Nairiti Jivankumar	Shared	Polymer	
Ms. V.K. Harini Krishnan	Shared	Pharma	1,500/-
Ms. MisraSaumya Rajeev		Polymer	1,000/-

Second Year

Mr. Nair Chandrasekharan	Polymer	2,000/-
Ms. Joshi Bela Deepak	Pharma	1,500/-
Ms. Pusuluri Anusha	Pharma	1,000/-

Third Year

Ms. Pawar Madhuri Rajendra	Paints	2,000/-
Mr. Arsiwala Ammar	Pharma	1,500/-
Ms. Moorthy Aditi	Polymer	1,000/-

B. Pharm.Merit Prizes (ICT Students' Fund)

First Year

Mr. Gore Manish Ravikiran	2,000/-
Ms. Fangari Shiban Navid	1,500/-
Ms. Hegdekar Nivedita Uday	1,000/-

Second Year

Ms. Mestry Snehal	2,000/-
Ms. Binderwala Fatema	1,500/-
Mr. Shah Aakash	1,000/-

Third Year

Mr. Hussain Suleman	2,000/-
Ms. Gala Urvi Hasmukhlal	1,500/-
Ms. Nagada Charmi	1,000/-

NarotamSeksaria Foundation Certificate of Merit Final Year B.Tech Textile

Rahul Gupta	50,000/-

SCHOLARSHIPS

Vishwanath Dore Scholarship
Mr. Virendra Pawar

Arvind Memorial Scholarship
Mr. Bhushan Ghadage

Engineers India Limited Scholarships for SC/ST Undergraduate Engineering Students 2009-10
Mr. Rakesh Hiraman Tayade
Second Year Chem. Engg.

GENERAL SCHOLARSHIPS

M. S. Patel Trust Merit-cum-Means Scholarship (Min six) (Value of Rs. 5,000/- each.)
- **Mr. Chiranjivi Botre,** Second Year Chem. Engg.
- **Mr. Santosh Sarode,** Final Year B. Tech. (Dyes)
- **Mr. Divyapratap N. Singh,** Final Year B.Tech. (Oils)
- **Mr. Karan T. Chhabra,** Second Year B.Tech. (Polymer)
- **Mr. Tanmay P. Jain,** Second Year B.Tech. (Surface Coating)

Rushmi-Druman Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
- **Mr. Ishan A. Fursule,** Final Year Chem. Engg.

Distinguished Alumini Merit-cum-Means Scholarship (One) (Value of Rs. 1,800/-)
- **Mr. Pramod Jadhao,** Final Year B. Pharm.

Smt. Badamidevi Chiranjilal Murarka Charity Trust Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
- **Mr. Kiran G. Panchagalle,** Final Year Chem. Engg.

Sohrab Mistry Merit-cum-Means Scholarship (Two)(Value of Rs. 5,000/- each.)
- **Mr. Ahmedraza M. Shaikh,** Final Year B.Tech. (Dyes)

Ms. Rachana B. Udatewar, Final Year B. Pharm. Perin & Jal Khan Merit-cum-Means Scholarship (Three) (Value of Rs. 3,600/- each)
- **Ms. Neelam Solanki,** Third Year Chem. Engg.
- **Mr. Prakash Komple,** Final Year B.Tech. (Dyes)
- **Mr. Rajesh V. Prabhu,** Final Year B.Tech. (Polymer)

Smt. Parvathy Sitaram Merit-cum-Means Scholarship (Two) (Rs. 4,500/- each).
- **Mr. Akshat S. Jain,** First Year B. Tech. (Textile)
- **Ms. Sneha Kamble,** Final Year B. Pharm.

Druman M. Trivedi Merit-cum-Means Scholarship (Two)(Value of Rs. 3,600/- each).
- **Mr. Dipak D. Pukale,** Third Year B.Tech. (Oils)
- **Mr. Avdhut M. Pure,** Second Year B.Tech. (Surface Coating)

S.L. Venkiteswaran Merit-cum-Means Scholarship (One) (Value of Rs. 4,500/-)
- **Mr. Bhushan S. Ghadage,** First Year Chem. Engg.

