ADDRESS
By
Professor Ajoy Kumar Ray
Vice Chancellor

Bengal Engineering and Science University, Shibpur
Howrah - 711103
VICE CHANCELLOR’S ADDRESS

Hon’ble President of India and Chief Guest of the Fifteenth Convocation of BESU, Shibpur, Shri Pranab Mukherjee, Hon’ble Governor of West Bengal and Chancellor of BESU, Shri M. K. Narayanan, Hon’ble Minister-in-charge, Department of Higher Education and School Education, Govt. of West Bengal and our Guest of Honour, Prof. Bratya Basu, Recipients of honorary degrees, Deans of different Faculty, Members of the Court, the Executive Council and the Faculty Councils, Distinguished Guests, my colleagues, Recipients of Degrees, Medals and Prizes, Media Representatives, Ladies and Gentlemen.

Notes of Welcome

On behalf of Bengal Engineering and Science University, Shibpur, it is a great privilege for me to extend a very warm welcome to you all on this occasion - the 15th Convocation of this University today.

It is indeed a rare honour to have with us on this occasion our beloved President, Shri Pranab Mukherjee, as the Chief Guest of the Convocation. A man of unparalleled experience in governance with the distinction of having served as Foreign, Defence, Commerce and Finance Minister at different times, Shri Mukherjee is renowned for his exemplary service of over five decades to the nation.

During the period 2004-2012, Shri Mukherjee was instrumental in spearheading critical decisions of the Government on a range of issues such as Administrative reforms, Right to Information, Right to Employment, Food Security, Energy Security, Information Technology and Telecommunication, setting up of UIDAI, Metro Rail etc. He was instrumental in setting up the Regional Rural
Banks (1975) and the EXIM Bank of India as well as the National Bank for Agriculture and Rural Development (1981-82). Shri Mukherjee was also author of a modified formula for resource sharing between the Centre and the States in 1991 which came to be known as the Gadgil - Mukherjee formula. He has extensive diplomatic experience and has served on the Board of Governors of the IMF, World Bank, Asian Development Bank and African Development Bank.

Shri Mukherjee’s intellectual and political prowess, as well as remarkable knowledge of international relations, financial affairs and parliamentary processes, have been widely admired throughout the globe. A prolific reader, Shri Mukherjee has authored several books on the Indian Economy and on Nation Building. The many awards and honours conferred on him include the Best Parliamentarian Award in 1997, the Padma Vibhushan in 2008 and the Best Administrator in India Award in 2011. He was rated one of the best five Finance Ministers of the world in 1984 and was declared ‘Finance Minister of the year’ for Asia in 2010 by “Emerging Markets”, the journal of record for the World Bank and the IMF. It gives me pleasure to recall his last visit to our University, when he delivered a brilliant lecture on ‘Indian Economy’ to our faculty, students and alumni. This was followed by an interactive session which will be remembered by the entire University community for a long time to come.

We are also deeply privileged to have with us Hon’ble Shri M. K. Narayanan, Governor of West Bengal and our beloved Chancellor, to preside over this Convocation. As Hon’ble Chancellor, Sri Narayanan has always been a leading influence for this University. We have been receiving his wise counsel, support and encouragement in all our endeavours towards achieving excellence.

We are extremely fortunate to have the Hon’ble Education Minister of the State, Prof. Bratya Basu, with us today as Guest of Honour. An educationist, litterateur and an eminent exponent of Bengali theatre, Prof. Basu has always extended all possible help and cooperation to this University. On behalf of the University I accord a hearty welcome to Prof. Basu.
We extend our sincere welcome to the distinguished personalities on whom the University is privileged to confer the doctorate degrees (Honoris Causa) for their outstanding contributions in various fields of human endeavour. We are thankful for their kind personal presence here to receive our tribute.

