

Third Annual Convocation, Saturday, 4th March, 2017
Indian Institute of Engineering Science and Technology, Shibpur
Director's Address

Hon'ble Chairman of the Board of Governors, Dr. Koppillil Radhakrishnan, Respected Chief Guest Dr. Lazar Mathew, Recipients of Honorary Degrees, Dr. Arvind Subramaniam, Prof. Erode Subramanian Raja Gopal and Prof. Baldev Raj, Deans and faculty members of the Institute, Members of the Board of Governors and Senate, Recipients of Distinguished Alumnus and Distinguished Teacher awards, Distinguished Guests, Recipients of Degrees, Medals and Prizes, Media Representatives, Ladies and Gentlemen.

Note of Welcome

On behalf of the Indian Institute of Engineering Science and Technology, Shibpur, I extend a very gracious and hearty welcome to all of you on this auspicious occasion of the third annual Convocation of the Institute today.

At the very outset, I would like to congratulate the students of the Institute, who will receive degrees today, for their sincere endeavor and hard work to achieve excellence in academic and also in extra academic pursuits.

We are extremely honored to have with us Dr. Koppillil Radhakrishnan, Chairman of the Board of Governors, who is presiding over this ceremony. An internationally eminent scientist and former Chairman of ISRO and currently the Advisor of the Indian Space Research Organization (ISRO), Dr. K. Radhakrishnan, has been hailed as one of the greatest minds and most successful persons in the world today. Under his excellent leadership, India's first planetary exploration - the Mars Orbiter mission was conceived, planned and executed, with great sophistication of novelty. We are extremely privileged that he has kindly taken up the job of leading this Institute further towards academic excellence. The Institute has been receiving continuous help, guidance and support from him.

It is an honor for me to welcome Dr. Lazar Mathew as the chief guest

of the convocation today. Dr. Lazar Mathew had a brilliant academic record topping the University, both in graduate and postgraduate courses. Dr. Mathew is a specialist in Environmental Physiology & Medicine with a Doctorate (Ph.D.) from Delhi University in the subject. He was instrumental in establishing the High Altitude Medical Research Centre at Leh (12000 ft. high). He is a Fellow of Academy of Biomedical Scientists (FABMS); a Fellow of International Medical Sciences Academy (FIMSA); and also a Fellow of Indian Medical Sciences Academy (FAMS). He was Director of Life Sciences at DRDO Head Quarters (6 Years); Director at the Defence Bio-Engineering and Electro-Medical Laboratory at Bangalore (6 years) and Director of the well-known Institute of Nuclear Medicine and Allied Sciences at Delhi for over 3 years. After retirement from DRDO he joined St. Francis Hospital Ajmer as Director, where he worked for 4 years creating many new facilities including Asha Niketan [Rural AIDS Centre]. He was the Director, Sponsored Research & Director of the School of Biosciences & Technology of VIT University till September 2010. Dr. Mathew has 192 research publications and 6 technical books to his credit. He has received 12 Research Awards including the "Scientist of the Year Award" from Ministry of Defence in 1996. Currently he is the Chairman of Bio MEMS Program of Govt. of India, and Chairman of Bio-Engineering Committee of DST and also Chairman of Expert group on Medical Electronics & Telemedicine of Ministry of Information & Communication Technology. He has travelled abroad several times as head/member of delegations representing our country in various international conferences and meetings. We are extremely delighted to have Dr. Lazar Mathew as our Chief Guest in this convocation.

We extend our heartiest welcome to the distinguished personalities on whom the Institute is privileged to confer the Doctorate Degrees (Honoris Causa) for their outstanding contributions in various fields of human endeavor. We are extremely happy for their personal presence here to receive our tribute.

Prof. Erode Subramanian Raja Gopal graduated with M.A. (Physics), University of Madras, having completed the B.Sc. (Hons.)

course in the St. Joseph's college. He then joined the Department of Physics, Indian Institute of Science (IISc), Bangalore, for research and obtained his M.Sc. by research from the University of Madras (1958) and Ph.D. from the same institute in 1961. He spent three years (1961-1964) of post-doctoral research as a Royal Commission 1851 Exhibition Scholar at the Clarendon Laboratory, University of Oxford, U.K. In 1964 he took up the CSIR Scientist Pool Officer position in the Department of Physics, IISc, Bangalore. He acted as the Dean of the Faculty of Science (1976-1977), Chairman of the Department of Physics (1977-1980) and Chairman, Instrumentation & Services Unit/Regional Instrumentation Center (1983-1989). In September 1991, Prof. Gopal became the Director of the National Physical Laboratory (NPL), New Delhi. He had taken up a CSIR Emeritus Scientist position, first in NPL Delhi and since December 1997 he had rejoined in the Department of Physics, Indian Institute of Science, Bangalore. He has written 2 books, edited 2 more books and has authored about 200 research journal papers. Prof. E.S.R. Gopal has been awarded with the CSIR Bhatnagar Award for Physical Sciences (1978), the Sir C.V. Raman Award of the Acoustical Society of India (1978-1980), the NRDC Inventions Promotions Award (1984), the ASI Dr.S. Bhagavantam Award (1993-94) and the INSA Homi Jehangir Bhabha Medal (1994). Prof. Gopal has been elected as a Fellow of several organizations including the Institute of Physics (U.K.), the Indian National Science Academy and the Indian Cryogenics Council. He has served as the President of a number of bodies like the Indian Cryogenics Council (1986-1988), the Acoustical Society of India (1990-1992), the Indian Society for Mass Spectrometry (1992-1995) and so on. Prof. Gopal has been awarded with D.Sc. (Honoris Causa) by the University of Burdwan (1999).

Prof. Baldev Raj received his Ph.D. from Indian Institute of Science, Bangalore. He has steered and mentored large, multi and cross-disciplinary domains and multi-institutional teams to earn for India an eminent and esteemed position in high technology domain of sustainable clean energy system; sodium cooled fast spectrum reactor with closed fuel cycle. He has more than 1300 publications in leading refereed journals and books. He has co-authored and co-

edited 80 books and special journal volumes. He has 5 Indian Standards and 21 patents to his credit. He is Editor-in-Chief of three series of books: one related to NDE Science & Technology, second related to Metallurgy & Materials and third related to Corrosion Science & Technology. He has been responsible for starting, nurturing and enhancing international collaborations of high merit of relevance and eminence with Germany, United Kingdom, France, Russia, Japan, Singapore, China, South Africa, USA, etc. He is President of Indian National Academy of Engineering, Vice President, Materials Research Society of India, Vice President, Academia NDT International and President-elect, International Institute of Welding. Dr. Raj has been recognized by more than 100 awards and 400 honors in more than 30 countries. Other notable awards and honors include, Prof. Jai Krishna Memorial Award-2008 of Indian National Academy of Engineering, Distinguished Materials Scientist for the year 2009 from Materials Research Society of India etc. Presently he is the Honorary Consul General of Michigan State University. He was the chairman of the board of Governors of IIT Gandhinagar and NIT, Puducherry.

On the recommendation of the Senate of the Institute and on approval by the Board of Governors, the Institute is honored to confer the D.Sc. Degrees (Honoris Causa) on Prof. E.S. Raja Gopal and Prof. Baldev Raj.

Dr. Arvind Subramaniam has served as the Senior Fellow at Peterson Institute for International Economics and the Center for Global Development and as Senior Research Professor at Johns Hopkins University. He was previously Assistant Director in the Research Department of the International Monetary Fund (IMF). He obtained his undergraduate degree from St. Stephens College, Delhi, his MBA from the Indian Institute of Management at Ahmedabad, India, and his M.Phil. and D.Phil. from the University of Oxford, U.K. Previously, he worked at the GATT (1988-1992) during the Uruguay Round of trade negotiations and taught at Harvard University's Kennedy School of Government (1999- 2000). He has written on growth, trade, development, institutions, aid, oil, India, Africa, the

WTO, and intellectual property. He has published widely in academic and other journals, including the American Economic Review (Papers and proceedings), Review of Economics and Statistics and so on. His book, *India's Turn: Understanding the Economic Transformation* was published in 2008 by Oxford University Press. He is currently ranked amongst the top 2 percent of the world's academic economists in terms of citation of research and publications, according to the widely used REPEC rankings. He is the current Chief Economic Adviser to the Government of India, having taken charge of the position on 16th October 2014.

On the recommendation of the Senate and on approval by the Board of Governors, this Institute is honored to confer D.Litt. Degree (Honoris Causa) upon Dr. Arvind Subramanian in this convocation.

This is my great pleasure and privilege to mention that in today's convocation, the Institute will confer the '*Distinguished Alumnus Award*' to five members of our alumni family, who have made remarkable contributions towards the advancement of the frontiers of knowledge through their professional excellence. I am happy to announce that the recipients of this award in this convocation are Prof. Sankar Kumar Som, Dr. Arun Kanti Banerjee, Sri Gautam Chattopadhyay, Smt. Ila Majumder and Sri Shyamal Mitra.

Prof. Sankar Kumar Som obtained his B.E. in Mechanical Engineering from Calcutta University, and M.Tech and Ph.D from Indian Institute of Technology Kharagpur. He joined the same institute as a faculty in Mechanical Engineering Department in 1976. He has guided 16 doctoral students and has published more than 60 research papers in peer reviewed international journals. His publications include invited review papers, chapters in research monographs and papers of sole authorship. He has coauthored a text book "Introduction to Fluid Mechanics and Fluid Machines" published by Tata McGraw-Hill Education, and has authored a text book "Introduction to Heat Transfer" published by PHI learning. In fundamental research, he has made pioneering and significant contributions on Thermodynamic irreversibilities in combustion processes in relation to efficient utilization of energy resources and

Theory of air core formation in swirl spray pressure atomizing nozzles. Prof. Som is Fellow of Indian National Academy of Engineering, National Academy of Sciences, India and the Institution of Engineers, India. Prof. Sankar Kumar Som also served as a Director (officiating) in Indian Institute of Technology, Kharagpur.

Dr. Arun Kanti Banerjee received his bachelor's degree in Mechanical Engineering from Bengal Engineering College, Shibpur under University of Calcutta in 1962 and two Ph.D.s (Mechanical Engineering from Indian Institute of Technology and Engineering Mechanics from University of Florida). Dr. Banerjee specialized in flexible body dynamics, has taught various spacecraft and dynamics courses at two American universities. He served for Northrop Services (4 years), Martin Marietta Aerospace (4 years), Ford Aerospace (1 year) and Lockheed-Martin Advanced Technology Research Center (28 years). Dr. Banerjee developed DYNACON, Lockheed-Martin's multi-flexible-body dynamics and control simulation tool. He also developed algorithms for geometric stiffness effects in elasto-dynamics, Order-N dynamics, command shaping for vibration suppression and tracking control of flexible robots. He has published 36 journal papers and presented papers at two international congresses in theoretical and applied mechanics. Dr. Banerjee was awarded 1990 AIAA (American Institute of Aeronautics & Astronautics) Engineer of the Year Award in Astronautics, for his expertise on efficient Order-N flexible-body dynamics. He was also the associate editor for the Journal of Guidance, Control, and Dynamics and is the Associate Fellow of AIAA.

Prof. Goutam Chattopadhyay is a Senior Research Scientist at the NASA's Jet Propulsion Laboratory, California Institute of Technology, and a Visiting Associate at the Division of Physics, Mathematics, and Astronomy at the California Institute of Technology, Pasadena, USA. He received the B.E. degree in Electronics and Telecommunication Engineering from the Bengal Engineering College under Calcutta University in 1987, the M.S. degree in Electrical Engineering from the University of Virginia, Charlottesville, in 1994, and the Ph.D. degree in Electrical Engineering from the California Institute of Technology (Caltech), Pasadena, in 1999. From 1987 until 1992, he was a Design

Engineer with the Tata Institute of Fundamental Research (TIFR), Pune, India. He has more than 300 publications in international journals and conferences and holds more than fifteen patents. He was the recipient of the Best Undergraduate Student Award from the University of Calcutta in 1987, the Jawaharlal Nehru Fellowship Award from the Government of India in 1992, and the IEEE MTT-S Graduate Fellowship Award in 1997. He was the recipient of the best journal paper award in 2013 by IEEE Transactions on Terahertz Science and Technology, and IETE Prof. S. N. Mitra Memorial Award in 2014. He also received more than 30 NASA technical achievement and new technology invention awards.

Smt. Ila Majumder graduated in 1951 with Mechanical Engineering from erstwhile Bengal Engineering College, Shibpur. She was the first woman engineer in West Bengal and the first woman Mechanical Engineer in India setting an example. Ila Majumdar then did her postgraduate training from a Glasgow-based company, Barr and Stroud. Returning to India after her training, in 1955 she took up a lecturer's post in Delhi Polytechnic. Within a short time she published two books, *Applied Mechanics through worked examples* and *Hydraulics through worked examples*. She joined as a lecturer at the Institute of Jute Technology, and then as the principal of Women's Polytechnic, Kolkata. In the year 1985 she was appointed the CAO in UNESCO sponsored project to setup Mahila Polytechnic in Dhaka, Bangladesh. She successfully accomplished this assignment within a one-and-a-half year contract period. It has been many years since she has retired from her service.