M.C. Chhatrapati Charitable Trust Merit-cum-Means Scholarship (Two) (Value of Rs. 3,600/- each).
- **Mr. Harshal V. Gade,** Second Year B. Tech. (oils)
- **Mr. Ajinkya A. Deshmukh,** Second Year B.Tech. (Surface Coating)

Late Dr.(Mrs.) Mahalaxmi Bhagwat Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
- **Mr. Deepak Sanware,** Final Year B.Tech. (Textile)

Professor A.N. Kothare Scholarship (Three)
- **Mr. Vikas P. Ranvir,** First Year B. Pharm.
- **Mr. Raviraj Y. Patil,** Third Year Chem. Engg.
- **Mr. Manoj K. Palsaniya,** First Year B.Tech. (Textile)

Rukmani and Nagraj Rao Memorial Merit-Cum-Means Scholarship (One)(Value of Rs. 7,000/-)
- **Mr. Shailesh Lahoti,** Third Year Chem. Engg.

Dr. D.D. Haldavnekar Merit-Cum-Means Scholarship (Three) (Value of Rs.1800/- each.)
- **Mr. Amit S. Kamble,** Final Year B. Tech. (Pharma)
- **Ms. Rupali S. Patil,** Final Year B. Tech. (Surface Coating)
- **Ms. Anuradha S. Jangam,** Final Year B.Tech. (Textile)

MIXED – DEPARTMENT OF OILS, FOOD, AND POLYMER

Fine Organic Industries Merit-cum-Means Scholarship (Three) (Rs.7500/-each) amount to be decided each year.
- **Mr. Mahesh Kharat,** Final Year B.Tech. (Foods)
- **Mr. Gaurav Mirlekar,** Final Year B.Tech. (Oils)
- **Mr. Chandrasekharan S. Nair,** Third Year B.Tech. (Polymer)

Kamani Oils Merit-Cum Means Scholarship (two) (Value of Rs. 25,000/-each). (for students from Final Year B.Tech. (Oils) and Final Year B.Tech.(Foods)
- **Mr. Amol A. Latthe,** Final Year B.Tech. (Oils)
- **Ms. Monali B. Patil,** Final Year B. Tech. (Foods)

DEPARTMENT OF CHEMICAL ENGINEERING

An Anonymous Alumnus Merit-cum-Means Scholarship (One) (Value of Rs. 3,500/-)
- **Mr. Raviraj Y. Patil,** Third Year Chem. Engg.

Gogri Brothers Scholarship (Four) (value of Rs. 4,000/- each)
- **Mr. Virendra Pawar,** First Year Chem. Engg.
- **Mr. Guruanth S. Adampure,** Third Year Chem. Engg.
- **Mr. Sharad M. Patil,** Third Year Chem. Engg.

Hemraj Lalji Meishry Scholarship (Two) (Value of Rs. 3,500/- each).
- **Mr. Vikas B. Biradar,** Third Year Chem. Engg.
- **Mr. Gavravkumar L. Raut,** Final Year Chem. Engg.

Dr. Nandkumar Kochar & Raj Kumar Kochar Trust Scholarship (Two) (Value of Rs.1,000/- each). (one from S.Y and one from T.Y. Chem Engg.)

- Mr. Salman O. Khan, Third Year Chem. Engg.
- Mr. Chiranjivi Botre, Second Year Chem. Engg.

Purbhudas Jeevandas Mint Road Wadi Trust Scholarship (Four) (Rs. 3,500/- each).

- Mr. Rakesh Tayade, Third Year Chem. Engg.
- Mr. Abhishek A. Kognole, Final Year Chem. Engg.
- Mr. Virendra Jadhao, Third Year Chem. Engg.
- Mr. Sumit V. Pakhare, Final Year Chem. Engg.

Y. T. Shah Merit-cum-Means Scholarship (One) (Value of Rs. 2,000/-)

- Mr. Kushal P. Kathalkar, Third Year Chem. Engg.

Vaishnomal Malhotra - K. K. Malhotra Merit-cum-Means Scholarships (Two) (Value of Rs. 20,000/- each).

- Mr. Gopal S. Zavar, Third Year Chem. Engg.
- Mr. Datta S. Lahane, Second Year Chem. Engg.

Head Master Muthuswami Merit-cum-Means Scholarship (One) (Value of Rs. 850/-)

- Mr. Bhushan S. Ghadage, First Year Chem. Engg.

Rajendra G. Sardesai Scholarship (One) (Value of Rs. 5,000/-)

- Mr. Salman O. Khan, Third Year Chem. Engg.

B. Chem. Engg Class of 1962 (Two) (Rs. 5,000/- each).

- Mr. Rishit D. Mehta, Third Year Chem. Engg.
- Mr. Vikas S. Gaikwad, Third Year Chem. Engg.

Andanallur Srinivasa Venkatesan & Ranganayaki Scholarship (One) (Rs.3,000/-)

- Mr. Nitesh R. Sonone, Second Year Chem. Engg.

