

# **PROLOGUE**

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B.Chem. Eng., Ph.D.(Tech.), FTWAS, FNA, FASc, FNASc, FNAE, FRSC (UK), CCh, FIChemE (UK), ChE, FISTE, FMASc, FIChE, FICS Vice-Chancellor and R. T. Mody Distinguished Professor Jagdish Chandra Bose National Fellow (DST-GOI) Adjunct Professor, RMIT University, Australia Adjunct Professor, University of Saskatchewan, Canada

# 1. The ICT Brand

Institute of Chemical Technology, Mumbai (ICT) is a World Class Deemed University having an elite status and Centre of Excellence on par with IITs/IISc/IISERs which was granted by the State Assembly on

October 20, 2012; a unique distinction in technical education in the history of India. ICT's track record of 84 years is phenomenal. ICT is ranked among the best in India having the highest NAAC rank of A<sup>++</sup> with CGPA of 3.77/4.00. It was declared at Category I institute by MHRD/UGC Notification (The Gazette of India dated Feb. 12, 2018; University Grants Commission [Categorisation of Universities (Only) for Grant of Graded Autonomy] Regulations, 2018. F. No. 1-8-2017(CPP-II)). On 3rd April, 2018, The National Institutional Ranking Framework (NIRF) of MHRD placed ICT at No. 10 in Engineering, No. 4 in Pharmacy, No. 19 among Universities and No. 30 among all. In 2016 NIRF ICT was placed at No. 2 among Universities; the only state funded institute being recognized among all top 25 universities. The Web of Science, an international agency, showed in September 2016 that based on the normalized citation index, ICT was ranked number one, ahead of IISc and IITs, and central universities. In QS BRICS 2018 ranking, ICT secured 118th rank among all with 100/100 marks for research and innovation, along with IISc Bangalore and IIT-Delhi. Once again in the Scopus Survey April 2018, ICT is found to be the top most using the Weighted Average Citation Impact in the country among all universities and IITs.



# 2. Genesis, Growth and Glamour

Having been established as the University Department of Chemical Technology (popularly called UDCT during yesteryears) by the University of Bombay (now Mumbai), on October 1, 1933 by the desire of government, industry and philanthropists, the Institute of Chemical Technology (ICT) Mumbai has made India proud by having on its roll several publicly known distinguished alumni, be they industrialists, bureaucrats, academicians, social workers, freedom fighters, who have come from all strata of society- the rich, the poor, the marginal, the socially disadvantaged and the underprivileged, from across the country. To its credit, ICT has so far produced 19 Padma awardees: 3 Padma Vibhushan, 8 Padma Bhushan and 8 Padmashri; a few billionaire industrialists among 500+ first generation entrepreneurs, topmost science and engineering bureaucrats, and brilliant academicians who have served the nation in various policy making committees and won many international honours and prestigious fellowships. Some of them are well known to the masses – Shri Mukesh D. Ambani, CMD, Reliance Industires, Padma Vibhushan Dr .

R.A. Mashelkar (former DG, CSIR), Padma Vibhushan Prof M.M. Sharma (former Director, UDCT/ICT), Padma Vibhushan Dr. Homi Sethna (former Chairman, AEC), Padmashri Dr. K.H. Gharda (CMD, Gharda Chemicals), Padma Bhushan Dr. K. Anji Reddy (Founder CMD, Dr. Reddy's Laboratory, Hyderabad), Padma Bushan Dr. A.V. Ramarao (former Director, CSIR-IICT Hyderabad and Chairman, AVRA Lab), Padma Bhushan Professor J.B. Joshi, (former Director, ICT), Shri Madhukar Parekh (CMD, Pidilite Industries), Shri Narotam Sekhsaria (Founder CMD, Gujarat Ambuja Cement), Shri Chandrakant Gogri (CMD, Aarti Group) among many others. ICT has produced 6 CSIR directors and 1 Director General, and 1 Chairman, Atomic Energy Commission, and several bureaucrats and freedom fighters including Union Minister for Commerce Shri Manubhai Shah, a freedom fighter, in Pandit Nehru's cabinet.