Dr. Bimal Kumar Bose, an alumnus of Bengal Engineering College, is a towering personality in the field of power electronics. He has held the Condra Chair of Excellence in Power Electronics at the University of Tennessee, Knoxville. An authority and pioneer in power electronics, Dr. Bose is internationally acclaimed for his many contributions that include advanced control techniques by microcomputers, fuzzy logic and neural networks, transistor ac power switch for matrix converters, adaptive hysteresis-band current control, etc. Dr. Bose is an innovator, educator, and mentor to many members of the industry all over the world. After receiving his B.E. degree from Bengal Engineering College in 1956, he went on to get his M.S. degree in 1960 from the University of Wisconsin, Madison, and Ph.D. degree from Calcutta University in 1966. He has contributed to the global promotion of power electronics through his books, publications, patents, tutorials, invited seminars and keynote speeches around the world. To him scientific research is akin to transcendental meditation!

A renowned cardiologist and cardiac surgeon, Dr. Marthanda Varma Sankaran Valiathan, is a visionary who has pioneered successful efforts in designing cost-effective heart valves and making them accessible and affordable to the public. He is a Fellow of the Royal College of Surgeons (England & Edinburgh) and also holds a degree in cardio-vascular and thoracic surgery from the Royal College of Physicians & Surgeons, Canada. Dr. Valiathan received his initial medical education in India, completing his degree from the University of Kerala in 1956. He went on to do his post graduation in surgery at the University of Liverpool in UK and then underwent specialized training in cardiac surgery at the John Hopkins and Georgetown University hospitals in the USA. The founder-director of the
Sree Chitra Thirunal Institute of Medical Sciences & Technology, Thiruvananthapuram, and former Vice Chancellor of Manipal Academy of Higher Education, his medical interests have spanned the fields of paediatric cardiac surgery, tropical heart muscle disease and development of cardiovascular devices. Dr. Valiathan is presently the chairman of the Academic Council of Mar Athanasios College For Advanced Studies, Thiruvalla. He has authored a famous treatise titled ‘Legacy of Charaka, Sushrutha and others of the Indian System of Medicine’ which is a retelling of the original Sanskrit version ‘Charaka Samhitha’ composed by Charaka who is the founder of Ayurveda. He is a recipient of the Indian National Science Academy’s Shree Dhanwanthari Puraskar and has been honoured by the nation with the Padma Vibhushan.

‘Queen of thumri’, Padma Bhushan Vidushi Girija Devi is one of India’s greatest vocalists of the Banaras and Senia traditions and one of the last masters of the ‘Purab Ang Gayaki’ of the Banaras Gharana. Acclaimed by music enthusiasts and connoisseurs alike, she has dedicated her life to the cause of Hindustani Classical Vocal music, performing and teaching at the highest level of musical excellence, for more than six decades. Born in Banaras, she was initiated into music at the tender age of five under the tutelage of Pandit Sarju Prasad Mishra and later continued her training with Pandit Srichandra Mishra. Girija Devi started her musical career with a solo concert in 1949 at an All India Radio broadcast from Allahabad and has been a constant invitee to concerts in India and abroad since. She has been heaped with awards and accolades, including the Sangeet Natak Akademi Award, the Padma Bhushan, the ITC Award and the Maha Sangeet Samman Award. She has served as a member of the Central Audition Board of AIR and Sangeet Natak Akademi, Delhi. She has been a visiting Professor to the Banaras Hindu University and has been a Guru for over two decades at the Sangeet Research Academy. She is renowned for her amazing proficiency in all the vocal forms of northern India, Khayal, Thumri, Dadra, Tappa, Kajri, Hori, Chaiti and Bhajan.

On the recommendation of the University community and on approval of our Hon’ble Chancellor, this University is honoured
to confer D.Sc. degrees (Honoris Causa) on Dr. Bimal Kumar Bose and on Dr. Valiathan and D.Litt degree (Honoris Causa) on Smt. Girija Devi in this Convocation.

In today’s Convocation, the ‘Distinguished Alumnus Award’ shall be conferred to three members of our alumni family who have contributed significantly towards the advancement of the frontiers of knowledge through their professional excellence. The University feels proud of their glorious achievements and at the same time recognizes their contributions to the cause of their Alma Mater in its journey towards excellence.

In this Convocation, we shall also pay tribute to four eminent former Professors of this institution, through the conferment of the ‘Distinguished Teacher Award’. These former faculty members have toiled hard over decades to produce some of the best engineers and scientists, and have become bywords in teaching amongst generations of students.