Daisy Navaroze Baria Scholarship (One) (Rs. 2,500/-)

- Mr. Pankaj Kotangle, Third Year Chem. Engg.

Dr. Surendra R. Gupta Scholar (Mukut Sah) (Rs. 60,000/- each)

- Mr. Suchit Dange, Second Year Chem. Engg.
- Mr. Chetan B. Patil, First Year Chem. Engg.

Jitendra Mehta Scholarship (Two) of (Rs. 20,000) (Rs. 10,000/- each) for this year only.

- Mr. Vaibhav Pandere, Final Year Chem. Engg.
- Mr. Gavravkumar L. Raut, Final Year Chem. Engg.

Sarojben and Pratapray Shah Memorial Scholarship (Two) (Value of Rs.75,000/- p.a.) (only for F.Y. Chem. Engg. Students)

- Ms. Mansi S. Shah, Final Year B. Chem.Engg.
- Mr. Rohin T. Jacob, Final Year B. Chem.Engg.
- Mr. Ravi K. Joshi, Third Year B. Chem.Engg.
- Mr. Deepen P. Gala, Third Year B. Chem.Engg.

For the Year 2011

- Ms. Apoorva D. Sarode, Second Year B. Chem.Engg.
- Ms. Sheetal Parakh, Second Year B. Chem.Engg.

DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY

Castrol Merit-cum-Means Scholarship (Two) (Value of Rs. 4,500/- each)

- Mr. Umesh C. Madre, Final Year B.Tech. (Oils)
- Mr. Tarun K. Kataria, Second Year B.Tech. (Oils)

G.M. Alias Abhyankar Merit-cum-Means Scholarship (One) (Rs.4,000/-)

- Mr. Guruprasad Rao, Third Year B.Tech. (Oils)

DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY

Perin & Jal Khan Merit-cum-Means Scholarship (Two)(Value of Rs. 4,000/- each).

- Mr. Kushalkumar R. Mahalle, Final Year B.Tech. (Textile)
- Mr. Ashish Gadhave, Final Year B. Tech. (Textile)

Mr. Dinshah B. Katrak & Mrs. Goolcheher D. Katrak Merit-cum- Means Scholarship (One) (Value of Rs. 4,000/-)

- Mr. Ashish Gadhave, Final Year B.Tech. (Textile)

Late Mrs. Asha Khemani Memorial Scholarship (Two) (Value of Rs. 2,500/- each). One for UG and for PG. (decided by textile Dept.)

- Ms. Rachana Harane, Second Year M.Tech.
- Ms. Mrunmayee Kale, Final Year B.Tech.

DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY

"Professor P.J. Dubash Memorial – AFST (I), Mumbai Chapter Endowment Scholarships" (One) (Value of Rs. 25,000/-) for UG B.Tech. student in FET (Food Engineering and Technology) Department.

- Mr. Prashant K. Indalkar, Final Year B. Tech. (Foods)

DEPARTMENT OF POLYMER AND SURFACE ENGINEERING

Jitendra & Hemant Vakil Merit-cum-Means Scholarship (Two)(Rs. 2,800/- each)

- Mr. Nitin B. Parit, First Year B.Tech. (Polymer)
- Mr. Rajesh V. Prabhu, Final Year B.Tech. (Polymer)

Kumar R. Basu Memorial Merit-cum-Means Scholarship (Two) (Rs. 3,500/- each) (only PPV)

- Mr. Avdhut M. Pure, Second Year B. Tech. (Surface Coating)
- Mr. Ajinkya A. Deshmukh, Second Year B. Tech. (Surface Coating)

Synpol Memorial Scholarship (One) (Rs. 3,500/-)

- Mr. Karan T. Chhabra, Second Year B. Tech. (Polymer)

DEPARTMENT OF DYESTUFF TECHNOLOGY

Colour Chem.Ltd. Merit-cum-Means Scholarship (One)(Value of Rs. 3,600/-)

- No eligible candidate is available

Alumni Association – UDCT Dyestuff Division Golden Jubilee Fund Merit –cum – Means Scholarship (One) (Value of Rs.3,600/-) "A/C 588"

- **Mr. Pritam S. Patil**, Third Year B.Tech. (Dyes)

DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

Dr. Krishna S. Manundhane Merit-Cum-Means Scholarship (Two) Rs.1,800/- each).

- **Ms. Anuradha D. Sakharkar**, Final Year B. Pharm.
- **Mr. Sushant Pawane**, Final Year B. Pharm.