The current Chancellor Dr. Raghunath A. Mashelkar (Padma Vibhushan, 2014) and Vice Chancellor Professor Ganapati D. Yadav (Padmashri, 2016) are world renowned Chemical Engineering scientists, technologists and academicians having been decorated with numerous fellowships and honours across the globe.

ICT stands No. 1 in India, 4 globally in publications in Chemical Engineering and allied Technologies with 9 UG, 18 PG, 29 Ph D programs, and 1 Post-graduate Diploma in Chemical Technology Management for entrepreneurship development, having 700 Ph. D., 450 Masters and 1100 students. ICT supports 360 UG Scholarship (Rs 25,000 to 1.00 Lakh) and 100+ UG Summer Researcher Fellows. During last 10 years ICT has filed 406 patents of which 155 have been granted; including technology development and transfer to convert agricultural waste to 2G bioethanol with BPCL and HPCL, municipal solid waste to bio-oil and CNG with industrial partners. DBT is a partner in this section 8 company. Several technologies have been transferred to industry in chemicals, petrochemicals, foods, polymers and pharmaceutical sectors, as well as waste management under Swacch Bharat Mission.

#### 3. Recognition by Central and State Governments

ICT's standing and contribution to nation building has been recognised since beginning by the Union Govt. from time to time including visits by the First Prime Minister Pt. Jawaharlal Nehru and Chief Minister, Maharashtra Shri Y.B. Chavan (1959), Shri Prithviraj Chavan, MoS PMO and MoS for Science, Technology and Earth Sciences (May 15, 2010) and Chief Minister (March 7, 2012), Shri Srikant Jena, Minister for Chemicals and Fertilisers (May 11, 2011), Shri Pranab Mukherjee, President of India (Dec 27, 2013), Dr. Harsh Vardhan, Union Minister for S and T, Earth Sciences (June 23, 2015), Shri Devendra Fadanvis, Chief Minister, Maharshatra (March 2016), Shri Suresh Prabhu, Railway Minister (Oct 2016), Shri Ch. M. Vidyasagar Rao, Governor Maharashtra (Feb. 2017), and Shri Dharmendra Pradhan, (Oct 7, 2017). All of them have witnessed how a small State funded institute, a Deemed University at that, has carved a place for itself among leading institutions of national importance.

#### 4. Three Campuses of ICT Mumbai

ICT has opened two additional campuses this year, namely, ICT Mumbai IndianOil Odisha Campus at Bhubaneswar and ICT Mumbai Marathwada Campus, Jalna which offer innovative programmes. The genesis of these two off-centres is delineated below.

#### 5. ICT Mumbai IndianOil Odisha Campus (ICTM-IOC) Bhubaneswar

On March 18, 2018 marked a unique milestone in the chequered history of 84 years of the Institute of Chemical Technology (ICT), Mumbai which crossed for the first time the confines the State of Maharashtra and entered the beautiful and benevolent State of Odisha. ICT is indeed fortunate that the launching of the Institute of Chemical Technology, Mumbai IndianOil Odisha Campus (ICTMumbai-IOC), Bhubaneswar was done at the hands of Hon'ble Shri Ram Nath Kovind, the President of India in the august presence of Hon'ble Shri S.C. Jamir, Governor of Odisha; Hon'ble Shri Dharmendra Pradhan, Union Minister for Petroleum and Natural Gas, Skill Development and Entrepreneurship, and a galaxy

of bureaucrats, distinguished academics and citizens, stalwarts from industry and well-wishers from across the country. It was a fortuitous coincidence that the ceremony was held on the premises of the Indian Institute of Technology, Bhubaneswar immediately after its 6th Annual Convocation. One Brand welcoming another Brand; such occasions are rare and distinct! March 18, 2018 was a special day in Maharashtra. It was Gudhi Padwa, Chaitra Prathama, beginning of the New Year. Thus, ICT is having a new Foundation Day of ICTMumbai-IOC.