Sri Shyamal Kumar Mitra received his Bachelor's degree in Civil Engineering from Bengal Engineering College in 1967. Then he joined as a graduate engineer with M/s. K. N. Dadina Foundation Engineers, Kolkata and led geotechnical investigation teams in the fields all across India and Nepal. He worked as an Assistant Engineer under Govt. of West Bengal during 1970-1972, and gathered first-hand experience on design and construction of small and medium irrigation projects. He acted as the Head, Engineering of M/s. K. N. Dadina Foundation Engineers, Kolkata during 1972-1989 and led large number of geotechnical investigation and piling projects including laboratory testing and reporting all over the country. He first introduced CSL

testing of piles in India and undertook PIT on piles in eastern India. He is the Life Fellow of Indian geotechnical Society, Member of Institution of Engineers (India) and Indian Road Congress.

In this convocation, we shall also pay tribute to Prof. Sambhunath Biswas, Prof. Mani Mitra, Prof. Partha Sakha Banerjee and Prof. Syamal Kumar De, some of the eminent professors of this Institution through conferment of the '*Distinguished Teacher Award*'. These former faculty members have put in magnificent efforts over decades to produce some outstanding engineers and scientists and have become the very embodiment of perfect teachers amongst generations of students.

Prof. Sambhunath Biswas received his B.Tech. and M.Tech. degree in Radio-physics and Electronics from the University of Calcutta in 1967 and 1968 respectively. In 1972, he received Premchand-Raichand Scholarship (PRS) from the University of Calcutta. He received D.Phil. Degree in Radio-physics and Electronics from the University of Calcutta in 1974. He was also awarded with MOUAT Medal of the University of Calcutta. In 1979, Prof. Biswas proceeded to Federal Republic of Germany (FRG) for carrying out Post-doctoral study on German Academic Exchange Scholarship. He carried out his post-doctoral studies at the University of Aachen. Prof. Biswas joined in the Electronics and Telecommunication Engineering Department of erstwhile B.E. College in the year 1972 and retired from service in 2007. He was the Head of the same department during 1988-89 and 1995-98. He worked as the Dean of the Faculty of Engineering, Technology, Architecture and TRP during 2002-2005. After superannuation, he joined as the Director in S.I.T.M., Lucknow, later as Director (Academic) in Institute of Engineering and Management, Kolkata and now he is acting as the Deputy Director in Heritage Institute of Technology, Kolkata.

Prof. Manindra Mitra passed the Senior Cambridge and I.Sc. Examinations in 1946 and 1948 from St. Edmund's in Shillong securing first positions in both the examinations. He did his M.Sc. degree in Applied Mathematics from the University of Calcutta in 1952 with First class First. He taught in Jadavpur University in the late 50's and the early 60's and completed his Ph.D. He made significant contributions to the

theory of transient waves in half space focusing mainly on finitely distributed surface sources. Although all his work was done in India, they were considered noteworthy by his peers and contemporaries in Cambridge University (Stoneley and Lapwood), Caltech (Miklowitz) and Princeton (Eringen). He was a Professor in the Department of Mathematics in B.E. College, Shibpur for nearly a decade from 1966 to 1975. Eight candidates completed their Ph.D. under his supervision. He retired as Professor and Head of the Department of Mathematics from Presidency College in 1991.

Prof. Partha Sakha Banerjee did his Bachelor's degree in Metallurgical Engineering from erstwhile Regional Engineering College, Durgapur in 1969 and subsequently completed M. Tech. from IIT Kharagpur in 1971. Thereafter he joined erstwhile Hindustan Steel Limited in its Durgapur Plant and then Bokaro Steel Limited in 1972. He had worked in various sections of the steel plants for nine years. In 1982 he joined Bengal Engineering College in the Department of Metallurgy as Lecturer and had been associated with this institute till retirement as Professor in 2007. During his tenure, he was associated with a number of research and consultancy projects from DRDO, Ministry of Defence, AICTE, UGC, SAIL, Tata Steel etc. He had several papers in National and International journals to his credit. He is still associated with the Department of Metallurgical and Materials Engineering as a Visiting professor.

Prof. Syamal Kumar De obtained his Bachelor's degree in Civil Engineering from this institute, the then B.E. College, Shibpur, in 1962, and rejoined as a Teacher-Trainee in Civil Engineering, in 1963. In 1966, he obtained his Master degree, also in Civil Engineering from the same institute. Ever since joining this post in 1966, he continued to render his invaluable service to his Alma Mater in various teaching positions till his superannuation in 2000, except for a brief period of teaching at the Jalpaiguri Govt. Engineering College. Prof. De belongs to an illustrious class of early teachers who took teaching as a mission rather than a profession. In an era when compartmentalization of knowledge within the same engineering discipline was not believed in, Prof. De taught a variety of Civil Engineering subjects ungrudgingly and with lot of command and flair. Besides teaching at both undergraduate and

postgraduate levels, Prof. De supervised a large number of Master's thesis and has a number of publications to his credit. But, perhaps, a still greater contribution to his Alma Mater has been his leadership and untiring efforts in setting up two of the Civil Engineering laboratories, namely, the Computer Laboratory and the Experimental Structural Analysis Laboratory, both of which were topical in those days.

It is a great pleasure to welcome all other distinguished teachers, alumni and guests, learned members of the teaching community and media persons who have joined us on this very special occasion. Finally, I extend a very warm welcome to our dear students who would be receiving degrees and awards.

Glimpses of Academic Pursuits

In the 3rd Annual Convocation of today the degrees and prizes will be awarded to 431 Undergraduate students of 10 courses, 457 postgraduate students and 74 Ph.D. Fellows who have completed their studies and passed the examinations during this period. Institute Medals will be awarded to 35 candidates who have secured highest marks in different disciplines. The President of India Gold Medal will be awarded to Sri Debagnick Ghosh, CST Department who secured 1st position among the undergraduates of all ten engineering disciplines taken together. Some endowment medals will also be awarded to the students who have stood first in their respective disciplines or have secured highest marks in particular subjects.

Doctoral and Post-Doctoral Research Programs

With great emphasis laid on research activities in our Institute, I am extremely happy to report that along with quality teaching, our faculty members are engaged in quality research as well. Overall since the last convocation, there have been 370 publications in peer reviewed journals and 293 in conference proceedings. The doctoral programs are continuing with intense devotion .

Sponsored Research and Consultancy

This year we have witnessed significant growth in the area of sponsored research and industrial projects, which is a mark of progress in

advanced research and innovation by our faculty members. This year so far we have received new sponsored research projects worth Rs. 15 crores which is about 8% more than that we received last year. Some more projects are in the pipeline. Total number of industrial consultancy projects has also doubled this year. Some of the major research projects, received this year are mentioned below.

Department	Title of the Project	Funding Agency
CEGESS	Development of Carrier selective tunneling rear contact on n-type and p-type Silicon Wafers for ultra-low surface recombination velocity and their implementation for lab scale (3'32) high efficiency (>20%) solar cells	DST
Civil	Industrial research on a clean process for delivering arsenic free safe water to affected communities in India	INNOVATE UK and Global Innovation & Technology Alliance (GITA)
CEGESS	Cross-fertilized bio-mimetic structures for advanced light management and unified photon-electron harvesting in ultra-thin-flexible monocrystalline silicon solar cells	DST-SERB (Extra Mural Scheme)
AE&AM	River Bank Erosion: influence of tidal flow and vegetative cover	SERB
IT	Development of a Smart Control System for a Water Distribution Network	DST-Water Technology Initiative (WTI)
SMSE	Development of Fire Retardant Durable Jute Nano-Composites for High-End Structural Applications	Ministry of Textile, Govt. of India
SMSE	Engineered biomimetic cellulose Nano-scaffold for skin and bone replacement	SERB
Physics	Synthesis and characterization of (1) ultra-long carbon nanotubes and resist free fabrication of carbon nanotube field effect transistor (CNTFET) for sensor application and (2) carbon nanotube carpet for thermoelectric application	DST

Mechanical	Development of a unified model to simulate uniaxial and multi-axial LCF and ratcheting for nuclear piping materials	BRNS-DAE
CHST	Bioactivity guided fractionation of phytochemicals from medicinal plants against brain malignancy authenticated by DNA bar coding	AYUSH, Govt. of India
ETC	Efficiency Improvement of Wireless Power Transfer using Meta material Structure Implementation	Visvesvaraya Young Faculty Research Fellowship Scheme - Media Lab Asia
ETC	Development of Graphene derivative and semiconducting oxide nanotubes / nanorods based hybrid Electronic Sensor System for efficient monitoring of quality of fruits	Visvesvaraya Young Faculty Research Fellowship Scheme - Media Lab Asia
Physics	Engineering phases due to spin-orbit coupling in 5d oxides: a first-principles simulation approach	DST
Chemistry	Coreshell semiconductor nanomaterials for the photo catalytic continuous flow treatment of xanthene dyes	DST
SMSE	Exploration on the efficient electrode systems for rechargeable batteries	DST
CEGESS	Bio-interfaces based on chemically engineered Graphene oxide as a novel multifunctional platform for bio-electrochemical systems	DST
SMSE	Nano Fabrication of Smart Skin with Chitin/Chitosan Based Polymer Composite by Electrospinning and 3-D Printing	DST
CEGESS	Synthesis, fabrication and development of grapheme based gas sensors for detection of ammonia (NH ₃), Nitrogen Oxide (NO _x) and Carbon Monoxide (CO)	DST
Civil	Development of the green and sustainable cement composite utilizing Hydrogen-rich water: A green approach to speed up the construction process	SERB
SMSE	Development of nanofiber reinforced plant polymer based durable, fire-retardant bio composites	DST
SMSE	Synthesis of some one or two dimensional carbon nanostructures/related composites and its novel electronic applications by virtue of its amorphousness	SERB

Chemistry	Fluorescent sensing application of membrane-bound near infra-red chemosensors for detection and quantification of hazardous cation and other analytes	DAE-BRNS
Physics	Nonlinear Pulse Dynamics in Dispersion Managed Optical Fibers Including Micro or Nano Dimensions (OFMN)	SERB
CEGESS	Incorporation of DLN in a Solar Cell Structure as a replacement of Silicon Nitride	DST
VLSI	Performance Analysis of alternative 2D channel materials in MOSFET	DST
CHST	Triterpenoid based folic acid conjugates: Synthesis, study of self-assembly properties and their applications in targeted drug delivery	SERB
Chemistry	Development of some novel azodye-rhodamine-based off-on-type fluorescent and colorimetric cell permeable probe highly sensitive and specific for the detection of heavy and transition-metal ions: synthesis, XRD characterization, computational studies and their application in Environmental Samples and living cell imaging	SERB
CHST	Coupling Epithelial Cardinal Gene Expressions with 'Omics' Signatures in Theranostic Biomarker Discovery for Oral Pre-Cancer and Cancer	SERB
Chemistry	Synthesis of low cost, highly efficient colorimetric fluorescent probes for optical detection of environmentally toxic heavy metal cations, anions and important bio-molecules (uric acid) and their real time cell imaging application in human blood cell	SERB
Metallurgy	Influence of solver and Tin on microstructure and texture in Al-Zn-Mg alloys	DST
Mechatronics	National Initiative on Design Innovation, IEST Shibpur	MHRD, Govt. of India (IIT, KGP)
Chemistry	Design and Fabrication of Pt-Free/Low Level Pt Nano Catalysts for Oxygen Reduction Reaction (ORR) in Low Temperature Fuel Cell	CSIR

Infrastructure Development

Roof Top Solar and Biogas Microgrid

1. A unique Microgrid System consisting of 10 KWp of Solar PV, 1 KW of Wind Generator and 15 KVA of Biogas Generator has been established by the Centre of Green Energy and Sensor systems in the IEST Campus this year under the sponsorship of Dept of Power and NES, Govt. of West Bengal. About 1 ton of kitchen wastes and table food wastes from the different hostels and residential quarters in IESTS Campus are utilized as the biomass input to the Biogas digester of 35 cum capacity and the generated gas drives the Biogas generator yielding about 10 KW of electrical power for our campus consumption.
2. Solar Energy Corporation of India (SECI), a Govt. of India Undertaking under Ministry of New and Renewable Energy (MNRE), has been awarded a contract for designing, construction and maintenance of Solar PV Roof Top Systems on the Rooftops of different buildings in IEST Campus. DPR has been prepared for construction of two Roof Top PV Power Plants of capacity of 469 kWp and 339 kWp respectively. The work is under progress and is expected to be completed within this year.

Advancement under TEQIP –II

Our Institute participated in two schemes of the Technical Education Quality Improvement Programme (TEQIP, Phase - II) (a World-Bank Assisted Project under Ministry of Human Resource Development, Govt. of India), namely one meant for *Scaling up of Post Graduate Education & Research* with grant of Rs. 17.50 Crore and one for *Establishing a Centre of Excellence*. The Institute has been granted a sum of Rs. 5.00 (five) Crore to establish a Centre of Excellence (CoE) in the area of Micro Structurally Designed Advanced Materials Development.