Dr. R.K. Dhote Charitable Trust Merit-Cum-Means Scholarship (One) (Rs. 3,600/-)

- **Mr. Rameshwar V. Jarhad**, Final Year B. Pharm.

GENERAL SCHOLARSHIPS ON YEAR TO YEAR BASIS

Kapoor Charitable Trust Scholarship (20) (out of twenty 10 for B. Pharm. students) (Value of Rs. 12,000/- each) from I, II, III, & IV year B.Tech. (Pharma), B.Tech. (Other Branches), B. Pharm and B.Chem. Engg.

B. PHARM. PHARMACEUTICAL SCIENCES AND TECHNOLOGY

Name	Category	Course	Year
Ms. Saima Naz I. Momin	OBC	B.Tech.	I
Mr. Nitesh S. Jadhav	Open	B.Tech.	II
Mr. Sumit P. Tated	Open	B.Tech.	IV
Mr. Mayank Mandot	Open	B. Pharm	II
Mr. Rahul Sonawane	SC	B. Pharm	I
Ms. Shiban Fangari	Open	B. Pharm	II
Ms. Snehal N. Mestry	OBC	B. Pharm	III
Mr. Suleman Hussain	Open	B. Pharm	IV
Ms. Urvi H. Gala	Open	B. Pharm	IV
Ms. Stefina D'cunha	Open	B. Pharm	IV

B.TECH. OTHER BRANCHES

Name	Category	Course	Year
Mr. Nitin B.Parit	OBC	B.Tech. Polymer	I
Mr. Ramakant H. Yelmate	OBC	B.Tech. Textile	III
Mr. Swapnil Vispute	OBC	B.Tech. Foods	III
Mr. Guruprasad Rao	Open	B.Tech. Oils	III
Mr. Arun E. Pagare	OBC	B.Tech. Surface coating	II
Mr. Rohit R. Khare	SC	B.Tech. Textiles	IV
Mr. Mithun S. Nigade	Open	B.Tech. Pharma	IV

B.CHEM. ENGG.

Name	Category	Course	Year
Mr. Aman Dhuwe	OBC	Chem. Engg.	III
Mr. Vikas S. Gaikwad	SC	Chem. Engg.	III
Mr. Dadasaheb Patil	NT 2	Chem. Engg.	III

Mr. Rajen Mariwala Merit-Cum-Means Scholarship (One) (Value of Rs. 10,000/-)

- **Mr. Shrikant U. Nimbalkar**, Third Year Chem.Engg.

Ambuja Cement Merit-Cum-Means scholarship (Fifteen) (Rs. 10,000/- each).

- **Mr. Aman Dhuwe**, Third Year Chem. Engg.
- **Mr. Nitesh R. Sonone**, Second Year Chem. Engg.
- **Mr. Shrikrushna P. Thakare**, Final Year Chem. Engg.
- **Mr. Pankaj Kotangle**, Third Year Chem. Engg.
- **Mr. Kushal Khatalkar**, Third Year Chem. Engg.
- **Mr. Rahul S. Darvesh**, Third Year Chem. Engg.
- **Mr. Rahul R. Mandre**, Second Year B.Tech. (Foods)
- **Mr. Umesh C. Madre**, Final Year B.Tech. (Oils)
- **Mr. Tarun K. Kataria**, Second Year B. Tech. (Oils)
- **Ms. Vinamrata P. Gandhi**, Second Year B.Tech. (Textile)
- **Mr. Suresh Marnoor**, Final Year B. Pharm.
- **Mr. Nishant M. Karadkhelkar**, Final Year B. Pharm.
- **Mr. Saiprasad G. Yangod**, Second Year B. Pharm.

Sandra Shroff Merit-Cum-Means Scholarship (Ten) (Value of Rs.10,000/- each).

- **Mr. Tushar N. Chaudhari**, Third Year B.Tech. (Dyes)
- **Mr. Pritam S. Patil**, Third Year B. Tech. (Dyes)
- **Ms. Bhagyashri Giri**, Final Year B. Tech. (Foods)
- **Ms. Nikita A. Aware**, First Year B. Tech. (Pharma)
- **Mr. Sandesh O. Pasari**, Second Year B. Tech. (Polymer)
- **Mr. Ajinkya Dorage**, First Year B. Tech. (Polymer)
- **Mr. Kalpesh S. Borkar**, First Year B. Tech. (Surface Coating)
- **Mr. Uddhav Pulekar**, First Year B. Tech. (Surface Coating)
- **Mr. Kushalkumar R. Mahalle**, Final Year B.Tech. (Textile)
- **Ms. Bhagyashree N. Dahifale**, Third Year B. Tech. (Textile)