The idea of having ICT campus in Bhubaneswar was conceived in 2016 and a few meetings were held with Odisha Govt. officials for allocation of land and funds since ICT is a State Govt. owned institute but being a deemed university can go beyond the boundaries of the State.

The initial investment for establishing the first phase in temporary campus is around Rs 100 Crore. ICT has applied to the State Govt. for 100 acres of land for setting up full-fledged campus with an approximate investment of Rs 500 Crore for establishing world class institute with latest facilities and equipment. The construction of this new campus will be started as soon as the land is allocated. IOC is committed to assist ICT in this regard. Number of students to be trained in this institute after setting up will be around 2000 students including graduates, M .Tech.s and Ph. D.s. Highly accomplished faculty will be recruited including superannuated scientists and engineers from industry.

The manpower being trained in this institute will cater to chemical, energy, materials and bio-tech industries including sectors of petrochemical, textile, pharmaceutical, food & food processing industries, etc. for biological, material and energy industries in Eastern Region. The first academic session of the maiden programme of the IOC-ICT campus is staring from this academic session 2018-19.

#### 6. ICT Mumbai Marathwada Campus Jalna

May 4, 2018 was a monumental day in the history of ICT Mumbai since its second campus outside Mumbai was established officially in the presence of a galaxy of dignitaries, industrialists, faculty, alumni, students, support staff and well wishers. The Foundation Stone was laid at the hands of the Chief Minister Shri Devendra Fadnavis, Shri Raosaheb Danve, M.P. and President, Maharashtra BJP, Shri Babanrao Lonikar, Gaurdian Minister and Shri Arjun Khotkar, Minister of State among many others. The UDCT

Alumni Association and Chamber of Marathwada Industries and Agriculture (CMIA) assisted us in this endeavour. This day would not have been possible but for the initial suggestion by Hon'ble Chief Minister of Maharashtra, Shri Devendra Fadnavis, who was the Chief Guest for the 5<sup>th</sup> Convocation of ICT in March 2016. During his speech the Vice Chancellor Professor G.D. Yadav requested him to allot land for ICT's expansion near Mumbai, the CM asked him to explore the possibilities of having it in Marathwada region. The ball was set in and immediately after inspection of land near Aurangabad, followed by meetings with CMIA and UDCT Alumni Association Aurangabad Chapter, a proposal was made to the Government for establishment of Marathwada Centre. It was discussed and accepted by the Maharashtra Cabinet on 4<sup>th</sup> October, 2016 in the meeting held in Aurangabad. Thereafter, the Higher and Technical Education Department swung into action, and land of 203 was allotted at Siraswadi near Jalna. A very meticulous follow up was done to get the budget of Rs. 397 Crore (with 121 faculty and 160 support staff) sanctioned by the Cabinet in its meeting held on 24<sup>th</sup> April 2018.



# 7. ICT: Culture, Creativity and Culture

- No. 1 in India, 4 globally in publications in Ch E.
- 19 Padma awardees: 3 Padma Vibhushan, 8 Padma Bhushan, 8 Padmashri
- 9 UG, 18 PG, 29 Ph D programs, 1 PGDCTM, 1CCCSRM
- 699 Ph D Students
- 450 Masters
- 1100 UG students
- 360 UG Scholarship
- 140 Ph Ds awarded during 7th Convocation on 23rd Feb. 2018
- 100+ UG Summer Researcher Fellows
- Scholarships on basis of merit-cum means basis: Rs 10,000, 25,000, 45000, 70,000 to 1,00, 000 per