With a mandate to enhance post graduate research activity, TEQIP - II actively supports procurement of instruments, software and books. An amount of Rs. 5.94 Crores are released to procure 75 instruments like Handheld GPS, Single Frequency GNSS Receiver for DGPS Survey,

Arbitrary Function Generator, Digital Storage Oscilloscope, FPGA Board with Interface Card for Real Time Simulation, UV-VIS Spectrophotometer etc. An amount of Rs.1.36 Crore was spent to procure 17 software like ERDAS Imagine Advanced EDU Kit (5 user), Geomedia Professional (10 user) etc. and Upgradation of ARCMAP Additional Lab Kit ver 9.1 to 10, ARCMAP Master Lab Kit ver 9.1 to 10, SURPAC & MINEX Software etc. An amount of 1.2 Crore was spent in procuring 1060 numbers of books in the central library. To engage more number of scholars in research work leading to PhD degree, 53 PhD assistances are arranged for different departments and an amount of nearly 1 crores is provided to reimburse the PhD scholarships disbursed from the Institution.

PhD scholars have participated in different conferences within India and abroad. UG and PG students are also encouraged to participate in different conferences within India. Amount of Rs.47 Lakhs was spent for this purpose. The PhD scholars attended presented papers in different prestigious conferences like ASME 2013 International Mechanical Engineering Congress & Exposition, 15th IEEE International Conference on High Performance Computing and Communication (HPCC 2013) and many more. Members of faculty also utilized this fund to present papers in different national and international conferences within India and abroad. An amount of Rs.1.23 Crores was utilized for this purpose.

All together seventy Workshops/Seminars/Conferences and invited lectures have been organized by various departments of our Institute under this scheme.

To promote industry - institute interaction, thirty three interaction programs have been organized. Some of them are on "Looking Ahead to 5G: Building a virtual zero latency gigabit experience", "Continuous Mines - A Mass Production Technology", "Principles of Vibration Control", "Induction Programme for enhancing efficacy in Industrial Project", "Course Curriculum Enrichment in Electrical Engineering" and many more.

Under Management capacity enhancement programme, senior faculties and officers attended various training programmes conducted by premier Management and academic institutes in India. Some of the

training programs are like “National Workshop on Quality Initiatives in Technical & Higher Educational Institutions” organized by Engineering Staff College of India (ESCI), Hyderabad, Training Programme on Management Capacity Enhancement and many more.

TEQIP-II funding supported different reform initiatives like Academic Restructuring, etc. and supported different student's beneficiary programmes like “English for Professional Skill Development”, “Development Programme in Mathematics for Engineering students” etc. TEQIP also supported Students' Annual Technical meet (INSTRUO) to show case their innovative ideas. A state of art computing facility for post-graduate research has been developed through this fund.

I am happy to mention that IEST, Shibpur has been identified as one of the best performing CFI institutes and as a recognition of this and MHRD has selected this institute as mentor institute in TEQIP-III with additional fund allocation of 9 Crores INR.

Centre of Excellence under TEQIP II

The Centre of Excellence for Microstructurally Designed Advanced Materials was established in a space of about 5000 sq ft under the TEQIP II scheme. The centre primarily focuses on multi-disciplinary research, training and development of concepts in computation, design, characterization and application of materials in the areas of advanced sensor materials, affordable bio-implants, crash worthy structural steel, alternative permanent magnet materials and materials refurbishment. Apart from carrying out research in the areas mentioned above, the centre also aims at creating technologies that can be commercially exploited by industries. The broad areas of research in this Centre are

- ❖ Development of Linear Permanent Magnet Synchronous Motor
- ❖ Development of Al based intermetallic reinforced composites through reactive stir casting route
- ❖ Studies on Magnesium alloys as a biodegradable biomedical orthopedic implant
- ❖ Structure-Property correlation of Age-hardenable Al-alloys
- ❖ Preparation of bio-ceramics mainly hydroxyapatite (HAp) from biogenic resources viz., seashells (calm shells), fish

bones and fish scales

- ❖ Development of Al₂O₃/Al Nanocomposite by Ultrasonic Cavitation assisted Casting
- ❖ Development of Ultra high strength steel
- ❖ Development of high energy density MnBi based rare earth free permanent magnet
- ❖ Development of hybrid sensors for spoilage and ripeness detection of fruit and vegetables

State of the art instrumental facilities such as multipurpose tribometer, 3D-optical profiler, atomic force microscope, advanced Hall Effect measurement facilities have been installed and are now being used for material characterization. Faculty members and research scholars associated with the centre have published fourteen research papers in SCI journals, filed four patents, organized three international conferences on *“Advanced Materials & Energy Technology”*, *“Challenges in Product Development of Medical Implants and Device”*, *“Functional Nano-materials (ICFNM – 2016)”*. In addition, a 10-day workshop on *“Materials Characterization: Principals and Practices” (MCP-2016)* and one *Colloquium on Nuclear Materials (CNM 2016)*, were organized in August 2016. One of the research scholars received the best student research paper award in the International conference on materials science and manufacturing held on January 2016 at Singapore.

Accolades for our Institute Faculty

Several faculty members of the Institute have won recognition for their academic performance. To name some of them:

In the Department of Architecture, Town and Regional Planning,

- ❖ Prof. Keya Mitra nominated as Member of Board of Undergraduate Education in Architecture and Planning Council of Architecture New Delhi.
- ❖ Prof. Keya Mitra nominated as Member of National Advisory Committee of the National Information Centre of Earthquake Engineering (NICEE) at IIT Kanpur.
- ❖ Prof. Parthasarathi Mukhopadhyay has been elected as an Alternate Member of the Panel for Timber and Bamboo (CED

46:P6) under the National Building Code Sectional Committee, CED 46 since November 2016.

In the Department of Chemistry,

- ❖ Dr. A. Kar awarded with “INSPIRE Faculty Award” in 2016 by the Department of Science and Technology (DST), Government of India, during 2016-2021.
- ❖ *Dr. A. Kar* awarded “The follow-on support of Newton International Fellowship” in 2016 by the Royal Society, London, United Kingdom..
- ❖ Dr. C. Bhattacharya awarded Young Faculty Research Award, 2016 from GAABESU.

In the Department of Civil Engineering,

- ❖ The UKIERI Project under Prof. Kalyan Kumar Bhar on “Assessment of effects of arsenic pollution on health in rural Bengal and development and implementation of sustainable technology solution” has been shortlisted by UKIERI as one of the most successful projects and selected for case study documentation.
- ❖ Dr. Subrata Chakraborty acted as Section Editor (Civil Engineering) of INAE Letter, An Official Journal of the Indian National Academy of Engineering, Published by Springer
- ❖ Dr. Chaitali Ray was Awarded 'E P Nicholaidis' best paper award from Institute of Engineers (India) in 2016
- ❖ Dr. Tapas Kumar Roy and Sri Raja Mistry received Best conference paper award 2016 in the International Conference on Applied System Innovation Organized by 'IEEE and Taiwanese Institute of Knowledge Innovation'.
- ❖ Dr Pritam Saha have won the Best paper presenter award on the National conference – Engineering Problems and Application of Mathematics (EPAM)-2016 at National Institute of Technology Agartala

Department of Electrical Engineering,

- ❖ Prof. C. K. Chanda was awarded the Best paper presentation

award in Barcelona Spain on Dec, 2016.

In the Department of Electronics and Telecommunication Engineering,

- ❖ Dr. Partha Bhattacharyya was awarded and Honored with,
 - Visvesvaraya Young Faculty Research Fellowship 2016
 - Young Scientist Award -2016 by Institute for Smart Structures and Systems (ISSS)
 - Materials Research Society of India (MRSI) Medal 2017.
- ❖ Supervisor of the thesis awarded as ISSS Postgraduate Student Award (Best PhD thesis) 2016
- ❖ Dr. Debasis Mitra Received Visvesvaraya Young Faculty research fellowship award, under MeitY, Govt. of India, May 2016.
- ❖ Dr. Ankita Pramanik received the following accolades,
 - Best Session paper award in IEEE EDS sponsored 3rd International Conference on Microelectronic Circuit and System (MICRO) 2016
 - Best paper award in 1ST International Conference of Advanced Computing (ICAC) 2016 ORGANIZED by MAKAUT WB
 - Best paper award 5th International Conference on 'Computing Communication and Sensor Network' (CCSN) 2016

In the Department of Information and Technology,

- ❖ Dr. Malay Bhattacharyya
 - Sir Visvesvaraya Young Faculty Research Fellow in 2015-16.
- ❖ Dr. Prasun Ghosal
 - Best Paper Award in 2nd IEEE International Symposium on Nanoelectronic and Information Systems (IEEE iNIS 2016) - 2016 for the following paper.
 - Pratima Chatterjee, Mayukh Sarkar and Prasun Ghosal, In proceedings of IEEE International Conference on Nanoelectronic and Information Systems (iNIS 2016), December 19-21, 2016, Gwalior, India.
- ❖ Dr. Surajit Roy

- Best doctoral thesis award in 25th Asian Test Symposium (ATS), 2016.
- ❖ Dr. Santi Prasad Maity
 - Best Paper award in 3rd International Conference on Microelectronics, Circuits and Systems (MICRO-2016), 9-10th July, 2016, Kolkata, India.
 - Best presentation for the paper In 1st Int. Conf. on Advanced Computing (ICAC-2016), 26-27th October, 2016.
 - Best Paper In 3rd International Conference on Microelectronics, Circuits and Systems (MICRO-2016)

In the Department of Mechanical Engineering,

- ❖ One Patent by Dr. Debasis Datta on the title “A Permanent Split Type Mandrel for use in Repeated Manufacturing of Helically Wound Composite Pipes”.

In the Department of Metallurgy and Materials Engineering,

- ❖ Prof. Amitava Basu Mallick has been awarded prestigious INSA Teacher Award 2016.
- ❖ Prof. Swarup Kr. Ghosh has been awarded Elsevier Recognised Reviewer for Materials Science & Engineering A in March, 2016.

In the Dr. M.N. Dastur School of Materials Science and Engineering,

- ❖ Dr. Prosenjit Saha has been awarded with a research grant from SEED Division of Department of Science and Technology (DST), Gol under the Scheme for Young Scientists and Technologists (SYST)-2016.
- ❖ Dr. Prosenjit Saha has also been awarded with prestigious Early Career Research (ECR) Award 2016 from DST-SERB, for executing a research project on “Cellulose nano scaffold for skin and bone replacement”.
- ❖ Dr. Mallar Ray acted as Guest Editor of International Conference on Functional Nano-Materials (IC-FNM 2016) issue of Materials Today: Proceedings, Elsevier Ltd.
- ❖ Dr. Mallar Ray acted as Lead Guest Editor for a Special Issue on Nanostructure based thermoelectric, 2016, of 'Journal of

Nanotechnology,' Hindawi Publications.

- ❖ Dr. Arijit Sinha acted as Associate Editor of International Conference on Functional Nano-Materials (IC-FNM 2016) issue of Materials Today: Proceedings, Elsevier Ltd.

In the School of VLSI Technology,

- a) Amretashis Sengupta, Assistant Professor has received Hanse-Wissenschaftskolleg (HWK) Fellowship in energy research (Germany) (2016-17).

Academic, Research and Campus Infrastructure

There has been a tremendous expansion in the number of laboratories and other Infrastructural facilities for academic growth of the Institute. Several existing laboratories have also undergone extensive modifications. Some of such ventures are given below:

- ❖ In the Department of Architecture, Town and Regional Planning, there has been augmentation of the Environmental Laboratory for Building Diagnostics. RS/GIS and CAAD Laboratories have been upgraded.
- ❖ In the Department of Chemistry following instrumental facilities have been installed and under operation:
 - (i) Single Crystal X-ray Diffractometer (through DST-SAIF program).
 - (ii) High performance computer cluster for theoretical molecular calculations.
 - (iii) Fuel Cell Test Station.
 - (iv) Solar cell Simulator.
 - (v) Scanning Electrochemical Microscope – programmable pico-liter solution dispenser
- ❖ In the Department of Computer Science and Engineering, there has been a modernization of Hardware laboratory.
- ❖ In the Department of Electrical Engineering, Basic Electrical Engineering Laboratory has been remodelled.
- ❖ In the Department of Human Resource Management, major augmentation has been undertaken during the current year and a new Placement Portal TnpSuite has been introduced.

- ❖ In Department of Mechanical Engineering, following new facilities for academic and research infrastructure have been introduced:
 - (i) Metal cutting laboratory has been modernized with the addition of a new heavy duty HMT lathe and a six component piezo-electric dynamometer of very high precision.
 - (ii) Mechanical homogenizer and Ultrasonicator machines have been procured and used for the preparation of emulsified fuels.
 - (iii) One Exhaust Gas Analyzer and one Diesel Smoke-meter have been procured and successfully installed in the Heat Power Laboratory for measurement of emission from petrol and diesel engines.
- ❖ In the Department of Metallurgical Engineering, FEG-SEM Laboratory has been set-up and the equipment has been procured under DIST-FIST program.
- ❖ In the Department of Physics, following equipments have been procured for the Research Labs.
 - (i) X-Ray Fluorescence Spectrometer (XRF)
 - (ii) Refractometer
 - (iii) Photoluminescence (PL) set-up
 - (iv) Spin Coater
- ❖ In the Dr. M.N. Dastur School of Materials Science and Engineering,
 - Modernization of
 - (i) Nano-Semiconductor Laboratory
 - (ii) Materials Processing and Heat Treatment Laboratory
 - (iii) Metallographic Laboratory
 - (iv) Modeling and Optimization Laboratory
 - Development of
 - (i) Polymer Processing Laboratory
 - (ii) Microscopy and Electrical Characterization Laboratory
- ❖ In the School of Management Sciences, Computer Lab was

modernized with Blackboard Learning Solution, SAP Learning Hub and subscribed for CRISIL Research.