"Dr. Purushottam Janardan Kangle Merit-cum-means Scholarship" for TWO students from B.Tech. (Textile) and B.Tech. (Dyesstuff) (Rs. 3000/- each)

- **Mr. Ahmedraza M. Shaikh**, Final Year B.Tech. (Dyes)
- **Mr. Prakash Komple**, Final Year B.Tech. (Dyes)

SCHOLARSHIPS AWARDED DIRECTLY BY THE OUTSIDE TRUST

Narotam Sekhsaria Foundation Scholarships

Merit-cum-Means Scholarship (Value of Rs. 30,000/-) for UG students

- **Mr. Ravi K. Joshi**, Third Year Chem. Engg.
- **Ms. Sheetal K. Parakh**, Second Year Chem. Engg.
- **Mr. Chandrasekharan S. Nair**, Third Year B.Tech. (Polymer)

- **Mr. Gaurav Mirlekar,** Final Year B.Tech. (Oils)
- **Ms. Mansi S. Shah,** Final Year Chem. Engg.
- **Mr. Chetan B. Patil,** First Year Chem. Engg.
- **Ms. Apoorva Sarode,** Second Year Chem. Engg.

One Excellence Award **(Value of Rs. 1,00,000/-) & Two Certificates of Merit (Value of Rs. 50,000/-) each are offered to outstanding students from among the final year students of the engineering.**

- **Mr. Rahul Gupta,** Final Year B. Tech. (Textile)

Ratan Tata Trust Scholarship **for meritorious students from II, III, & final year B.Tech. and B.Chem. Engg. (Value decided by trust)**

- **Mr. Gupta Rahul,** Fourth Year B. Tech. (Textile) Rs. 10,500/-
- **Ms. Vrushali D. Bhagat,** Fourth Year B. Tech.(Paints) Rs. 10,500/-
- **Mr. Ammar Arsiwala,** Fourth Year B. Tech. (Pharma) Rs. 10,500/-
- **Ms. Madhur S. Joshi,** Fourth Year B. Tech. (Dyes) Rs. 6,000/-
- **Ms. Radhika D. Vyawahare,** Third Year B. Tech (Textile) Rs. 6,000/-
- **Ms. Nairiti J. Sinha,** Second Year B. Tech.(Polymer) Rs. 10,500/-
- **Mr. Anup S. Joshi,** Second Year B. Tech.(Pharma) Rs. 10,500/-
- **Ms. Harini Krishnan,** Second Year B. Tech.(Pharma) Rs. 10,500/-
- **Mr. Aniket U. Thosar,** Second Year B. Tech.(Pharma) Rs. 10,500/-
- **Ms. Soumya R. Misra,** Second Year B. Tech. (Polymer) Rs. 10,500/-
- **Mr. Shashwat Gupta,** Second Year B. Tech. (Textile) Rs. 6,000/-
- **Mr. Onkar P. Ghag,** Second Year B. Tech.(Coating) Rs. 6,000/-
- **Ms. Ridhi Jagani,** Fourth Year B. Tech. (Foods) Rs. 10,500/-
- **Ms. Shaila R. Nayak,** Third Year B. Tech(Foods) Rs. 10,500/-
- **Ms. Meera H. Shete,** Fourth Year Chem. Engg. Rs. 10,500/-
- **Mr. Chintan M. Shah,** Fourth Year Chem. Engg. Rs. 10,500/-
- **Mr. Pritish M. Kamat,** Fourth Year Chem. Engg. Rs. 10,500/-
- **Mr. Aman R. Tandon,** Third Year Chem. Engg. Rs. 15,000/-
- **Mr. Manas Agarwal,** Year Chem. Engg. Rs. 15,000/-
- **Ms. Seema H. Irani,** Third Year Chem. Engg. Rs. 15,000/-
- **Mr. Sushant S. Garud,** Second Year Chem. Engg. Rs. 10,500/-
- **Mr. Ashwin M. Chemburkar,** Second Year Chem. Engg. Rs. 10,500/-
- **Ms. Manjiri Moharir,** Second Year Chem. Engg. Rs. 6,000/-

Bayer Scholarship **for UG and PG students for UG (Consistent first-class in 12th Std., First & Second Yr. of Graduation) for PG (Consistent first-class in IInd,IIIrd and Final Yr. graduation) It was decided to distribute the total amt. of Rs. 2.5 lakhs to the students Rs. 50,000/- each (Rs. 5,000/- p.m. for 10 months)**