It is a great pleasure to welcome all other distinguished teachers, alumni, guests, learned members of the teaching community and media persons, who have taken pains to come over here and join us on this very special occasion. Finally, a hearty welcome to our dear students who would be receiving degrees and awards.

Glimpses of Academic Pursuits

The University has recorded significant progress in academic pursuits since the last Convocation held on February 23, 2012, by its programmes of teaching, research and extension activities.

Degrees and prizes will be awarded in this Convocation to a total of 489 undergraduate students of 10 courses, 381 postgraduate students from 24 courses and 28 Ph.D. Fellows who have completed their studies and passed the examinations during this period. University medals will be awarded to 39 candidates who have secured highest marks in different disciplines.
Doctoral and Post-Doctoral Research Programme

Excellence in research and development has always been the hallmark of this University. Across its academic departments, the University can boast of the commendable performance of its faculty members, particularly of their quality research output, which is evinced by nearly 850 publications since the last convocation in various peer-reviewed national and international journals as well as conference proceedings, books, monographs etc. It is worth mentioning that there have been more than 400 international journal publications alone. The Ph.D. programme in the University has also enhanced considerably during the recent years. Presently, there are 454 registered doctoral students and the current year itself has witnessed a fresh enrolment of 101 candidates in the Ph.D. programme.

Sponsored Research and Consultancy

A significant number of sponsored projects with substantial funding are being carried out in the University. Presently 142 sponsored research projects are under operation with a financial outlay of approximately Rs. 74 crores. In the year since the last convocation, 31 new research projects worth nearly Rs. 7 crores have been sanctioned in favour of the University. Besides this, 26 consultancy projects have also been initiated during this period. Some of the latest research projects of the University are mentioned here:

- Development of Indian Highway Capacity Manual
- Design, development and testing of 3-phase Permanent Magnet Machines and their converters
- Development of Model Synthetic Leaf to Harvest Light
- Effect of supercritical carbon dioxide on pore structure sorption properties and permeability of coals
- Development of Microstrip Phased Array Antenna System for Eliminating Scan Blindness by using Defected Ground Structures
• Synthesis and characterization of low dimensional structures of bismuth telluride for application of thermoelectric devices
• Analysis and Development of a single axis controlled repulsive type magnetic bearing
• Passive control of seismically excited short period structures by the Compliant Liquid Column Damper
• Cafeteria - A Sustainable Steel Intensive Demonstrative Building at Bengal Engineering and Science University, Shibpur
• Design and development of Substrate Integrated Wave-guide (SIW) based RF circuits and components using Meta-materials in Ku-band Application
• Assessment of effects of arsenic pollution on health in rural Bengal and development and implementation of sustainable technology solution
• Efficacy of Silicon Microchannel cytosensor Platform for Electrical Profiling of Multiple Mammalian Cells Under Intervention Towards Diagnostic and Regenerative Applications
• Turbulence in rough bed free surface flow using double averaged Navier Stokes Equations
• Guidance Control and Target Tracking Strategies for Precision Guidance Missiles
• Development of Technology to make Low Cost Nutritionally Effective Ready to eat “Protein Rich Human Food from Oilseed or De-Oiled Edible seed Cakes”
• Rapid Assessment of domestic fluoride removal filters in endemic areas
• Computer aided design, analysis & Development of patient specific dental implant on Indian context
• Structural elucidation and characterization of native polysaccharides and oligosaccharides in cultivable and edible mushroom along with synthesis of isolated oilgasaccharides: Application as low cost immune-enhancer
• Development of suitable slime waste management systems for sustainable iron mining in India
• Evaluation of fatigue behaviour of low (0.2 wt.%) C medium (5-10wt.%)Mn steels
• Search for Platinum-free Catalysts for Direct Alcohol Fuel Cells
• Influence of silver and tin on microstructure and texture in Al-Zn-Mg alloy
• Enhancement of non-equilibrium solubility of binary immiscible systems by ternary addition
• Design & Development of Computerized Instrument for Testing Bending Behaviour of Semi-rigid Fabrics with Special Reference to Technical Textiles
• Detailed Study on Performance of M25 Concrete Mixes made with ACC Cements vis-à-vis some other Cement Brands
• Development of automata model for distributed systems
• Dark Energy Models and Accelerating Universe
• Assessment of Internodal Accessibility and Best Alternative Path between any two Designated Stations
• 3D TV-3D View from All Directions without Glasses
• Ergonomic analysis of job heaviness and development of musculoskeletal disorders for selective underground coal miners in India
• Fabrication and Characterization of Optical nano and micro fibers
• A Novel Metal-Insulator-Metal (MIM) device for detection of early spoilage of Potato during Storage