- ❖ In the School of Community Science and Technology for running the Vocational Training Program of CSR project, the Downing Hall at IEST, Shibpur has been renovated and used.
- ❖ In the School of Mechatronics & Robotics a new Infrastructure development on Bio -Mechatronics Activities has been made.
- ❖ In the School of VLSI Technology, SMDP-C2SD Laboratory has been developed.
- ❖ In the Centre of Excellence for Green Energy and Sensor Systems, Advanced Characterization Laboratory for solar cells has been set up and operational.
- ❖ In the Centre for Healthcare Science and Technology, Laboratories on Biomedical implant, sensor and bioinstrumentation are being built and renovated at 3 laboratories of Heaton Hall.

Ramanujan Central library

The process of strengthening the infrastructure of the Ramanujan Central Library continued throughout the period under review. The library has strengthened its electronic reading room services by setting up a digital library with 48 desktop computers from TEQIP II funding. Library already upgraded its main server and integrated library management software, introduced electronic surveillance system and is now planning to implement RFID technology for providing better services to its members.

During the period under review 3,858 books were added to the collection of the library. The number of books issued to the members in the above period is 39,225. The access of full text scholarly electronic resources including ASCE Journals, ASME Digital Library, ACS Journals, AIP Journals, IEL Online, JSTOR, RSC Journals, Springer's LINK and Taylor & Francis Journals available through E-SHODH SINDHU Consortium was continued. The library has been subscribing seven subject collections of Elsevier's Science Direct and three bibliographical databases.

Foreign Visits and Invited Lectures

Many faculty members of this Institute participated actively in international events. Some have been invited for chairing sessions, or for delivering lectures at the international level conferences and symposia. Others have gone abroad for collaborative programs or for pursuing post-doctoral research. Here is a brief record of the faculty members who have been abroad for such activities since the last convocation.

In the Department of Aerospace Engineering and Applied Mechanics,

- ❖ Dr. Amit Roy Chowdhury delivered lectures in National University of Ireland, IRELAND and University of Edinburgh, UK.

In the Department of Department of Architecture, Town and Regional Planning,

- ❖ Dr. Souvanic Roy attended the Asian University Network Forum for Advances in Research (AUNFAIR 16) Symposium at Nishin, Japan in December 2016. Dr. Souvanic Roy has delivered a special lecture for the DOC project Shelter for All at SPA Bhopal during Nov 10-11, 2016.
- ❖ Dr. Parthasarathi Mukhopadhyay delivered an invited Lecture during a Short Term Course on Sustainable Infrastructure organized by Dept. of Civil Engineering, Indian School of Mines, Dhanbad.
- ❖ Dr. Subrata K Paul was invited at the Asian University Network Forum for Advances in Research (AUNFAIR 16) Symposium at Nishin, Japan in December 2016.

In the Department of Chemistry,

- ❖ Professor S.P. Goswami visited Ohio State University and Princeton University, USA.
- ❖ Dr. C. Bhattacharya visited Belorussian State University, under DST Indo-Belarus joint Project.
- ❖ Dr. D. Ganguly visited Kansas State University, USA.

In the Department of Civil Engineering,

- Prof. Kalyan Kumar Bhar was invited as an Expert Panel Speaker on "Aligning Academia with Industry- Symbiotic relationship of

Success" in CII-IEST Conference on Industry Academia Innovation Platform, held on August, 22, 2016 at The Lalit Great Eastern, Kolkata.

- Prof. Kalyan Kumar Bhar was invited as a Speaker to deliver a lecture on "Preparedness for Flood & Water Related Disasters" in workshop on "Disaster Preparedness", August 29, 2016, organized by the Department of Civil Engineering, Jadavpur University, Kolkata.
- Prof. Kalyan Kumar Bhar was invited as a Chief Guest to deliver Keynote Address on "Paradigm Shift in Engineering Computing" in Six-day workshop on "Numerical Methods and Application of Software in Engineering", September 20-28, 2016, organized by the Department of Civil Engineering, Heritage Institute of Technology, Kolkata.
- Prof. Kalyan Kumar Bhar was invited as a Speaker to deliver a lecture on "Flood Disaster Management" at 53rd INSPIRE Science Camp at Jagadish Bose Center of Excellence, Kolkata, October 01–05, 2016.
- Prof. Pritam Saha was invited as a Speaker on Pedestrian Safety and Infrastructure Solutions at the conference Infra Vision East 2016: Indian Chamber of Commerce, organized on 29th July, 2016 at Lalit Great Eastern, Kolkata.
- Prof. Pritam Saha was invited as a Session Chair in The International Conference on Ambient Systems, Networks and Technologies, May 23-26, 2016, Madrid, Spain, Session 14: Modeling and Simulation in Transportation Sciences IV.
- Dr. Asok Adak Invited by Dr. Lee Blaney of CBEE Department, UMBC for collaborative research during June 2016.
- Dr. Asok Adak Visited Houston, USA for International Conference on 'Environmental Science and Technology' during June 6-10, 2016.
- Prof Pritam Saha attended the international conference on Application of Principal Component Analysis for Outlier Detection in Heterogeneous Traffic Data, 7th International Conference on Ambient Systems, Networks and Technologies,

2016 (ANT 2016) in Madrid, Spain.

- Dr. Asok Adak Visited Rome, Italy for International Conference on “Advances in Civil, Structural and Environmental Engineering” during December 15-16, 2016.
- Dr. Soumya Bhattacharjya visited Tongji University, Shanghai, China to present paper in the 6th Asia Pacific Symposium on Structural Reliability and Applications APSSRA 2016 during May, 2016.
- Dr. Sujata Biswas delivered a Lecture in a workshop on 'Sustainable Water Resources Development in minor irrigation sector, West Bengal' organized by State Agricultural Engineers Association, West Bengal on 3rd December, 2016.
- Dr. Tapas Kumar Roy Visited Houston, USA for attending the Eighth international conference on environmental science and technology, Houston, Texas, USA.
- Dr. Aparna Dey Ghosh delivered an Invited Lecture in Seminar on Earthquake Engineering and Mitigation Techniques and in Refresher Course on Disaster Management, Jadavpur University, on September 03, 2016 and October 27, 2016.
- Dr. Subrata Chakraborty Visited Tongji University Shanghai to present the paper entitle Generation of Seismic Hazard Curve and Synthetic Ground Motion for the North Eastern Region of India for Performance Based Seismic Risk Assessment, The 6th Asia-Pacific Symposium on Structural Reliability and Its Applications, May 28-30, 2016, Shanghai, China.
- Dr. Subrata Chakraborty delivered a Keynote Address on Meta-modelling Based Simulation for Efficient Seismic Reliability Analysis of Structures in the 3rd National Conference on Reliability and Safety Engineering (NCRS-2016), SSN College of Engineering, Chennai and the Chennai Chapter of Society for Reliability and Safety Engineering, Chennai 01-03, Dec, 2016.
- Dr. Subrata Chakraborty delivered an Invited Lecture on Improved Super-elastic Isolation System using a Ferrous based Shape Memory Alloy (FNCATB), Structural Engineering Convention 2016, CSIR-SERC, Chennai Dec. 21-23, 2016.

- Dr. Subrata Chakraborty delivered an Invited Lecture on Equivalent Linearization Method for Nonlinear Stochastic Vibration Analysis: Application to some passive vibration control problem, One Week Workshop on “Computational Mechanics and Modelling” (CMM-2016) during November 12-16, 2016 at Mechanical Engineering Department, NIT Silchar.
- Dr. Ujjwal Saha Visited the University of Leuven, Belgium to conduct a collaborative research on Hourly rainfall generation by Markov Chain approach.
- Prof. Sudip Kumar Roy attended for presenting paper in 14th World Conference on Transport Research held at Tongji University, Shanghai China from 10th to 15th of July 2016.
- Prof. Sudip Kumar Roy and Prof. Sandip Chakraborty attended an international conference for presenting paper in 4th INTERNATIONAL CONFERENCE ON ADVANCES IN CIVIL STRUCTURAL AND ENVIRONMENTAL ENGINEERING-ASCEE 2016 at Rome, Italy during 15-16 December 2016.
- Prof. Sujit Kumar Dalui attended The 2016 World Congress on Advances in Civil, Environmental and Materials Research (ACEM16), 28th August to 1st September, 2016, Jeju, Korea.
- Prof. Gautam Bhattacharya acted as Conference Chair Symposia organized by DFI-India on Deep Foundation Technologies for Infrastructure Development in India during September 9-10, 2016 preceded by a Pre-conference workshop on Soft Soil Engineering for Underground Space Utilization on September 08, 2016 at IEST, Shibpur.
- Prof. Ambarish Ghosh delivered a keynote address on Bank Protection at RRI, Haringhata.

In the Department of Computer Science and Engineering,

- Dr Surajeet Ghosh visited Singapore to attend and present research papers at IEEE TENCON 2016.
- Dr Apurba Sarkar visited Nantes, France to attend and present a research paper at DGCI 2016; Visited at Marseille, France to attend and present a research paper at CTIC 2016; Visited USA to attend IMAGE'16 conference.

- Dr Asit Kumar Das visited Vancouver, Canada to attend the 7th International Conference on Information Technology, Electronics and Mobile Communication (IEEE IEMCON) 2016.
- Dr Saptarshi Ghosh visited Max Planck Institute for Software Systems, Saarbruecken, Germany for research collaboration; Presented Tutorial on "Utilising Online Social Media for Disaster Management", at IEEE Workshop on Distributed Systems for Coordinated Disaster Management (CORDIM), at IIM Kolkata; Delivered Invited talk on "Utilizing Online Social Media for Disaster Management" at IIT Bombay.
- Dr Sipra DasBit visited Bali, Indonesia to deliver tutorial in IEEE Region 10 Symposium (TENSYP); Visited Russia to attend the Third International Conference on Digital Information Processing, Data Mining, and Wireless Communications (DIPDMWC 2016).
- Dr Jaya Sil visited Russia to attend the Third International Conference on Digital Information Processing, Data Mining, and Wireless Communications (DIPDMWC2016); Delivered Invited Talk in 3rd IEEE International Conf. On RAIT 2016, ISM Dhanbad, India; Delivered Invited Talk in *International Conference of Advanced Computing (ICAC-2016)*, Kolkata
- Dr Susanta Chakraborty visited Changchun, China to attend International Conference on Computer Science and Network Technology; Delivered Invited Lecture on "Big Data analysis and application" Central University, Tripura.

In the Department of Electrical Engineering,

- Prof. D. Roy visited Japan to deliver a lecture.
- Prof. A. De visited UK to deliver a lecture.
- Prof. D. Sarkar visited UK and Japan for the purpose of delivering lectures.
- Prof. C.K. Chanda visited UK and Spain to deliver lectures.

In the Department of Electronics and Telecommunication Engineering,

- Prof. P. Bhattacharyya delivered an invited lecture in 'The 2016 International Conference on Low Dimensional Science' held at

National Chung Hsing University, Taiwan during August 28 - August 30, 2016; Attended "Applied Nanotechnology and Nano science International Conference" (ANNIC-2016), November 9-11th, 2016, Barcelona, Spain.

- Prof. Debasis Mitra attended the International Conference ANNIC- 2016, Barcelona, Spain.

In the Department of Humanities and Social Sciences,

- ❖ Dr. Madhumati Dutta visited for invited lecture to Portugal.
- ❖ Prof. Mallika Ghosh Sarbadhikary, visiting scholar, Purdue Northwest, delivered 3 invited lectures at Department of English and Global Studies Centre.

In the Department of Information Technology,

- Dr. Arindam Biswas visited USA to act as a session chair and present two papers in the prestigious conference: CompIMAGE-2016: (As a session chair) International Symposium CompIMAGE'16- Computational Modeling of Objects Presented in images: Fundamentals, Methods and Application, SEP21- 23, 2016, Niagara Falls, USA;
- Dr. Chandan Giri attended IEEE Intl. Asian Test Symposium ATS, 2016, Nov 21st-24th, Hiroshima, Japan.
- Dr. Tuhina Samanta delivered an invited lecture on "Advanced computer architecture in Pailan College of Technology and Management", Joka, March 2016.
- Dr. Malay Bhattacharyya Challenges in Designing Novel Crowd-powered Models, In Friday Colloquium, School of Information, UT Austin, Texas, USA, November 04, 2016; Image Clustering without Ground Truth, In GroupSight Workshop at AAI Conference on Human Computation and Crowdsourcing (GroupSight@AAAI HCOMP), Austin, USA, November 03, 2016; Consensus of Dependent Opinions, In AAI Conference on Human Computation and Crowdsourcing (AAAI HCOMP), Austin, USA, November 01, 2016; The Curse of Competitive Crowd Intelligence, In AAI Spring Symposium Series, Stanford University, Palo Alto, USA, March 22, 2016.
- Dr. Prasun Ghosal delivered invited talks on "Key Research

Challenges on Future Generation Technologies for Nanoscale System Design and Computing" at ABV-IIITM, Gwalior, India on November 18, 2016 during 4th INTERNATIONAL WORKSHOP/CONFERENCE ON COMPUTATIONAL CONDENSED MATTER PHYSICS AND MATERIALS SCIENCE (IWCCMP 2016), November 18-20, 2016.