- **Mr. Achyut S. Khire,** Ph.D. (Tech.) (Pharma) Third Year
- **Ms. Ankita Pai,** M.Tech. Pharma Second Year
- **Mr. Sagar Shejwalkar,** M.Tech. (Green Tech.) First Year
- **Mr. Ashitosh R. Babar,** Chem. Engg. Third Year
- **Mr. Amogha Vijayadwhaja,** M.Chem. Engg. First Year

ISCMA MERIT CUM MEANS SCHOLARSHIP

Dyes – **1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)**

- **Mr. Tushar Chaudhari,** Third Year B.Tech. (Dyes)
- **Mr. Santosh Sarode,** Final Year B. Tech. (Dyes)

Oils – **1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)**

- **Mr. Harshal V. Gade,** Second Year B. Tech. (Oils)
- **Mr. Dipak D. Pukale,** Third Year B. Tech. (Oils)
- **Mr. Divyapratap N. Singh,** Final Year B. Tech. (Oils)

Textile – **1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)**

- **Mr. Manoj Palsaniya,** First Year B.Tech. (Textile)
- **Ms. Vinamrata P. Gandhi,** Second Year B.Tech. (Textile)
- **Mr. Ramakant H. Yelmatte,** Third Year B. Tech. (Textile)
- **Mr. Deepak Sanware,** Final Year B.Tech. (Textile)

Surface coating – **1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)**

- **Mr. Kalpesh Borkar,** First Year B.Tech. (Surface Coating)
- **Mr. Tanmay P. Jain,** Second Year B.Tech. (Surface Coating)
- **Ms. Rupali S. Patil,** Final Year B.Tech. (Surface Coating)

Following students have been offered the scholarship for one year only.

- **Mr. Ajinkya Dorage,** First Year B.Tech. (Polymer)
- **Mr. Uddhav Pulekar,** First Year B.Tech. (Surface Coating)
- **Mr. Arun E. Pagare,** Second Year B.Tech. (Surface Coating)
- **Mr. Guruprasad Rao,** Third Year B.Tech. (Oils)

Research Fund 2011-2012

Sr.	Name & Department	Title of the Research Project	Amount (Rs.)
1	Dr. Amit Pratap Department of Oils, Oleochemicals and Surfactants Technology	"Tribological Applications of Vegetable Oils"	70,000/-
2	Dr. V. N. Telvekar Department of Pharmaceutical Sciences and Technology	"Novel methodology for functional group transformation"	40,000/-
3	Dr. Prajakta Dandekar - Jain Department of Pharmaceutical Sciences and Technology	Potential of PLGA-TMC nanoparticles for delivering therapeutic nucleic acid molecules	50,000/-
4	Dr. Ganesh U. Chaturbhuj Department of Pharmaceutical Sciences and Technology	Synthesis of Library of 2-(Substituted Aryl)-3- (Substituted) thiophenes as Bioactive molecules	35,000/-
5	Dr. Ravindra D. Kale Department of Fibres and Textile Processing Technology	Polymeric Dispersants for Pigments	35,000/-
6	Dr. Jyotsna Waghmare Department of Oils, Oleochemicals and Surfactants Technology	"Emulsion fuel technology to save earth"	35,000/-

Travel Grant 2011-12

Sr.	Name of the faculty	Amount recommended in Rs.
1	Professor R. N. Jagtap (Declined)	45,000/-
2	Dr. (Mrs.) Usha Sayed	45,000/-
3	Professor A. B. Pandit	30,000/-
4	Dr. P.D. Vaidya	30,000/-
5	Dr. Anagha S. Sabnis	20,000/-

Fellows appointed during 2011-2012

GENERAL

Professor B.D. Tilak Distinguished Lectureship

Professor S. P. Thyagarajan
Pro-Chancellor of the Sri Ramacahndra University, Chennai

Professor B.D. Tilak Visiting Fellowships (4-6No.)

Dr. Shridhar Gadre
Professor of Physical Chemistry, Department of Chemistry, University of Pune, Pune - 411 007.

Rajendra D. Kokane

Dr. P.G. Rao
Director, CSIR- North Eastern Institute of Science and Technology

Dr. Surendra Kulkarni
Technology Director and Chief Technology Officer, Dow India Ltd.

Dr. Arvind Varma
R. Games Slayter Distinguished Professor and Head School of Chemical Engineering, Purdue University

Golden Jubilee Visiting Fellowships (8-12 No.)