student

- 10.27 Ph D per faculty
- Highest citation per faculty
- Annual citations per year more than 10,000
- 4 Fellows of INSA, NASI, IASc, INAE, 4 Fellows of TWAS, 4 JC Bose Fellows
- 23 Endowment Chairs; 15 UGCFR, 8 INSPIRE, 2 Ramanujam, 2 Ramalingaswami fellows
- 49 Endowment Visiting Fellowships
- 11 endowments for library
- India's five Ph Ds in E & T from ICT in 1941-42
- 468 papers: 2016-17
- 406 Patents filed in last 10 years
- 104 Projects including multinational
- Publications/faculty highest
- More than 500 first generation entrepreneurs
- 2 Chemical Engineering alumni FRS, London
- 100 % Tax benefit under Section 80G and 125% under 35(I) (II) 3 C, 3E, programmes under Corporate Social Responsibility.

#### 7. ICT Connectivity with Industry

The role of industry in promoting education and research at ICT has its roots in its foundation. Leading magnates from textile and chemical industry and philanthropists donated funds to establish professor's positions and laboratories right from beginning and research started from the inception keeping faculty engaged in development of industry. It is matter of pride that the very first position created through endowment is R.T. Mody Distinguished Professor which the current Vice Chancellor occupies. Faculty used to offer free consultation to industry for its growth and many new industries were started by ICT graduates.

ICT has been closely working with industry ever since and government in the interest of the nation and currently have active MOUs with many national and international renowned universities in USA, Canada, UK, Germany, France, Australia, Finland, Spain, and foreign multi-national companies such as Mitsubishi, Huntsman, Unilever, Biorad, Coka Cola, Pepsico, Reliance, etc. Bestowed with numerous awards and accolades, ICT has created a niche for translational research and technology development and transfer. ICT is not only a Chemical Engineering and Chemical Technology institute, dealing with all sub-sectors, but also deals with Biological Sciences and Engineering, Materials and Energy Engineering.

#### 8. Why ICT is in Odisha?

India's economy is mainly agriculture based which is in transition towards industry based economy and

the ultimate aim of the Indian economy is to become Knowledge Based Economy (KEB). The economy of Odisha is one of the fastest growing economies amongst various States in India. According to current economic survey, Odisha's gross state domestic product (GSDP) is expected to grow at around 8.5% during current fiscal year. Education is the key enabler of economy of any State; in particular, higher technical education along with related research and innovation. In order to develop any State as preferred destination for industrial services, R&D, it is necessary to invest in training high-quality manpower and develop indigenous technology. This shall enable the State to seize the emerging opportunity and ensure a rate of satisfactory growth.

The primary industries in Odisha are manufacturing; mining & quarrying; electricity, gas and water supply & construction. The industrial sector's contribution to the state's GSDP by almost 35%. Most of Odisha's industries are mineral-based. Odisha has 25% of India's iron reserves. It has 10% of India's production capacity in steel. Odisha is the top aluminium producing State in India. Two of the largest aluminium plants in India are located in the state. Odisha is the first State in India to reform its power sector and become surplus power generating state.

Similar to Maharashtra in the past, recent years have witnessed large projects in Odisha like Indian Oil's 11th Refinery at Paradip, envisioned as the Energy Gateway to Eastern India, the 15 MMTPA Refinery has been set up at an estimated cost of Rs. 34,555 crore. Other mega-projects include large Coal Gasification Plant at Angul, World's Largest Phosphatic Fertilisers Plant at Paradip, Vegetable Oil Plant at Paradip to name a few. Govt. of India's PSUs, RCF and GAIL are embarking a large scale Fertiliser Plant at Talcher using gasification of coal. Based on Petroleum Refinery at Paradip, Govt. of India has also approved setting up a Petroleum, Chemical, Petro-chemical Investment Region (PCPIR) for which Govt. of Odisha has earmarked 250 sq. km of land. Indeed all these sectors are linked to ICT's portfolio and strength. Therefore, there is a need of a World Class Centre of Excellence in Chemical Engineering and Technology in Odisha to catalyse structured growth of petro-chemical, chemical, polymer, textiles and fibres, herbal and pharmaceuticals, pesticide, dyestuff and fine chemicals, perfumers and flavours, rubber chemicals industry in Odisha. All of these SEZ and PCPIR and Innovation hubs in Pharmaceuticals, Govt. of Odisha needs extensive and innovation input from Institute like the ICT, Mumbai.