- Dr. Santi Prasad Maity delivered lectures on "Optimization Techniques for Applications in Cognitive Radio and Image Processing" and "Role of Mathematics for Engineers" at Visvesvaraya National Institute of Technology Nagpur on 27th September, 2016; "Energy-Spectral Efficiency in Cooperative Cognitive Radio Networks in Presence of Malicious Operations" on 6th October in Int. Conf. On Computational Science and Engineering (ICCSE 2016) organized by RCC Institute of Information Technology, Kolkata; "Energy Efficient Relay Assisted Cooperative Cognitive Radio Networks"- On 27th October, 2016 in 1st Int. Conference on Advanced Computing (ICAC 2016) organized by MAKAUT (formerly WBUT) on 26-27th October, 2016; "Energy Efficiency in Cooperative Cognitive Radio Networks in Presence of Malicious Operations", Second International Conference on Computing and Communication Systems (I3CS 2016), 11-12 November, 2016, NEHU, Shillong, India; "Energy-Spectrum Efficiency Trade-off in Energy Harvesting Cooperative Cognitive Radio Networks", 5th International Conference on "Computing, Communication and Sensor Network, (CCSN 2016), 24-25th December, 2016, Kolkata, India; delivered a tutorial talk on IEEE International Conference on Microelectronics, Computing and Communication (MicroCom 2016), National Institute of Technology, Durgapur, India, 22nd-25th, January, 2016.
- Dr. Hafizur Rahaman has taken initiative for "Research Collaboration on Chip Fabrication" between Hiroshima University and IEST Shibpur and attended MOU Signing Ceremony at HU, 23rd November 2016, Japan; presented one research paper entitled "Parametric Fault Detection in Analog Circuits: A Statistical Approach", in *IEEE 25th IEEE Asian Test*

Symposium (ATS 2016), Hiroshima, Japan held during 21-24 November 2016.

In the Department of Mechanical Engineering,

- Dr. Debasis Datta, Professor in Mechanical Engineering attended and presented a paper in 19th World Conference on Non-destructive Testing (WCNDT-2016) in Munich, Germany during 13-17 June, 2016.
- Dr. Debasis Datta, Professor in Mechanical Engineering visited Broomfield Hospital, Chelmsford, UK and delivered a talk as per invitation of the Orthopaedic consultant Mr. Chris Rees for possible initiation of collaborative research work in the area of Biomechanics during June 20-24, 2016.
- Dr. Sujoy Kumar Saha, Professor attended IMECE -2016 organized by American Society of Mechanical Engineers as Topic chair at Phoenix, USA during November 11-17, 2016
- Dr. Bijan Kumar Mandal delivered an invited talk on “Biodiesel: An Alternative Fuel for CI Engine” on 23rd September, 2016 in National Conference on Advances in Thermal Engineering (NCATE2016) organized by the Department of Mechanical Engineering, Jadavpur University.
- Dr. Bijan Kumar Mandal delivered an invited talk on “The Effect of Air Preheating On Temperature Field And Soot Formation In Diffusion Flame” on 19th October, 2016 in National workshop on Recent Advances on Heat and Fluid Flow” at Government College of Engineering and Textile Technology, Berhampore, West Bengal.
- Dr. Sudip Ghosh delivered an invited talk on “Biomass based high efficiency systems for distributed rural generations” on 3rd September, 2016 in National Workshop on Recent Advances and Developments in Energy sector organized by the Department of Mechanical Engineering at Jadavpur University.
- Dr. Sudip Ghosh delivered an invited talk on “Advanced repowering options for coal power plants: Simulated thermal performance and economic assessment study” on 4th October, 2016 in the Department of Power Engineering at Jadavpur

University.

- Dr. Subhas Chandra Mondal delivered an invited talk on “Development of Nanocarb 110 Hardfacing Advanced Materials” on 7th September, 2016 in 34th ISER International Conference on "Nanoscience, Nanotechnology and advanced Materials" organized by ISER during 7-8 September, 2016 at Chennai, India.
- Dr. Subhas Chandra Mondal delivered an invited talk on “Machining Characteristics of Nano-structured Hardfacing Materials” on 30st Octoberr, 2016 in two days National Workshop on Machining and Machinability of Advanced Materials (NWMMAW-2016) organized by CSIR-CMERI Durgapur during 29-30 October, 2016.

In the Department of Metallurgical and Materials Engineering,

- Prof. Subrata Chatterjee has delivered prestigious “Dr. Daya Swarup Memorial Lecture” of the Indian Institute of Metals (IIM).
- Prof. Amitava Basu Mallick has visited Singapore and delivered one keynote and one invited lecture.
- Prof. Swarup Kr. Ghosh has delivered one invited lecture on “Tensile and Impact Tests” in M CCP 2016.
- Dr. Manojit Ghosh has delivered one invited lecture entitled “Introduction to Crystallographic Texture” in the workshop on Materials Characterization: Principles and Practices, (M CCP-2016) from 25th July to 5th August 2016.
- Dr. Manojit Ghosh has delivered one invited lecture on the topic “Latest Advances and Future Prospects of Welding Technologies”, on 26th October 2016, organised by Gaabesu, I IEST, Shibpur.

In the Department of Mining Engineering,

- Prof. N.C.Dey, visited University of Alaska Fairbanks (UAF) USA for chairing a session of APCOM- 2015. Instruction conference & presenting one paper.
- Prof. G.C.Roy; Attend 37th International Symposium on

Application of Computers and Operations Research on Mineral Industries (APCOM 2015) in the University of Alaska, USA, chair the session on off-shore placer resources Estimation in APCOM 2015.

In Dr. M.N. Dastur SCHOOL OF MATERIALS SCIENCE AND ENGINEERING (MNDSMSE),

- Plenary lecture by Prof. N. R. Bandyopadhyay on 1st International Conference on Engineering Materials and Metallurgical Engineering (ICEMME) during held 22-24 December, 2016 organized by Bangladesh Council of Scientific and Industrial Research (BCSIR) in Dhaka, Bangladesh.
- Invited lecture by Dr. Mallar Ray on 1st International Conference on Engineering Materials and Metallurgical Engineering (ICEMME) held during 22-24 December, 2016 organized by Bangladesh Council of Scientific and Industrial Research (BCSIR) in Dhaka, Bangladesh.

In the School of VLSI Technology,

- Dr Sudip Ghosh delivered invited lecture series in Faculty Development Program on Integrated Circuits Design & its Applications at United Institute of Technology, Allahabad on Digital design flow using VERILOG from 12.7.2016 to 13.7.2016.
- Dr Pranab Roy delivered invited Lecture on Digital Microfluidic Biochip design automation at Jadavpur University (in a UGC course on VLSI applications) in December, 2016.
- Prof. Hafizur Rahaman, delivered Lecture on "Digital Microfluidic Biochip design automation", (in the UGC Refresher Course on VLSI applications) in December, 2016.
- Prof. Hafizur Rahaman has delivered a keynote on "Quantum Circuit Synthesis Techniques" Mapping from Reversible Circuit" at Senate Hall, Dhaka University, Bangladesh on 13 May 2016.

In the Centre for Healthcare Science and Technology,

- ❖ Prof. Chitragada Das Mukhopdhyay visited USA to deliver a lecture.
- ❖ Prof. Sabyasachi Sarkar visited USA for the purpose of

delivering a lecture.

- ❖ Prof. Amit Roy Chowdhury visited Ireland and United Kingdom to deliver lectures.

Seminars, Workshops and Symposia

The period under review has witnessed a wide range of academic events organized by various departments, schools and centers of the Institute. A list of the major conferences, seminars, workshops etc. held since the last convocation is presented below:

The Department of Aerospace Engineering and Applied Mechanics organized,

- Two day workshop on Astrodynamics and Aerospace Materials on 10th and 11th August, 2016.

The Department of Architecture, Town and Regional Planning organized,

- COA-NIASA National Awards for Excellence in Architectural Thesis 2016, Zonal Jury IESTS – MESSOA Joint Design Workshop, 2016.

The Department of Civil Engineering organized,

- Prof. Debabrata Mazumder, Prof. Chanchal Majumder and Dr Asok Adak Organized 1-week short-term Symposia organized course on “ADVANCED TECHNOLOGIES FOR WATER AND WASTEWATER TREATMENT” during (23rd–28th) May, 2016.
- Prof. Ambarish Ghosh organized a Symposia funded by DFI-India on Deep Foundation Technologies for Infrastructure Development in India during September 9-10, 2016 preceded by a Pre-conference workshop on Soft Soil Engineering for Underground Space Utilization on September 08, 2016 at IEST, Shibpur.
- Prof. Tapash Kumar Roy, Prof Sandip Chakraborty and Prof Pritam Saha had organized a conference on Modern Trends in Design and Maintenance in Rigid Pavements during 07-09 April, 2016.
- Prof. Tapash Kumar Roy had organized a Basic Course on Valuation of Immovable Assets during 17-18 June, 2016.

- Dr. Ujjwal Saha conducted the first GIAN course of the Institute “Climate Change Impact Analysis”.

The Department of Computer Science and Technology organized,

- Workshop on Big Data Analytics and Management, September 01 - 10, 2016, under the aegis of Technical Education Quality Improvement Programme (TEQIP II).

The Department of Electrical Engineering organised,

- Workshop on “Soft Computing Driven Recent Advancement in Condition Monitoring of Electrical Equipment”.
- Short Seminar on Renewable Energy: Smart Grid Challenges; Smart Grid Initiatives.
- Industry Academia Special Bridge Course in Electrical Engineering.

The Department of Electronics and Communication organised,

- The Seventh International Conference on Sensor Device Technologies and Applications (SENSORDEVICES 2016) 2016, Nice, France, July 24 - 28, 2016.

The Department of Human Resource and Management organized,

- National Entrepreneurship Development Programme on Micro-Solar Dome.
- Seminar on Innovation and IP Creation: Imperative of Professional Education.
- Workshop on Cycle of Development, Innovation, Technology and Entrepreneurships.

The Department of Humanities and Social Sciences organized,

- Inauguration of ISSTaC and ICCHÉ.
- Workshop on Stress Management.
- Workshop on Pedagogy.
- Seminar on Commercialization of education.

The Department of Information Technology organized,

- WoAAA-2016: Workshop on Advanced Application of Algorithms, 21-23 December, 2016 at IEST, Shibpur.
- Short term course in advanced wireless sensor network, IEST

Shibpur, September 2016, under TEQIP-II.

- Professional English Language training (By British Council) 27th Jan to 10th March, 2016.
- IEEE Circuits and Systems Society (CASS) Chapter of IEEE Kolkata Section Technical Lecture Meeting on Emerging Trends in Next-Gen Computing Systems: Multicore, IoT, Big Data, and Cloud Perspective, January 2016, IEST, Shibpur, India.

At the Department of Mechanical Engineering,

- A two day “Tribology Frontiers Workshop” was organized during 3-4 August, 2016
- Workshop on Power Plant (LSPP-16) was organized in the conference Hall of the Dept.
- Workshop on “Recent Advances in Automobile Engineering (RAAE) 2016 was organized.

The Department of Metallurgy and Materials Engineering organized,

- International Indo-Belgian Workshop on “Crystallography and Texture (WCT 2016)” organised jointly with the Indian Institute of Metals.
- International Conference on Functional Nano Materials 28th - 29th September, 2016.

The Department of Physics organized the following,

- Lecture on “EINSTEIN & THE LIGHT QUANTUM ” on 21st January (2016).
- Lecture on “Fourier transform & its Applications” on 1st February (2016), both delivered by Prof. Ajoy Ghatak, of Indian Institute of Technology, New Delhi,
- Lecture on “Gravitation, cosmology & quantum field theory” by Dr. Suman Ghosh, of Tata Institute of Fundamental Research (TIFR), Mumbai, India, on 16th February (2016).
- Lecture on “Low temperature Physics: (magnetism, superconductivity and strongly correlated systems)” by Dr. Vivek Kumar Anand, of Helmholtz Zentrum Berlin, Germany, on 23rd February (2016).
- Lecture on “Are there quantum limits to diffusion in quantum

many-body systems?" by Dr. Nandan Pakhira, School of Mathematics & Physics, The University of Queensland, Australia, on 26th April (2016).

- *Lecture on "Higgs Boson Physics and Silicon Detector Development at the CMS Experiment" by Dr. Somnath Choudhury, Indian Institute of Science, Bangalore, on 24th May (2016).*
- *Lecture on "Solid electrolytes for electrical energy storage application" by Dr. Swarup Kundu, Department of Materials Engineering, Federal University of São Carlos, Brazil, on 27th January 2017).*

Dr M.N. Dastur School of Materials Science and Engineering organized,

- *International conference on "Functional nano-materials and their applications (IC-FNA 2016)" held during September 28-29, 2016 at Hotel ITC Fortune Park, Howrah.*

In the School of Management Sciences the following were organized,

- *A 'two-day workshop on Business Analytics'-Data Brio Academy.*
- *Seminars on:*
 - a. *'Managing Disruptive Technology'-IBM India.*
 - b. *'Transforming Failure to Success'-M/s. Benchmark Intercrafts of Mercedes Benz.*
 - c. *'Business Analytics'-IBM Singapore.*

In the School VLSI Technology the following were organized,

- *Seminar/Talk on "Radiation effects at Jupiter and its related design challenges" by Dr. Indranil Chatterjee, Airbus Defence & Space, Germany on 14th December 2016.*
- *Two weeks GIAN course on Charge and Spin Based Electronics: From Devices to Circuits and Systems. Duration: June 13 – June 24, 2016. Course Coordinator and Host Faculty: Prof. Hafizur Rahaman. Foreign Faculty: Prof. Kaushik Roy.*
- *Two weeks GIAN course on Testing and Design-for-Testability for Digital Integrated Circuits. Duration: July 25-August 05, 2016. Course Coordinator and Host Faculty: Prof. Hafizur*

Rahaman. Foreign Faculty: Prof. Krishnendu Chakrabarty.