Dr. Pankaj Doshi
Scientist, CE Division, NCL,

Professor Sergei Eremin
Professor, Leader Researcher, Head of Res. Group of Immunoassay, Dept. Chem. Enzymology
Faculty of Chemistry, Moscow

Dr. Guruswamy Kumaraswamy
National Chemical Laboratory, Polymer Science and Engineering

Dr. Ashish V. Orpe
Chemical Engineering Division, National Chemical Laboratory

Dr. Suresh Bhat
Scientist Polymer Chemistry, National Chemical Laboratory

Dr. S.K.Patil
Ex – Scientist BARC

Professor Garry L. Rempel (UGC- CAS Fellow)
Bayer Inc./ NESRC Industrial Research Chair in Advanced Rubber Technology, University of Waterloo

Dr. Anand Prakash
Department of Chemical and Biochemical Enginee-ring, The University of Western Ontario, London

Dr. Balwant S. Joshi Distinguished Visiting Professorship in Chemical Engineering/ Chemical Technology/ Applied Chemistry
Professor Arup Chakraborty
Robert T. Haslam Professor of Chemical Engineering, Professor of Chemistry, Professor of Biological Engineering, Massachusetts Institute of Technology, USA.

Shri. B. S. Rajpurohit Visiting Faculty and Oration Endowment
Professor P. Balaram
Director, Indian Institute of Science, Bangalore

DEPARTMENT OF CHEMICAL ENGINEERING

Dr. G. P. Kane Visiting Professorship in Chemical Engineering
Professor K. Kesava Rao
Professor in Indian Institute of Science

The Dow Professor M.M. Sharma Distinguished Visiting Professorship in Chemical Engineering
Professor Dibakar Bhattacharya
University of Kentucky, College of Chemical Engineering and Materials Engineering

Shri V.V. Mariwala Visiting Professorship in Chemical Engineering
Professor Alirio E. Rodrigues
LSRE - Laboratory of Separation and Reaction Engineering, Associste Laboratory LSRE/LCM, Departamento de Engenharia Química, Faculdade de Engenharia da Universidade do Porto, Rua Dr. Roberto Frias

Shri G.M. (alias Dada) Abhyankar Memorial Distinguished Fellowship in Chemical Engineering
Dr. Amit Biswas
Head, Technology Services & Emerging Technologies, Research Technology Group, Reliance Industries Ltd.

Professor R.A. Rajadhyaksha Memorial Lecture Series
Professor Sujit Banerjee
Georgia Institute of Technology, School of Chemical & Biomolecular Engineering

Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship in Chemical Engineering
Prof Sirshendu De
Department of Chemical Engineering, Indian Institute of Technology, Kharagpur

K. J. Somaiya Visiting Professor of Chemical Engineering Endowment
Dr. KSMS Raghavarao
Scientist 'F', Head, Department of Food Engineering, Central Food Technological Research Institute

CAS Fellow for the year 2011-2012
Professor Shripad T. Revankar
WCU Visiting Professor, DANE, Pohang University of Science and Technology

Professor Arun S. Mujumdar Visiting Fellowship for the year 2011-2012
Dr. Saskamon Devahastin
Department of Food Engineering, King Mongkut's University of Technology Thonburi, Bangkok

DEPARTMENT OF CHEMISTRY

Dai-Ichi Karkaria Ltd. Visiting Fellowship
Dr. Imamichi
M. D., Shimadzu Analytical India Pvt. Ltd.

The Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry
Dr Bipin Alreja
President, NEURITAS ADVISORY

The (Late) Shri. G.D.Gokhale Endowment Lectureship
Dr. Anil Kumar,
FNA, FASc, FNASc, JC Bose National Fellow, Chairman, Physical Chemistry Division, National Chemical Laboratory

Spinco Biotech-Ramnathan Lectureship
Dr Amit Bandopadhyay
General Manager, Analytical Instruments Dept.Blue Star Limited.

DEPARTMENT OF DYESTUFF TECHNOLOGY

Shri K.H. Kabbur Memorial Silver Jubilee Lectureship
Dr. Pramod Kumbhar
Director- Research and Business Development, Asia Pacific SI Group Ltd.