Accolades for our University Faculty

During the year, many of our faculty members have won several awards and laurels for their excellence in academic pursuits. To name a few of them:

• Dr. Partha Bhattacharyya from the Department of Electronics and Telecommunication Engineering has received the INSA
Medal for Young Scientists 2012, the INAE Young Engineer Award 2012 and the BECAA-WMA and GAABESU Young Faculty Research Award 2012. Prof. Bhattacharyya also has a biographical citation in Marquis Who’s Who in the World 2013 (30th Edition).

• Dr. Debdulal Das from the Department of Metallurgy & Materials Engineering has also been a recipient of the BECAA-WMA and GAABESU Young Faculty Research Award 2012. Prof. Das has also won the First Prize for Best Oral Presentation in ATM of Indian Institute of Metals.

• Dr. M. Ray from the School of Materials Science & Engineering has received the G. C. Jain award of MRSI for the best Ph.D. thesis in Materials Science.

• Prof. Monojit Mitra from the Department of Electronics and Telecommunication Engineering has received the Shikhsha Rattan Puraskar, 2012, IIFS, New Delhi.

• Prof. N.C. Dey of the Department of Mining Engineering has received the J. G. Coal India Kumarmangalam award 2012.

• Prof. Arun K. Chakraborty of the Department of Civil Engineering has received the National Award (Gold Medal) in Education from the National Education Society, Mumbai.

• Prof. Jaya Sil, of the Department of Computer Science & Technology was selected and participated in the INSA Scientist Exchange Programme, 2012. Prof. Sil has also received the Best Paper Award in the International Conference AIM, 2012.

• Dr. Sukumar Kundu from the Department of Metallurgy & Materials Engineering has been awarded an Indo-US fellowship to the Colorado School of Mines.

• Prof. S. K. Saha has been elected Member of the Scientific Council of the International Centre of Heat and Mass Transfer and Member of the American Chemical Society (ACS). He has been invited to be the lead guest editor of special issues of the international journals: ASME J Heat Transfer, Frontiers in Heat Mass Transfer and Heat Transfer Engineering.
• Prof. Subrata Chakraborty of the Department of Civil Engineering was Guest editor of SRESA Int. Journal of Life Cycle Reliability and Safety Engineering, Vol.1, Issues 3 and 4, 2012, and has become Associate Editor of the Journal of the Institution of Engineers (India): Series A, Springer.

• Prof. A. K. Barua of the Centre of Excellence for Green Energy and Sensor Systems has become Chairman, MNRE, R&D Committee while

• Dr. S.P. Gon Chowdhury has been invited to become Advisor, Ministry of Energy, Lakshwadip Govt.

• Prof. H. Saha and Dr. R. Bhattacharya, have become Member RAC, NTPC-NETRA and Member DST-PAC

• Prof. S. Chatterjee from the Department of Metallurgy & Materials Engineering delivered the Keynote lecture in the Special Symposium on High Performance Steels at the 67th ATM of Indian Institute of Metals.

• Prof. Souvanic Roy from the Department of Architecture, Town and Regional Planning delivered the Keynote Address in the National Consultation on Jawaharlal Nehru Urban Renewal Mission at Tata Institute of Habitat Studies, Mumbai.

• Prof. Sudip Kr. Chattopadhyay of the Department of Chemistry has contributed an invited paper for the upcoming special issue of the Journal of Physical Chemistry A (ACS) entitled “Oka Festschrift: Celebrating 45 years of Astro-chemistry”.