At the Centre of Excellence for Green Energy and Sensor Systems,

- DST sponsored a high level brain storming meeting at CEGESS on 31st January, 2017 for preparing the Roadmap for interfacing R&D with Manufacturing on silicon solar cells in India. A large number of industries and scientists actively involved in the silicon solar cell research and manufacturing joined the meeting.

The institute has also initiated Annual Lecture Series commemorating some of the brightest minds in Indian history. This year the First Visveswaraiya Memorial Oration was delivered by our Hon'ble Chairman Dr K Radhakrishnan on "Mangalyan – India's Mission to Mars", Acharya P C Ray memorial oration was delivered by Prof Goverdhan Mehta, Tagore Memorial Oration was delivered by Prof Sukanta Chaudhury, Ramanujan Memorial Oration was delivered by Dr. Mahan maharaj, Acharya J C Bose Memorial Oration was delivered by Prof Indrani Bose and Swami Vivekananda Memorial Oration will be delivered by Prof Joy Sen. All these orations were attended enthusiastically by the students and teachers in large numbers and inspired our young minds in IEST Shibpur.

Visitors to the Institute

It is an honor for the Institute to have hosted a large number of distinguished academicians and industrialists since the last convocation. The faculty members and students have immensely benefited from the interaction with these eminent visitors. Some of the distinguished personalities who have visited the Institute from India and abroad during the period under consideration are:

- *In the Department of Aerospace Engineering and Applied Mechanics,*
 - a. Professor Arun Mishra, Chairman, Dept. of Mechanical and Aerospace Engineering, McGill University, Montreal, Canada on August, 2016.
 - b. Professor Stephen Yue, Department of Material Sciences, McGill University, Canada on August, 2016.
- *In the Department of Architecture, Town and Regional*

Planning,

- a. Prof. Andrew Charleson of the Victoria University of Wellington, New Zealand.
 - b. Dr. Peter Scriver and Dr. Amit Srivastava, Centre for Asian and Middle Eastern Architecture, University of Adelaide.
 - c. Prof. Soumyen Bandyopadhyay, Sir James Stirling Chair Professor, Liverpool School of Architecture, UK.
- *In the Department of Civil Engineering,*
 - a. Dr. Amalendu Dasgupta, Former Dean, IIT Guwahati.
 - b. Mr. Amitava Dutta, Vice President, STUP Consultants.
 - c. Dr. Sondipon Adhikari, Professor, College of Engineering, Swansea University, Bay Campus, Fabian Way, Crymlyn Burrows Swansea, SA1 8EN, Wales United Kingdom.
 - d. Dr. Patrick Willems, University of Leuven.
 - e. Dr. Rajesh Seth, Professor, University of Windsor, Canada.
 - *In the Department of Computer Science and Technology,*
 - a. Dr. Prodipta Biswas, Indian Institute of Science Bangalore.
 - *In the Department of Humanities and Social Sciences,*
 - a. Dr. Brian Green, Queens University Belfast.
 - b. Dr. Swapna Mukhopadhyay, Portland State University.
 - c. Dr. Alan Spector, Purdue Northwest.
 - *In the Department of Information Technology,*
 - a. Dr. Sandip Kundu, University of Massachusetts at Amherst, USA.
 - b. Dr. Vaskar Raychoudhury, Indian Institute of Technology Roorkee, India.
 - c. Dr. Deepayan Bhowmik, Dept. of Computing at Sheffield Hallam University, UK.
 - d. Prof. Robert Wille, Professor and Head, Department for Integrated Circuit and System Design, Johannes Kepler University Linz, Austria
 - *In the Department of Mechanical Engineering,*
 - a. Dr. Jayanta S Kapat, D.Sc. Lockheed Martin Professor,

Mechanical and Aerospace Engineering Department,
University of Central Florida and Director of Centre for
Advanced Turbo Machinery & Energy Research.

- b. Dr. P. K. Mallick, William E. Stirton Professor of
Mechanical Engineering and Director of Centre for
Lightweight Automobile Materials and Processing,
University of Michigan, Dearborn.
- *In the Department of Metallurgy and Materials Engineering,*
 - a. Professor Leo Kestens, Ghent University, Belgium.
 - b. Dr. Manish Roy, Scientist F, DMRL, Hyderabad.
 - c. Dr. J. K. Saha, DGM, INSDAG, Kolkata.
- *In the Department of Physics,*
 - a. Prof. Ajoy Ghatak, Indian Institute of Technology, New
Delhi.
 - b. Prof. Surajit Sen, Department of Physics, State University of
New York (SUNY) at Buffalo, New York, USA.
- *At Dr. M.N. Dastur School of Materials Science and Engineering,*
 - a. Dr. Bidhan Pramanick, Bio-MEMS Laboratory, Dept. of
Mechanical and Aerospace Engineering, UC Irvine, CA and
Postdoctoral Research Investigator, School of Engineering
and Science, ITESM, Mexico.
 - b. Dr. Indranil Chattopadhyay, an eminent scientist attached
to the Aryabhata Research Institute of Observational
Sciences (ARIES), India.
 - c. Dr. Kuruvilla Joseph, Sr. Professor and Dean (SA),
Department of Chemistry, Indian Institute of Space Science
and Technology (IIST), Department of Space, Government
of India Thiruvananthapuram, India.
 - d. Professor Shamal Kumar Lahiri, an eminent scientist s
associated with IBM, USA
- *At the School of Mechatronics and Robotics,*
 - a. Prof. Devdas Shetty, USA.
 - b. Prof. Anthon Nijholt, Netherlands.
 - c. Prof. Atikur Rahman Ahad, Bangladesh.

- *At the School of VLSI Technology,*
 - a. Prof. A.B. Bhattacharya, Ex-Professor IIT, Delhi. Head, Centre for Applied Research in Electronics (CARE).
 - b. Prof. Kaushik Roy, Purdue University, USA visited School of VLSI Technology.
 - c. Prof. Krishnendu Chakraborty, IEEE Fellow, Duke University, USA.
- *At the Centre of Excellence for Green Energy And Sensor Systems,*
 - a. Prof. Ashutosh Sharma, Secretary, DST.
- *At the Centre for Healthcare and Social Sciences,*
 - a. Prof. Subrata Saha, SUNY Brooklyn, USA.
 - b. Prof. Brian Derby, University of Manchester.
 - c. Prof. Abhay Pandit, NUS Ireland.
 - d. Prof. Shamik Bhattacharya, St.Mary's University, San Antonio, Texas.
 - e. Dr. Sourav Ghosh, Loughborough University, UK.

The Students Activities

It is really heartening to mention that the students of this Institute have been performing extremely well, both in academic as well as in extracurricular activities. Their synergy in organizing and participating in intra and inter institute events will sow the seeds of leadership in many of them as well as nurture the feeling of team spirit which is usually lacking in individuals nowadays. Let me mention some of the success stories and major student activities in the period under review.

- ❖ *Department of Architecture, Town and Regional Planning:*
 - a) UCP 2016 – NASA India – National Winner 1st (January 2016) - Sayak Banerjee and team.
 - b) Saint Gobain TRANSPARENCE 2015 V.10– National 4th, Jury Recommendation (March 2016) Team – Ayan Roy, Saisha Mattoo, Soumyodeep Das.
 - c) Saint Gobain Transparence 2016 V.11 – Regional Jury Recommendation (October 2016) Team – Ayan Roy,

Soumyodeep Das.

- d) Russel Bustle Regional Winner (March 2016) Team – Ayan Roy, Saisha Mattoo.
- e) Russel Bustle National Winner – Position 2nd in Nationals (May 2016) Team – Ayan Roy, Saisha Mattoo.
- f) NABC 2016 Promotional Works (April 2016) - Soham Karmakar.
- g) All Round Excellence Awards from GAABESU (April 2016) - Ayan Roy.
- h) Indian Arch '16 Publication – Editor In Chief (May 2016) - Shubhayan Modak.
- i) Professional and People – Bridging The Gaps – IIA WB Chapter Edit (May 2016) - Shubhayan Modak.
- j) IGBC Architectural Design Competition 2016 – Joint Winner, 1st National (September 2016) Team – Ayan Roy, Soumyodeep Das.
- k) IGBC 2016 – Macro Category - Special Recognition - Ayush Chakraborty, Sanjana Baidya.
- l) IGBC 2016 – Micro Category – Special Recognition- Tamali Basu.
- m) Asia Young Design Awards 2016 – Prelim Winner (December 2016) - Ayan Roy.
- n) Workshop At Reducing Disaster Risks In Historic Urban Areas, IIT Kharagpur - Aratrika Debnath.
- o) Asian Contest for Architectural Rookies Award Top 20 - Shiladitya Roy.
- p) UCP 2016 Nasa India, National Winner - Shiladitya Roy & Members From Other Batches.

❖ *Department of Chemistry:*

Eight PhD students won awards in different National / International conferences

Sl. No.	Name	Award Received in
01	Dr. Harahari Mandal	Nce-19, NIT, Trichy,
02	Mr. Sanjib Shyamal	RDBAM, Haldia Govt. College, Haldia
03	Mrs. Aparajita Bera	ICS, kolkata
04	Mr. Sanjib Shyamal	NCRAS, Kolkata
05	Mrs. Aparajita Bera	West Bengal State Science Congress, NITTTR, Kolkata
06	Mr. Sanjib Shyamal	53rd Annual Convention of Chemist, Gitam University, Visakhapatnam
07	Mr. Dipankar Sarkar	National Conference on Recent trends in functional Materials in relation to Nano materials and Nano technology (RTFMNN), St. Paul's Cathedral College, Kolkata
08	Sayantani Bhattacharya	Research Scholar Day-2016, IEST, Shibpur

❖ *Department of Civil Engineering:*

- a. Students organised a three-day event called "Udbhabani 2K16" in March 2016.
- b. Sri Sandip Mondal, former postgraduate student and current research scholar, Department of Civil Engineering, received the Innovative Student Projects Award 2016 from the Indian National Academy of Engineering (INAE) for his M.Tech thesis on

'Application of Biotechnology in Concrete' under the guidance of Prof. Arun Kumar Chakraborty.

- ❖ *Department of Computer Science and Technology:*
 - a. Anish Dutta, Soumit Bose and Trisha Kanji: Rank 1 in Computer Vision Based Autonomous Robotics Event in Kshitij at IIT, Kharagpur
 - b. Anish Dutta: Global Rank 27 and national rank 9 in Codechef October Long Challenge, with over 5000 participation across 60+ countries;
 - c. CODEIEST, A student initiative started by students of Computer Science & Technology Department organized various workshops and tutorials in line with the spirit of making everyone to learn to code.
- ❖ *Department of Electrical Engineering:*
 - a. IET Chapter opening drive
 - b. Electrical Engineers' Society
- *Department of Electronics and Telecommunications:*
 - a. Arnab Hazra was awarded best PhD thesis award 2016 by Institute for Smart Structures and Systems (ISSS): Supervisor: Dr. Partha Bhattacharyya.
 - b. Koushik Dutta (PhD Scholar) attended the 11th IEEE Nanotechnology Materials and Devices Conference (NMDC 2016), October 9-12th, 2016, Toulouse, France with DST travel grant.
 - c. Debanjan Acharyya (PhD Scholar) award DST travel grant to attend the "Applied Nanotechnology and Nano science International Conference" (ANNIC-2016), November 9-11th, 2016, Barcelona, Spain.
 - d. Mr. Debanjan Acharyya filed an Indian patent on the topic "A process for forming hybrid junction of reduced graphene nanoribbon and TiO₂ nanotubes for gas

sensor application”.

- e. Mrs. Sanghamitra Ghosal developed a ternary composite (TiO₂/R-GO/Pd) material for efficient alcohol detection.
 - f. Mr. Indranil Maity established a relation to quantify the conductivity nature of edge oxidized Armchair and Zigzag graphene nano-ribbon by simulating its electronic and transport properties.
- ❖ *Department of Human Resource Management:*
- a. Mentorship on IPR for UG and PG students.
 - b. Entrepreneurship orientation program for 1st year students.
 - c. Business Idea Quiz, organized by Entrepreneurships Development Cell.
 - d. Idea Validation and Pitching Contest.
- ❖ *Department of Humanities and Social Sciences:*
- a. Beginning of an Evening School as Students' outreach programme ICCHE under HSS.
 - b. Department of HSS with CMERI, Durgapur for cluster development.
 - c. Projects undertaken on RTE/life of Sex-Workers in Kolkata.
- ❖ *Department of Information Technology:*
- Students organized and actively participated in cultural and technical fests like TechFest, REBECCA, etc.
- ❖ *Department of Mechanical Engineering:*
- a. 5th and 7th Semester Mechanical Engineering Students participated in ISHRAE Kolkata chapter Student Quiz contest
 - b. Alok Raj and Nasifar Bakhsh of UG 7th Semester

students participated and presented a technical paper titled "Performance Analysis of a Solar Assisted OTEC Cycle for Powering a Cold Storage for Fishes" on 16th October 2016 in Annual Technical Paper Meet in All India Seminar organized by the Institution of Engineers Pune.