Professor K. Venkatraman Lectureship
Dr. Ashokkumar M. Malte
Consultant to an Agrochemical Company

Pidilite Industries Ltd. Visiting Fellowship
Dr. C. N. Sivaramakrishnan
Founder Trustee: Society of Dyers and Colourist Education Charity,

DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY

Pro. A. Sreenivasan Felicitation Lectureship
Dr. Mrs Kalpagam Polasa
Scientist F, Head of Food and Drug Toxicology Research Centre,
National Institute of Nutrition(ICMR), Hyderabad

Marico Industries Visiting Fellowship
Mrs. Chinmayee Deulgaonkar

ICT- Lupin Visiting Fellowships for Bioprocess Technology
Dr. S. Shivaji (SSL)
Scientist G (Vice Chancellor- grade Scientist), Centre for Cellular and Molecular Biology (CSIR), Hyderabad

Dr. Girish Mahajan (SSL),

DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY

Professor J.G. Kane Memorial Lectureship
Dr. Smita M. Jadhav

Professor J.G. Kane Visiting Professorship in Chemical Technology
Dr. Sitaram Dixit
Independent Consultant for the Home & Personal Care Chemical Industry

DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

Cipla Distinguished Fellowship in Pharmaceutical Science
Dr. Vijay B. Walame
Professor & Head, Department of Organon of Medicine & Homoeopathic Philosophy

Themis Medicare- ICT Diamond Jubilee Distinguished Fellowship in Pharmaceutical Sciences
Dr. P. S. Ramani
Retired Professor and Head: Department of Neuro and Spinal Surgery L.T.M. Medical College and Hospital, Sion, University of Mumbai

Professor (Mrs.) M.R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology
Dr. Rajiv Sarin (PVD)
DMRT MD FRCR (Lond), Director, ACTREC & Professor in Radiation Oncology & In-Charge, Cancer Genetics Unit

Dr. Shobhona Sharma (nee Banerji) (PVD)
Professor, Department/Institute/University: Department of Biological Sciences, Tata Institute of Fundamental Research

"Professor S.K. Pradhan Endowment" in Pharmaceuticals Science & Technology"
Professor S. Durani
Professor of Chemistry, Bio-Organic Laboratory, Department of Chemistry, Indian Institute of Technology Bombay, Powai

"Professor V. M. Kulkarni Endowment Fund"
Dr. Kanjaksha Ghosh
Director, Department of Hemostasis and Thrombosis, National Institute of Immunohaematology

AAIPS- Dr. R. S. Baichwal Pharmaceutical Seminar
Dr. Dhiren Thakker

Dr. Harish Padh
Vice Chancellor, Sardar Patel University

Dr. Sundeep Dugar
President & CEO Sphaera Pharma

DEPARTMENT OF POLYMER ENGINEERING AND TECHNOLOGY & DEPARTMENT OF SURFACE COATING TECHNOLOGY

K.S.S. Raghavan Chemical Weekly Visiting Professorship in Polymer Science & Technology
Dr. Manoranjan Patri
Scientist-G, Naval Materials Research Laboratory

IPI - ICT Diamond Jubilee Visiting Fellowship in Polymer Processing
Dr. Rajeev S. Basargekar

Chemimpex Rastogi-ICT Diamond Jubilee Visiting Fellowship in Surface Coating
Dr. Pradeep Trimbak Gadekar

Synpol - ICT Diamond Jubilee Visiting Fellowship in Science and Technology of Pigments
Dr. Anil P. Shanbhag

Tipco - ICT Diamond Jubilee Visiting Fellowship in Thermosets
Dr. Yogesh P. Saraf

Jayvee Organics & Polymers (P) Ltd., Visiting Fellow in Polymer Additives and Compounding
Dr. Anil B. Sawant

Parmanand F. Parikh Endowment
Dr. Deepak A. Walhekar
Technical Sales Manager – Industrial Coatings, IBPS, Dow Coating Materials, Dow Chemical India

DEPARTMENT OF PHYSICS

Dr. M.S. Patel Trust Visiting Fellowship in Polymer Physics
Dr. E. Sundaresan
Head, Group in Product and application Technology, Reliance Industries Limited

DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY

Professor G.M. Nabar Endowment Lectureship
Mr. Man Mohan
Head, Polyester Sector Manufacturing, Reliance Industries,

L.N. Chemicals – ICT Diamond Jubilee Visiting Fellowship
Dr. A. N. Desai
Director, The Bombay Textile Research Association

Class of 1966 Visiting Fellowship
Dr. S. Sreenivasan
Former Director, Central Institute for Research on Cotton, Technology (CIRCOT)

"Dr. M.V. Nimkar Foundation Endowment Lecture" for the year 2011- 2012
Professor M.L. Gulrajani
Textile Department, Indian Institute of Technology

ICT FESTIVITIES

INSTITUTE OF CHEMICAL TECHNOLOGY

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