Further, I am extremely happy to announce that the faculty members of the Department of Electrical Engineering have been awarded the ‘Outstanding Performance’ prize by IEEE thrice in a row for their activities in the IEEE – Industry Applications Society, Kolkata chapter.

Additionally, achievements of our faculty members have also been recognized in various forms by different quarters. Though we are not naming them individually, we congratulate all of them on their commendable academic achievements.
Academic, Research and Campus Infrastructure

The University has witnessed notable augmentation in infrastructure for facilitating academic, research and administrative activities in the University during the past one year. Some of the major steps in this direction are as follows:

• Extensive laboratory infrastructure development has been undertaken in the Department of Electronics and Telecommunication Engineering in the Microwave & MM wave Laboratory, Nano Thin Film Laboratory, Solid State Gas Sensor Devices Laboratory, Microwave Measurement and Simulation Laboratory and Wireless Communication Laboratory.

• In the Centre for Green Energy & Sensor Systems, state of the art fabrication facilities of crystalline silicon solar cells and amorphous silicon solar cells have been established. Several other labs such as Characterization Lab, Sensor System Lab, PV System Lab and Sensor characterization Lab are also being developed in this Centre.

• In the School of Ecology, Infrastructure & Human Settlement Management, a Laboratory on ‘Climatology and Weather Monitoring’ has been developed.

• The Advanced Power Electronics Laboratory in the Department of Electrical Engineering has been expanded.

• There has been a complete renovation of the Language Laboratory through UGC funding in the Department of Humanities & Social Sciences.

• In the School of Materials Science & Engineering a Laboratory for Low Dimensional Advanced Materials Synthesis (SMALL) and an Advanced Material Characterization Laboratory have been created.

Central Library

The facilities in the library have been significantly improved by way of introducing new electronic resources through
UGC-INFONET Digital Library Consortium and through subscription to selected management science databases. The access of *ASCE, ASME and IEL Online* available through the AICTE-INDEST consortium is continued. The Library is now subscribing to selected subject collections of Elsevier’s *Science Direct* database.

The Central Library of the University organized a Book Fair in 2012, in which all the leading national publishers participated. The University has procured new books worth 50 lakhs during the last year.

**Foreign Visits and Invited Lectures**

It is matter of pride that many faculty members have had highly acclaimed participation in international conferences and symposia abroad and have been invited for delivering lectures by various organisations during the last one year. Some faculty members also went abroad for academic collaboration or for pursuing post-doctoral research. A list of such faculty members is presented below.

<table>
<thead>
<tr>
<th>Name of Faculty Member</th>
<th>Department</th>
<th>Country visited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Keya Mitra</td>
<td>Architecture, Town &amp; Regional Planning</td>
<td>Rome</td>
</tr>
<tr>
<td>Prof. Jayati Datta</td>
<td>Chemistry</td>
<td>UK, Australia</td>
</tr>
<tr>
<td>Prof. Chinmoy Bhattacharya</td>
<td>Chemistry</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. K.K. Bhar and Prof. C. Mazumder</td>
<td>Civil Engineering</td>
<td>UK</td>
</tr>
<tr>
<td>Prof. S. K. Roy and Prof. Ambarish Ghosh</td>
<td>Civil Engineering</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>Prof. Aparna (Dey) Ghosh</td>
<td>Civil Engineering</td>
<td>Portugal</td>
</tr>
<tr>
<td>Prof. Jaya Sil</td>
<td>Computer Science &amp; Technology</td>
<td>Poland</td>
</tr>
<tr>
<td>Name of Faculty Member</td>
<td>Department</td>
<td>Country visited</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Prof. K. Mukherjee</td>
<td>Electrical Engineering</td>
<td>Canada</td>
</tr>
<tr>
<td>Prof. Partha Bhattacharyya</td>
<td>Electronics &amp; Telecomm Engineering</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Tamaghnna Acharya</td>
<td>Electronics &amp; Telecommunication</td>
<td>France</td>
</tr>
<tr>
<td>Prof. Bhabani Prasad Mukhopadhyay</td>
<td>Geology</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>Prof. Tapas Kumar Gangopadhyay</td>
<td>Geology</td>
<td>Singapore</td>
</tr>
<tr>
<td>Prof. Madhumati Dutta</td>
<td>Humanities and Social Sciences</td>
<td>Morocco</td>
</tr>
<tr>
<td>Prof. Sukanta Das</td>
<td>Information Technology</td>
<td>France, Greece</td>
</tr>
<tr>
<td>Prof. Hafizur Rahaman</td>
<td>Information Technology, SOVLST</td>
<td>Malaysia</td>
</tr>
<tr>
<td>Prof. Santi P. Maity</td>
<td>Information Technology</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Ujjal Debnath</td>
<td>Mathematics</td>
<td>China</td>
</tr>
<tr>
<td>Prof. Sujoy Kumar Saha</td>
<td>Mechanical Engineering</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Debasis Datta</td>
<td>Mechanical Engineering</td>
<td>South Africa</td>
</tr>
<tr>
<td>Prof. Sukumar Kundu</td>
<td>Metallurgy &amp; Materials Engineering</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Tapan Ganguly</td>
<td>Physics</td>
<td>China</td>
</tr>
<tr>
<td>Prof. S. M. Hossain</td>
<td>Physics</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. N. R. Bandyopadhyay</td>
<td>School of Materials Science &amp;</td>
<td>Bangladesh</td>
</tr>
<tr>
<td></td>
<td>Engineering</td>
<td></td>
</tr>
<tr>
<td>Prof. Pranab Roy</td>
<td>School of VLSI Technology</td>
<td>Malaysia, Qatar</td>
</tr>
<tr>
<td>Prof. A. K. Barua</td>
<td>Centre of Green Energy &amp; Sensor</td>
<td>France</td>
</tr>
<tr>
<td></td>
<td>Systems</td>
<td></td>
</tr>
</tbody>
</table>