- c. 6th Semester Undergraduate students participated in industrial visit to Sagardighi Thermal Power Plant on 7-8th May, 2016.
- d. Student Society of this department organized the following seminars:
 - 1. 16 March, 2016: Seminar on NX-Software (CAD, CAM and CAE) by EDS Technologies Pvt. Ltd., Kolkata.
 - 2. 30 March, 2016: Seminar on "Mechanics to and from Geometry" by Dr. Asok Kumar Mallik.
 - 3. 05 August, 2016: Seminar on GRE & TOEFL preparation by Mr. Suhail Dutta, Ex-student, now got admission into Purdue Univ. USA.
 - 4. 09 and 16 August, 2016: Seminar on Training on AutoCAD organized by 2nd Year UG students.
- i. The following students attended and presented research papers in international conferences:

Samiran Samanta, Ph.D scholar attended and presented a paper in 5th International Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016), held at Jaipur National University, Jaipur during 17-19 March, 2016.

Ayan Pramanick, Ph.D scholar attended and presented two papers in All India Manufacturing Technology, Design and Research Conference (AIMTDR-2016), held at College of Engineering, Pune

during 16-18 December, 2016.

Prosun Mandal, Ph.D scholar attended a workshop on Three Days Indo-US Workshop on Design of Sustainable Systems, June 20-22, 2016, Organized by CPDM, IISC, Bangalore.

Saikat Mandal, M.Tech student attended and presented a paper in International Conference on Materials Science & Technology (ICMST-2016), held at Delhi University, Delhi during 1-3 March, 2016.

Madhu Sruthi Emani, M.Tech student, attended and presented a paper in International Conference on Recent Innovations in Engineering, Science, Humanities and Management (ICRIESHM) held at Gayatri Vidya Parishad College for Degree & P.G Courses, Visakhapatnam, Andhra Pradesh during 11-12 August, 2016.

- II. The following students delivered invited talk in workshops organized by this department:

Santanu Sardar, a Ph.D. Student of this department delivered a talk on 4th August, 2016 in Tribology Frontiers Workshop.

Pradip Mondal, a Ph.D. Student of this department delivered a talk on 7th September, 2016 in Lecture Session on Power Plant.

Sikandar Kumar Prasad, PG student of this department delivered a talk on "Effect of Supercharging on the Performance of Internal Combustion Engine" on 28th September, 2016 in the workshop on Recent Advances in Automobile Engineering (RAAE) 2016.

Raushan Kumar, 7th Semester UG student of this department delivered a talk on "Anatomy of

Automobiles-Basic Overview” on 28th September, 2016 in the workshop on Recent Advances in Automobile Engineering (RAAE) 2016.

Ankit Kumar Agarwal, 7th Semester UG student of this department delivered a talk on “Fuel Injection System in Automobiles” on 28th September, 2016 in the workshop on Recent Advances in Automobile Engineering (RAAE) 2016.

- ❖ *Department of Metallurgy and Materials Engineering:*
 - a. Debashish Sur and Anant Vishwakarma (5th Semester) represented the Department at Mineral Development and Quiz (MDAQ) program in August, 2016 at Noamundi, Odisha.
 - b. Mr. Subhranshu Chatterjee has received Best Student Research Paper Award in 3rd International Conference on Materials Science, Metal and Manufacturing (M3 2016) held in Singapore.
- ❖ *School of Management Sciences:*
 - a. Two students availed IIMC Merit Scholarship.
- ❖ *School of Community Science and Technology:*
 - I. “Shaping the Future of Food Quality, Health and Safety”, First Food Chemistry Conference organized by ELSEVIER, 30 October - 1 November 2016, Amsterdam, Netherlands, Paper presented by Debaroti Roy, INSPIRE Fellow.
 - II. International Conference on Advances in Bioprocess Engineering and Technology (Jan20th-22nd) organized by Heritage Institute of Technology, Kolkata, papers presented by Samadrita Sengupta, Sucharita Chatterjee.
 - III. National Conference on Obesity, Diabetes and

Cardiovascular disease is being held on 30th & 31st January, 2016 at Indian Science Congress Association, papers presented by Samadrita Sengupta.

- IV. International Conference on Advances in Bioprocess Engineering and Technology (Jan20th-22nd) organized by Heritage Institute of Technology, Kolkata, papers presented by Sanjukta Kar, Priyadarshini Chakraborty.
- V. Study on utilization of *Labeo rohita* fish roe protein concentrates in extruded food products” by Priyadarshini Chakraborty in 3rd AFSA Conference on Food Safety and Food Security, KIIT, Bhubaneswar, 17th September, 2016.

❖ *School of VLSI Technology:*

The Society of VLSI Technology (SOVT) has been formed under the Student Senate of IEST, Shibpur.

❖ *Centre of Excellence in Green Energy and Sensor Systems:*

Received Best Poster award in the European Photovoltaic Conference at Munich, Germany and also Second Best paper award in the International Conference on Sensor Technology held in Nanjing, China.

Ten research fellows participated in the three international conferences held in Munich, Singapore and Nanjing, China.

The Students' Senate of IEST, Shibpur, consists of several students' societies relating to academics, culture and sports. Fifteen departmental academic societies, ten societies of cultural and creative expressions and the society of games and sports constitute the Students' Senate. In the past year, the students have been very active in engaging themselves creatively within the campus, thereby fostering the growth of an environment

conducive for the development of sound mental health of all the students of the institute. Some of the highlights of the various activities of the Students' Senate since the last convocation are listed below.

- ❖ On 4th and 5th March 2016, Euphony - the Music Society of the institute organized *Oikotaan-2*, a unique, non-competitive music festival based on original compositions. The next edition, *Oikotaan-3* is scheduled during 4th - 5th March 2017. Further, Euphony organized a music competition *Crescendo* and an Indian classical musical programme *Sonorous*.
- ❖ *Gyandhara* - the distinctive quiz fest of the institute was organized by Quizmaniac Beings- the Quizzing Society during 11th - 13th March 2016. During the summer vacation of 2016, Quizmaniac Beings further organized an online quiz competition for the present students and alumni of the institute.
- ❖ SOCCE, the academic society of the Department of Civil Engineering, organized *Udbhabani 2k16* a technical fest based on Civil Engineering subjects for the second time after its inception in 2014.
- ❖ An event coined *Impetus* was conducted on 16th March 2016 by the Society of Mechanical Engineers, testing innovative design by the students. It also organized a seminar on *Mechanics: to & from Geometry* by Prof. Asok Kumar Mallik on 30th March 2016.
- ❖ A seminar was organized by the academic society of the Department of Electronics and Telecommunication Engineering on synthetic biology, delivered by Professor Sangram Bagh of Saha Institute of Nuclear Physics.

Robodarshan :

The Robotics Society hosted the event *Automaton* in the

fest *Instruo* in March, 2016, in which the arena and test bots were made by Robodarshan. Members of Robodarshan also participated in the Innovation fair at Science City, Kolkata, to showcase their summer project: *The tree climbing bot*.

- ❖ Society of Mining Engineering organized a departmental technical fest named *Initium 2016* in the month of April 2016.
- ❖ Camera Buff, the Film Society, made a promotional video for ICCHE, a student's outreach programme started by the students of IEST, Shibpur. Camera Buff also organized the monthly screening of several internationally reputed films.
- ❖ DebSoc, the Debating Society, organized a Model United Nations debate.
- ❖ LitSoc, the Literature Society launched its own e-magazine - *IRIDSCENT* in April 2016.
- ❖ An anti-ragging programme was organized in September 2016, in association with SAVE- an NGO working on promotion of ragging free environment in educational institutes.
- ❖ Society of Games and Sports participated in various competitions and tournaments such as those of Inter University East zone, Sports fest of BIT Mesra, etc.

Astrophel – Students Space Club.

- ❖ The first Space Club of the institute, named Astrophel, was very recently formed and has received an overwhelming response from the students. The members have already carried out commendable work on an experimental high altitude probe project for atmospheric data logging, termed *Project Horizon*.

Alumni Contributions

The contribution of our alumni in improving the infrastructure of the institute and in providing support to the students is truly commendable. Some of these contributions are mentioned below.

Dr. Arun Kanti Banerjee (Alumnus 1962 ME) donated 100,00,000 for Alpona Banerjee Memorial Fund to set up the *Alpona Banerjee Memorial Centre for Innovation* and *Alpona Banerjee Memorial Research Fellowship*. The Alpona Banerjee Memorial Centre for Innovation has already been inaugurated on 25th December, 2016.

We are pleased to mention that Smt. Archana Mukhopadhyay, wife of late Satya Narayan Mukhopadhyay (1953,ME) donated INR 10 lakhs to honor her husband starting an endowment at GAABESU to help few needy IEST Shibpur students. Mr. Nripendra P Acharya (1960, CE), donated INR 20 lakhs to GAABESU to encourage Research at Undergraduate and Post Graduate levels from the accumulated interest.

Mr. Jagannath Ganguly donated 5,00,000 in memory of his father, late Mr. Purna Chandra Ganguly who graduated from Glasgow University in 1909 and served as an Assistant Professor of Mechanical Engineering Department, the then Bengal Engineering College during the period of 1920 to 1934. The interest accrued from this memorial fund would be utilized in organizing Annual/Bi-Annual *P.C. Ganguly Memorial Workshop* by the Mechanical Engineering Department.

Since the last Convocation, the global alumni association of the institute, GAABESU, has arranged for several funds and research awards in order to promote research among the UG and the PG students and to help the students to undertake various academic and professional programmes.

Training and Placement

An important parameter, amongst others, for evaluating performance of any exclusively technical institute like ours is its ability to produce technically sound, trained, industry-ready

manpower and their placement in jobs. Notwithstanding, job market remaining dull on the face of overall low economic growth, the institute continues to be one of the priority destinations for many major industries for harnessing talents. With the upgradation of the status of the Institute to IEST, scopes for exploring diverse career options including self-employment, for our students has increased and as such, the mandate and scope of activities of the HRM department has been substantially enhanced and accordingly augmentation of the infrastructure and facilities of the department has also been framed out. Besides, dealing with placements and training of the students and organising related career development programmes for them, the HRM department also offers Ph.D. programme in the arena of IPR and Entrepreneurship and organizes various industry-interaction events. The activities of Innovation Facilitation Centre (supported by NRDC), Incubation Centre (supported by NSTEDB, DST-Gol), Entrepreneurship Development Cell and IPR Cell are coordinated and supervised by the HRM Department. The Incubation Centre of the Institute claims credit in developing the environment to encourage faculty-members and students towards techno-entrepreneurship and setting up new campus companies.

Extension Activities and Societal Outreach

IEST Shibpur is involved with the Namami Ganga Project initiated by Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India. Five villages have been adopted as Ganga Grams for managing water supply, sanitation, solid and liquid wastes, drainage, water bodies and overall landscape in and around villages situated along the banks of river Ganga for sustainable (for everyone and forever) development of the Ganga Grams as model villages. A detailed survey within the villages has been undertaken with the active participation of local panchayats and villagers.

Strategy and roadmap will be prepared for necessary structural interventions to improve the quality of life in the villages in synergy with the nearby river.

District	Block	Gram Panchayat	Village
HOWRAH	SHYAMPUR-I	BELARI	CHANDIPUR
HOWRAH	SHYAMPUR-I	BELARI	PURBBA BASUDEBPUR
HOWRAH	ULUBERIA-I	HEERAPUR	HIRAGANJA
HOWRAH	ULUBERIA-I	HEERAPUR	HIRAPUR
HOWRAH	ULUBERIA-I	HEERAPUR	KAJIAKHALI

- *At the Department of Civil Engineering:*
 - Arsenic removal units installed in remote villages and school of district Nadia, which are Serving more than 1000 families and 2500 school children.
 - Conducted hygiene awareness camps in 10 schools.
 - Dr. Goutam Bhattacharya have been Nominated as President, Vivekananda Youth Circle, IEST, Shibpur.
 - Installed an innovative design of group hand washing facility in 32 schools in Malda and South 24 Parganas districts.
- *At the Department of Human Resource Management:*
 - Entrepreneurships Awareness Camp for IEST Shibpur and ITI Shibpur, sponsored by Department of Science and Technology.
- ❖ *At the Department of Humanities and Social Sciences:*
 - Education and health for marginalized population in Howrah.
- ❖ *At the Department of Mechanical Engineering:*
 - Voluntary teaching to under privileged students at Belur

Math.