#### 9. Innovative Programmes at ICTM-IOC Bhubaneswar and Collaboration with IIT-Kharagpur

As a consequence too the MOU between IOC and ICT on 16th November 2017, a proposal was submitted to the IOC Board giving the details of plan to promote several activities including setting up of campus at Bhubaneswar.

1. Integrated M. Tech. after 12th Standard (HSSC) of 5 years duration consisting of 15 trimesters with alternate term in industry, with major in Chemical Engineering and minor in 6 different disciplines. To ensure improved quality and industry relevance in curricula development for integrated M. Tech.

(6 trimesters in industry and 9 in institute) in the field of Chemical Engineering as major branch with minor in Petrochemicals, Textiles, Polymers and Materials, Foods and Pharmaceuticals, and Energy Engineering. The last two trimesters will be for promotion of experimental and design project to promote entrepreneurship and start-up companies.

- 2. Executive M. Tech. (6 trimesters, 2 years, alternate trimester in classroom) for industrial personnel
- 3. Ph. D. programmes in various disciplines.
- 4. Centre of Excellence in Research and Innovation.

All these programmes are new and being introduced in India for the first time. During the industrial internship the student will receive stipend from industry making the education affordable to one and all. The campus will be equipped modern equipment for carrying out high class research and innovation at Centres of Excellence to develop technology and to support Research & Development in industry and Skill Development in Chemical Engineering, Petrochemicals, Textiles, Polymers, Pharmaceuticals, Energy, etc.

IIT Bhubaneswar which was occupying the Extension Centre of IIT Kharagpur temporarily until recently has shifted to its new campus. IIT Kharagpur has thus shown interest in joining hands in the research programmes and the Centre of Excellence in Research and Innovation and to share its premises in Bhubaneswar temporarily.

The initial investment for establishing the first phase in temporary campus is around Rs 100 Crore. ICT has applied to the State Govt. for 100 acres of land for setting up full-fledged campus with an approximate investment of Rs 500 Crore for establishing world class institute with latest facilities and equipment. The construction of this new campus will be started as soon as the land is allocated. IOC is committed to assist ICT in this regard. Number of students to be trained in this institute after setting up will be around 2000 students including graduates, M .Tech.s and Ph. D.s. Highly accomplished faculty will be recruited including superannuated scientists and engineers from renowned institutes and industry.

#### 10. Why ICT is in Marathwada?

The economy of Maharashtra is one of the fastest growing economies amongst various States in India. In order to develop Maharashtra State as preferred destination for industrial services, R&D, it is necessary to invest in training high-quality manpower and develop indigenous technology. This shall enable the State to seize the emerging opportunity and ensure a rate of satisfactory growth.

#### 11. Innovative Programmes at ICT Mumbai Marathwada Campus Jalna

• Integrated M. Tech. after 12th Standard (HSC) of 5 years duration consisting of 15 trimesters with alternate term in industry, with major in Chemical Engineering and minor in 6 different disciplines. To ensure improved quality and industry relevance in curricula development for integrated M. Tech.