In addition, a large number of our faculty members have attended and chaired sessions in various national conferences.
I congratulate all such faculty members on their commendable performance.
Seminars, Workshops and Symposia

Throughout the year, various academic events including workshops, seminars, short-term courses, refresher courses, etc. have been organized by the academic departments of the University. A quick glance at such major events, department-wise, would be as follows:

<table>
<thead>
<tr>
<th>Department/School/Centre</th>
<th>Name of event</th>
</tr>
</thead>
</table>
| Depts. of Information Technology, Electronics & Telecommunication Engg. and School of VLSI Technology | • International Symposium on VLSI Design and Test (VDAT 2012)  
• International Symposium on Electronic System Design (ISED 2012) |
| Dept. of Metallurgy & Materials Engineering | • International Conference on Energy and Environmental issues in Non-ferrous Industries: Compilation of Benchmarks  
• International Workshop on High Performance Steels  
• Workshop on Surface Engineering of Metals and Alloys |
| Centre for Health Care Science & Technology | • International Workshop on Recent Trends in Biomedical and Allied Engineering |
| Dept. of Electrical Engineering | • Short-term course on “Power Electronics”  
• National seminar on ‘Embedded Systems in Instrumentation and Control’ (ESIC 2012)  
• Workshop on ‘Industry-Institute Interaction’ |
| Centre for Green Energy & Sensor Systems | • National Workshop on “Plasmonics and Nanostructured Solar Cells”  
• National workshop on “Interfacing Renewable Energy Sources with Utility Grid” |
<p>| Dept. of Information Technology, School of VLSI Technology | • ARM Faculty Development Workshop on MBED Processor |</p>
<table>
<thead>
<tr>
<th>Department/School/Centre</th>
<th>Name of event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. of Information Technology, School of VLSI Technology</td>
<td>• Seminar on “Wireless Health” and Workshop on “Low Power Embedded Systems Design using MSP430” in collaboration with Texas Instruments India and Cranes Software</td>
</tr>
<tr>
<td>Dept. of Civil Engineering</td>
<td>• Training program for the Officers of M/s Larsen and Toubro Construction-EDRC Kolkata</td>
</tr>
<tr>
<td></td>
<td>• Workshop on Steel Design and IS code</td>
</tr>
<tr>
<td></td>
<td>• Siddhaananda Memorial Lecture on “Planning and Design of Urban Metropolitan Transportation”</td>
</tr>
<tr>
<td>Dept. of Mechanical Engineering</td>
<td>• Workshop on Advances in Mechanical Engg (WAME)</td>
</tr>
<tr>
<td></td>
<td>• Refresher course for Officers of M/s Larsen and Toubro Construction-EDRC Kolkata</td>
</tr>
<tr>
<td>Dept. of Mining Engineering</td>
<td>• 23rd National Convention of Mining Engineers, Kolkata</td>
</tr>
<tr>
<td></td>
<td>• Workshop on “Ergonomic analysis of work load and development of musculo skeletal disorder of underground coal miners</td>
</tr>
<tr>
<td></td>
<td>• Evening course on GIS</td>
</tr>
<tr>
<td>School of Materials Science &amp; Engg.</td>
<td>• Short term course on “Materials Engineering: An overview” for Scientist of Bangladesh Council for Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh</td>
</tr>
<tr>
<td>School of Ecology, Infrastructure &amp; Human Settlement Management</td>
<td>• Awareness Programme on Green Building and Building Rating System</td>
</tr>
<tr>
<td></td>
<td>• Seminar on Capacity Building on Green Building and GRIHA Rating System</td>
</tr>
<tr>
<td></td>
<td>• Training Programme for the Trainers &amp; Evaluators on GRIHA Rating System</td>
</tr>
<tr>
<td>Department/School/Centre</td>
<td>Name of event</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| Physics                  | • Symposium on “The ‘God’ Particle and The Mystery of the Universe” on the occasion of the 155th birthday celebration of Acharya Jagadish Chandra Bose  
• Lecture on “Atomic Clusters: A possible building motif for Inorganic Nanomaterials” |