- ❖ *At the Department of Physics:*
 - Two-day Workshop on “National Graduate Physics Examination (NGPE)-Part C” in collaboration with Indian Association of Physics Teachers (IAPT), during 9th & 10th June 2016.
- *At the School of Community Science and Technology:*
 - SOCSAT has been involved in CSR project with Garden Reach Shipbuilders and Engineers Ltd. in association with Kolkata Police for conducting Vocational Skill Development training to the Unemployed Youth and School dropouts in and around Garden Reach and Maheshtala area to make them productive for employment as a part of demographic dividend.
- ❖ *At the School of Ecology, Infrastructure and Human Settlement Management:*
 - State Technical support Agency for Shyamaprasad Mukherjee National RURBAN Mission for Govt. of West Bengal.
 - Integrated of conservation Development Plan for Danish Historic core of Serampore by national Museum of Denmark.
 - Technical Resource Centre for Prime Minister Awas Yojana (PMAY) Govt. of India.
 - Technical Resource Centre for Smart city Mission, Govt. of India.
- ❖ *At the Centre of Excellence in Green Energy and Sensor Systems:*
 - Govt. of Tripura has awarded the contract of preparing the State Solar Policy of Tripura to CEGESS. Similarly State bank of India, Kolkata Circle has requested CEGESS to provide necessary guidance to implement their Green Banking Project throughout West Bengal

New Academic/Research Initiatives

Some of the new academic initiatives taken in the period under review are listed here.

- ❖ *In the Department of Civil Engineering the following new initiative has been taken,*
 - Collaborative Lecture Programme on Construction Technology has been initiated with Simplex Infrastructure Limited.
- ❖ *In the Department of Electrical Engineering the following new initiatives have been taken,*
 - Fabrication and Development of Single-axis Controlled Repulsive type Magnetic Bearing.
 - Fabrication and Development of Passive Magnetic Faulty Current Limit.
- ❖ *In the Department of Humanities and Social Sciences,*
 - An initiative for studies in Science Technology and Culture where a number of workshops and seminars have been started,
- ❖ *In the Department of Metallurgy and Materials Engineering the following new initiative has been taken:*
 - Preparation of Degradation of Metals and Physics of Materials laboratory under progress.
- ❖ *In the Department of Physics the following new academic initiatives have been taken:*
 - For B.Tech-M.Tech dual degree course: One open elective paper “*An Introduction to General Relativistic Astrophysics and Cosmology*” (Code PH531/1) has been introduced in the 5th Sem. B.Tech-M.Tech dual degree course.
 - An Elective on “*Advanced Condensed Matter Physics*” has been introduced for M.Sc students.
- ❖ *In the School of Community Science and Technology the following new research initiatives have been taken,*
 - Adaptation of Membrane Technology in Food Processing sector.

- Development of phytochemicals and Nutraceuticals for food industry.
- Food Product Development.
- Food Nano technology.
- ❖ *In the school of Mechatronics and Robotics the following new infrastructures have been developed,*
 - Bi-handed robot, humanoid robot, drives and control, sensors, image processing, mechanical motion transmission devices, data gloves, laser system, virtual instrumentation, modelling and simulation software, Micro2 robot, electronics data gloves, lasers, smart materials, embedded systems.
 - Technology developed: Lower limb active exoskeleton (under patenting), active ankle foot prosthesis (under patenting), Autonomous omni directional wheelchair, Four fingered dexterous robotic hand.
- ❖ *In the Centre for Healthcare Science and Technology the current research areas are:*
 - Portable cardiac risk detector – sponsored by Dept. of Science & Technology, Govt. of India
 - Multifunction electronic blood pressure machine,
 - Computerized auto-analysis of paper-based archived ECG
 - Work on clinical Microbiology specially to address drug resistant bacterial strains
 - Combinatorial therapy for celiac diseases
 - Prototypes developed on:
 - i) Portable electrical biosensor for bacteria detection
 - ii) Wireless sensor system for health monitoring of elderly people (field testing has started).

Academic Collaboration

The Institute is happy to extend its existing network of academic

collaboration to several other institutes of both national and international repute. Some of the new academic partnerships are cited below:

In the Department of Architecture, Town and Regional Planning,

- ❖ With Sapienza University, Rome, Italy

In the Department of Civil Engineering, with

- ❖ UPM, Malaysia
- ❖ University of Leuven, Belgium
- ❖ University of Wollongong, Australia
- ❖ Central Road Research Institute (CRRI)
- ❖ National Highway Authority of India (NHAI)

In the Department of Electronics and Telecommunication Engineering,

- ❖ Prof. Hans Jörg Fecht, Institute of Micro and Nanomaterials, Ulm University, Germany
- ❖ Prof. Mon Shu Ho, Department of Physics, National Chung Hsing University, Taiwan

In the Department of Mechanical Engineering,

- ❖ School of LASER Science and Technology, Jadavpur University

In the Department of Information and Technology,

- ❖ Research collaboration with Computer science department, UCF, Orlando.
- ❖ Collaborative work started with MIT Media Lab, UT Austin and UC Berkeley.
- ❖ Active research collaboration with University of North Texas, USA.
- ❖ Joint research collaboration has been initiated with University of Lincoln, UK.
- ❖ Collaborative work started with ECE Department Northeastern University, USA.
- ❖ Hiroshima University, Japan, Duke University, USA, University of Bremen, Germany under DST-DAAD Foundation, Johannes

Kepler University Linz, Austria.

In the Department of chemistry active collaboration initiated with

- ❖ Dr. Nikhil R. Jana, Centre for Advanced Materials, Indian Association for the Cultivation of Science, Kolkata
- ❖ Dr. Somabrata Acharya, Centre for Advanced Materials, Indian Association for the Cultivation of Science, Kolkata
- ❖ Dr. Partha P. Parui, Department of Chemistry, Jadavpur University, Kolkata
- ❖ Prof. Ryan M. Richards and Dr. Brian J. Trewyn, Department of Chemistry and Geochemistry, Colorado school of Mines, CO, USA
- ❖ The Chinese University of Hong Kong, People's Republic of China
- ❖ School of Chemistry, The University of Nottingham, University Park, England, UK.
- ❖ ISOF-CNR, Bologna BO, ITALY
- ❖ Department of Organic Chemistry, University of Murcia, Campus de Espinardo, 30100 Murcia, Spain
- ❖ Departament de Química, Universitat de les IllesBalears, Crta. De Valldemossa km 7.5, 07122 Palma, Balears, Spain.
- ❖ Dr. Biswa Pranab Choudhury, Scientist, University of California, San Diego,
- ❖ Prof. S. Lahiri, SINP,
- ❖ Prof. Urmi Chatterjee, University of Calcutta
- ❖ Dr. Ashis Kumar Satpati, BARC, Mumbai,
- ❖ Dr. S. Kumar, Central Electrochemical Research Institute (CECRI-CSIR), Karaikudi,
- ❖ Prof. Samir Kumar Pal, *Department of Chemical, Biological and Macromolecular Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata*
- ❖ Professor Yauhen A. Straltsou, Head of Electrochemistry

Department, Department of Chemistry, Belarusian State University (BSU), Minsk, BELARUS,

- ❖ Prof. Anatoly I. Kulak, Deputy Director of the Institute of General and Inorganic Chemistry, Belarusian National Academy of Sciences (IGIC NASB); Head of the Electrochemistry and Photochemistry Department, Institute of General and Inorganic Chemistry (IGIC NASB), Minsk, BELARUS.
- ❖ Paula Brandão, *Departamento de Química, CICECO-Instituto de Materiais de Aveiro, Universidade de Aveiro, 3810-193 Aveiro, Portugal*
- ❖ Bas de Bruin, Homogeneous Catalysis Group, van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands
- ❖ Dr. Parimal Paul (CSIR-Central Salt & Marine Chemicals Research Institute, Gijubhai Badheka Marg, Bhavnagar, Gujarat-364002, INDIA
- ❖ Professor H. K. Fun of University of Malaysia
- ❖ CSIR-CGCRI, Kolkata, India
- ❖ School of Materials Science, University of New South Wales, Sydney, Australia.
- ❖ Saha Institute of Nuclear Physics, Kolkata, India
- ❖ Centre for Renewable Energy, Northeastern University, Boston, USA.
- ❖ Department of Chemistry, Presidency College, Kolkata, India

In the Dr. M.N. Dastur School of Materials Science and Engineering,

- ❖ CSIR-CGCRI, Kolkata
- ❖ SINP, Kolkata
- ❖ CSIR-CMERI, Durgapur
- ❖ NML, Jamshedpur
- ❖ IJIRA, Kolkata
- ❖ NIRJAFT, Kolkata

In the Department of Physics,

- ❖ UGC –DAE, Saltlake, Kolkata
- ❖ ICAR- NIRJAFT, Kolkata

In the School of VLSI Technology,

- ❖ Initiation has been started on High Voltage Chip Fabrication in collaboration with Hiroshima University, Japan.

In the School of Mechatronics & Robotics,

- ❖ Collaboration with CSIR Laboratories for M.Tech in Mechatronics with CEERI Pilani, CSIO Chandigarh, CMERI Durgapur.

In the Department of Aerospace Engineering and Applied Mechanics,

- ❖ 3rd Year students visited IIT, Kanpur on March, 2016 for training in Flight Mechanics Laboratory Academic Collaboration in process with McGill University, Montreal, Canada and Indian Space Research Organization (ISRO).

Industrial Collaboration

IEST, Shibpur has initiated strong collaborative liaison with the industries to carry out need-driven research for the industry. Like last year, this year too we have signed MOU with a number of international and National Institutes and Organizations, for collaborative research, students and faculty exchange programs, infrastructure and curriculum development, establishment of Centre of Excellence, students' training, student entrepreneurship development, etc. Some of these industries are-

- ❖ Tata Consultancy Services Limited
- ❖ Tata Technologies
- ❖ Simplex Infrastructures
- ❖ Vikram Solar
- ❖ Synchro Electronics
- ❖ Wadhwani Foundation
- ❖ National Institute of Solar Energy

Four MOUs were signed in a ceremony, held on 16th November 2016 in the Rashtrapati Bhawan, New Delhi, in the presence of Hon'ble President of India.

A Conference was organized by IEST in collaboration with CII on the theme of "Industry Academia Innovation Platform - Building a Knowledge Society and Enabling Make in India" on 22nd August 2016 in Kolkata. The program was inaugurated by Dr K Radhakrishnan, Chairman IEST and was graced by the presence of Hon'ble President of India as Chief Guest and Hon'ble Governor of West Bengal, President, CII, Director General, CII, MD, Tata steel, CMD, GRSE, Directors of IIT KGP and IIT Bombay, and large number of eminent academicians and industry stalwarts from the entire country. The day-long sessions of panel discussions forwarded a number of recommendations stressing on i) depth of knowledge of a student, ii) industry oriented research projects, iii) scaling-up of laboratory scale research to industrial scale, iv) identification of research areas, where industry needs innovation and v) establishment of a web-based portal of consultants from academia who can provide solutions to critical technical problems faced regularly by the industries.

The Institute has attached great importance to its industrial collaborative ties and in the last year several new joint programs have been initiated. In addition to those mentioned above some of these are mentioned below.

- ❖ In the Department of Civil Engineering,
 - MoU with Simplex Infrastructure for student's field training and arrangement of classes of construction technology
 - Consultancy projects with various public and private sector organization in different field of Civil Engineering
- ❖ In the Department of Chemistry: Dyesol Ltd., Australia.
- ❖ In the Department of Electrical Engineering with CESC, Kolkata
- ❖ In M.N. Dastur School of Materials Science and Engg with M.N.Dastur & Co (P) Ltd, Cal.

- ❖ In the Department of Mechanical Engineering Central Glass and Ceramic Research Institute (CGCRI), Kolkata.
- ❖ In the Department of Metallurgy and Materials Engineering,
 - Rashtriya Ispat Nigam *Limited - Visakhapatnam Steel Plant (RINL-VSP).*
 - Metal and Steel Factory, Ishapore, WB
 - Tata Steel Limited, Jamshedpur
 - Electrosteel Castings Limited, Khardah, WB
- ❖ In the School of Community Science and Technology CSR project with Garden Reach Shipbuilders and Engineers Ltd along with Kolkata Police.
- ❖ In the School of VLSI Technology Collaboration in the area of Mixed Signal VLSI Design with Sankalp Semiconductors, India
- ❖ In the School of Mechatronics & Robotics Collaboration work in the area of Rehabilitation engineering with NIOH, Kolkata

Blessings and Good wishes to the Students

For you, my students, this day marks an important milestone in your life's journey. I wish from the core of my heart, all the recipients of degrees as well as distinctions, very best in life. The learning process never terminates in life – therefore, you will learn at every step in course of time.

Here is the place, where the serene nature with tranquility meets the vibrant life of the youth. Here is the place where you had developed the foundation of your future life . As the graduates of IEST, Shibpur you have the monumental responsibility of taking part in nation building with utmost sincerity and devotion.

Remember that the world is going to witness fast changes – faster than anything that we have witnessed so far during the yester years. The education that you have received here will enable you to solve the problems that the globe is going to confront – problems of energy, environment, healthcare, mobility, resource mobilization and

management.

To quote from Gurudev Rabindranath Tagore, as you step out from the canopy of this tranquil nest of your dear institute into the “hard reality” beyond, I urge you to *make yourself free from fear and unleash your inner strength to win over all the challenges ahead*. Be assured that the blessings of all of us – your parents and teachers, will always be with you.

Jai Hind!