(6 trimesters in industry and 9 in institute) in the field of Chemical Engineering as major branch with minor

- (i) Petrochemicals
- (ii) Foods Engineering & Technology,
- (iii) Pharmaceuticals Engineering,
- (iv) Lipid Technology
- (v) Polymers and Materials Engineering & Technology
- (vi) Energy Engineering
- 5. The last two trimesters will be for promotion of experimental and design project to promote entrepreneurship and start-up companies
- 6. Executive M. Tech. (6 trimesters, 2 years, alternate trimester in classroom) for industrial personnel
- 7. Ph. D. programmes in various disciplines
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All these programmes are new and being introduced in India for the first time. During the industrial internship the student will receive stipend from industry making the education affordable to one and all. The campus will be equipped modern equipment for carrying out high class research and innovation at Centres of Excellence to develop technology and to support Research & Development in industry and Skill Development in Chemical Engineering, Petrochemicals, Textiles, Polymers, Pharmaceuticals, Energy, etc.

# 12. Engineering Challenges and Relevance of Courses

If you are admitted to this grand institution, which is strictly based on merit, it is assured that the education you receive will be of the highest order and, in the years to come, will place you at the cutting-edge of science and technology where you will develop products and services that greatly improve the lives of those around you. Do you wonder as to what relevance these courses have vis-a-via 'white collared' engineering programmes and are these courses as rewarding? No virtual world can be created without materials produced by niche and eco-friendly technologies. We all leave in the world of chemicals, molecules, if you may, and products, which are transformed to give quality and longevity to life. In this context, let me direct your attention to the "Grand Challenges", as they are referred to by the US Academy of Engineering, and which include:

- 1. Advancing health informatics
- 2. Engineering better medicines
- 3. Making solar energy more affordable

- 4. Providing access to clean water
- 5. Reverse-engineering the human brain
- 6. Advancing personal learning
- 7. Engineering tools for scientific discovery
- 8. Managing the nitrogen cycle
- 9. Providing clean energy from fusion
- 10. Securing cyberspace
- 11. Preventing nuclear terror
- 12. Enhancing virtual reality
- 13. Developing new methods of carbon sequestration
- 14. Restoring and improving urban infrastructure

All these challenges are uniquely physicochemical in nature and an education in chemical engineering or chemical technology particularly empowers you to tackle these herculean tasks. There is a confluence of chemical sciences and engineering with biological sciences and engineering. The technologies related to producing advanced materials, clean energy generation and storage, medicines, high-end drugs, neutraceuticals, food products, fertilizers, agrochemicals, polymers, surface coating materials, laser dyes, colorants, pigments, adhesives, textiles, fibres, oleochemicals, surfactants, lubricants, water treatment and purification, air pollution abatement, bio-processing, downstream processing and a myriad of related issues involve high degree of science and engineering. How are we going to feed billions of people, remain in harmony with nature, and develop sustainable processes and technology? What will be their energy and material needs? Life expectancy is getting extended. Addressing these challenges requires a multifaceted effort that traverses the fields of chemistry, engineering, biotechnology, information technology and nanotechnology, engineering mathematics, environmental engineering and the curriculum and courses offered at the Institute have judiciously incorporated subjects from all these disciplines. Our courses directly allow being on the forefront of these rewarding careers More importantly our syllabi are vibrant and now all M.Tech. students undergo industrial internship during the third semester as well as they do research for one year to write a thesis. Bachelor's student also undergo 3 months industrial training.

In order to meet demands of industry, and lead research and innovation, ICT has planned 31 Centres of Excellence as given below.