**Visitors to the University**

The University has been privileged to receive a good number of visitors from in-country and abroad, both from academic institutes and industry, during the period under review. Some of the illustrious visitors who visited us from abroad are:

- Prof. Vishwani D. Agrawal, James J. Danaher, Professor of Electrical and Computer Engineering, Auburn University, USA
- Prof. Nikil Dutt, Chancellor’s Professor of CS and EECS, Center for Embedded Computer Systems, University of California, Irvine, USA
- Prof. Rolf Drechsler, Professor, University of Bremen, & Director of the Cyber-Physical Systems group at the German Research Center for Artificial Intelligence (DFKI), Germany
- Prof. Arjun Kapur, Director, Software Development, Intel Mobile and Communications Group, USA
- Prof. Krishnendu Chakrabarty, Professor, Department of Electrical and Computer Engineering, Duke University, USA
- Prof. Sanjit K. Mitra, from University of California, Santa Barbara, USA and University of Southern California, Los Angeles, USA
- Prof. Tsung-Yi Ho from Department of Computer Science and Information Engineering, National Cheng Kung University, Taiwan
• Mr. Nihar (Neil) Ray, Leader, Advanced Reactor Program, United States Nuclear Regulatory Commission
• Prof. Arindam Ghosh, University of Queensland, Australia
• Dr. Judith Todd, Pennsylvania State University
• Prof. Leo Kestens, Ghent University, Belgium
• Prof. T. Kuwabara, TAUT, Japan
• Dr. Michael K. Thomsen from University of Copenhagen, Denmark
• Prof. Gerhard W. Dueck from University of New Brunswick, Canada
• Prof. D. Michael Miller, Vice President (Research), University of Victoria, Canada
• Prof. P. K. Basu, Vanderbilt University, USA
• Dr. Priyadarsan Patra, Intel, USA
• Dr. Mrinal Mandal from University of Alberta, Canada
• Prof. Debjyoti Banerjee from Texas A. M. University, USA
• Prof. Amit Bandopadhay, Washington State Univ., USA
• Prof. Subrata Saha, State University of New York, USA
• Prof. Sushmita Basu, Washington State University, USA
• Mr. Rafiq Azam, renowned architect from Bangladesh
• Dr. Elena Pereloma, University of Wollongong, Australia
• Dr. J. Sietsma, Delft University of Technology, Netherlands
• Dr. Kwansoo Chung, Seoul National University, S. Korea
• Dr. Paulo Santo Assis, REDMAT and UFOP, Brazil