# 13. Planned Centres of Excellence in Different Areas to be Spread on Three Campuses

1. Centre for Continuous Education for Plant Personnel

- 2. Centre for Crystallization, Filtration and Drying
- 3. Centre for Eco-friendly Plastic Processing and Recycling
- 4. Centre for Food Processing and Quality Assurance
- 5. Centre for Green Technology
- 6. Centre for Herbal Technology and Natural Products
- 7. Centre for Interfacial Science and Engineering
- 8. Centre for Metabolic and Genetic Engineering
- 9. Centre for Nano Drug Delivery
- 10. Centre for Process Intensification and Innovation
- 11. Centre for Product Engineering
- 12. Centre for Promotion of Science and Technology
- 13. Centre for Risk and Hazard Management in Process Industries
- 14. Centre for Sustainable Energy Engineering
- 15. Centre for Sustainable Fertilizer Technology
- 16. Centre for Undergraduate Research In Engineering (CURIE)
- 17. Centre for Drug Discovery Engineering
- 18. Centre for Fibres and Textile Engineering
- 19. Centre for Infectious Disease Control and Prevention
- 20. Information Processing Centre
- 21. Centre for Water Research
- 22. Centre of Toxicological Studies
- 23. Entrepreneurship Resource Centre
- 24. Internal Quality Assurance Cell
- 25. Centre for Translational Research
- 26. Technology Transfer Cell
- 27. Technology Incubation Centre
- 28. Centre for Mathematical Sciences
- 29. Centre for Functional fluids and Tribology
- 30. Centre for Home and personal care Products
- 31. Advance Graphene Research Centre

#### 14. Quality of Education and Research:

More importantly, you will be instructed by some of the nation's most eminent scientists and engineers who themselves are at the vanguard of research in these fields, thereby ensuring that the knowledge passed onto you is pertinent, real experience and updated. Teaching without research is barren and our planners thus were visionary in bringing research component in our teaching to solve real problems.



These researcher-cum-teachers are always on their toes and work longer hours to be on the forefront. This invigorating atmosphere is witnessed in my institute. There is no nine-to-five culture; working extended hours is a habit here imbibed by students and teachers alike. Besides, a large number of the ICT faculty acts as consultants/advisors to industry with a strict condition that no institutional material facility is used for these industrial consultations. Research projects investigated in our labs are of both academic sanctity and industrial relevance. So the proverbial 'Practise what you preach' is indeed executed by the faculty; many of them actually earn their salaries through the one-third share of the consultation fees paid to the institute.

The Institute's strong multi-disciplinary research programmes have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. All of them deem that ICT is different; distinctly different; incredibly different! They wonder how a small university department, with poor funding has managed to excel and that too without any public glare or publicity? The magic mantra for our success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, and assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation. Let me assure that once you are admitted to ICT, whichever course or programme, your life will be made. We have history to prove it.

#### 15. Closing Remarks:

I am sure by now you would have realized as to why the ICT is held in high esteem and its uniqueness and heritage among all institutes of higher learning in India. Great institutes are not built overnight. My experience as an academic, researcher, consultant to industry, member of several important professional bodies and government committees, and my interactions with alumni, government officials, faculty from leading institutes in India and abroad, have revealed a trend- that is- quality of education, the brand name of institute and future prospects, far outweigh any other consideration on the minds of students and employers alike, while choosing an institute, than the cost of education. Indian parents sacrifice many things to educate their off-springs in the best of schools and colleges; many times not fully knowing about the institute or course. There is too much of peer pressure. The purpose of my writing this long prologue is thus to communicate with you directly and place statistics and standing of ICT before you, since several of your questions and doubts would not be answered by an impersonal compilation in this handbook.

If you get selected through our admission process, which is transparent and strictly on merit, with all government policies in place, my congratulations and best wishes to you. I hope I have convinced you, to join my institute. The opportunities that lie in store for you during your years with us and once you graduate will truly be enormous. If you are unlucky this time because you fail short of the cut-off criteria, try again for master's and Ph.D. programmes after your graduation. Should your destination be some other place for whatever compelling reasons, let me wish you the very best for all your future endeavours. Remember what I have written in some the beautiful posters in the institute.

The Rich. The Poor. The Marginal. The Privileged. The Underprivileged They studied here. They made it BIG. Do not ask how to do. Do it. Underestimate NOT, who you could be. Think Big. Dream Big. Do not dismiss your dreams. To be without dreams is to be without hope; to be without hope is to be without purpose.

The very best to you; wherever you go.

Professor G.D. Yadav