At the national level, the faculty members have interacted with many leading lights of India, from both industries and academia. A few of them are as follows:

• Mr. H. M. Nerurkar, MD, Tata Steel
• Prof. S. K. Bhattacharyya, Director CBRI, Roorkee
• Prof. S. L. Dhingra, Institute Chair Professor in the Dept. of Civil Engineering, IIT, Bombay
• Prof. Rangan Banerjee, Forbes Marshall Chair Professor in the Dept. of Energy Science and Engineering, IIT, Bombay
• Prof. J. Vashi, Chair Professor in the Centre for Research in Nanotechnology & Science of IIT, Bombay
• Prof. T. R. Ramachandran, former Head, Dept. of Metallurgical Engineering, IIT, Kanpur and Founder-Director of Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur
• Mr. Manish Gupta, Minister-in-charge, Power Dept., Govt. of W. Bengal
• Dr. Prasada Raju, Advisor, DST
• Prof. Vikram Kumar, Chairman, DST, PAC

The Students

During the period under review, there have been many remarkable achievements by the students of this University, thanks to the congenial academic ambience of the campus. To mention a few such success stories:

• A recipient of BE degree in this Convocation, Aniket Datta has stood 1st among 1 lakh 5 thousand candidates in the GATE-2012 exam of Electrical Engineering.
• Arkajyoti Das and Saurav Karwa, from the Department of Mining Engineering, have secured first and second national ranks respectively in GATE-2012, in Mining Engineering.
• Indrajit Sarkar, a postgraduate degree recipient also from the Department of Electrical Engineering, specialising in Power Electronics and Drives has received the INAE best M.Tech thesis award.
• 3 students from the Department of Metallurgy & Materials Engineering secured positions in the top 10 All India Rank of GATE-2012. From the same department, post-graduate student Gautam Anand was nominated by MHRD for the Commonwealth Scholarship while Avik Dey and Soutam Banerjee stood first in paper presentation competitions held
at IIT, Kharagpur (COMPOSIT), JU (Metallix) and BESU (Metallum).

- Debaprasad Das of the School of VLSI Technology received the Best Ph.D. thesis award by IEEE Circuits & Systems Society.

- Debasruti Chowdhury from the Department of Physics received the best oral paper award for her research work presented in the international conference Computers and Devices for Communication (CODEC-2012).

- Prasenjit Chanak from the Department of Information Technology received the Best paper award in ACC 2012 Kochi.

- The first prize in CII IGBC Green Cities Competition, 2012, was bagged by Subhodeep Maji and Anirban Maiti of the Department of Architecture, Town and Regional Planning. From the same department, Sanchayan Chatterjee and Subhodeep Maji were awarded the first and third prize respectively in Birla White Yuvaratna (Regional) Contest, 2012, while Sayan Modak and Yawar Ali won the Regional Architectural Quiz (ARCHUMEN) organized by Ethos India in 2012.

- Students from the School of Management Sciences participated in the 5th Annual Entrepreneurship Summit at IIMC & won the first prize in “PRARAMBH” at Heritage Institute of Technology.

Beyond the confines of textbooks, our students are actively participating in various extracurricular and co-curricular activities including PT/NCC/NSS as a compulsory elective subject. As responsible citizens of our society, they are also involved in organizing various social awareness programmes. Various students’ societies have been formed to nurture their creative expression. I would now like to highlight some of the major students’ co-curricular events.

- The Robotics Society, under the Students’ Society of Scientific Expression, organized the Annual Technical Festival INSTRUO - 2012 in the University Campus, where
they held different events like Robo-Vision, Robo-Soccers, Robo-Hiking, Glide Leo etc. The Robotic Society also organized a Govt. of India sponsored “Open Design and Techno-modeling competition”.

- The Dramatic Society named as “Les Thespians” has been very vibrant and staged several shows, the most notable being a week long festival to commemorate the demise of Badal Sarkar, the great dramatist and writer who happens to be an alumnus of this Institution. The success of this event, prompted the “Les Thespians” of BESU to organize the annual dramatic festival “Anuranan 2012” in which the renowned drama of Rabindranath Tagore “Achalayatan” was staged with professional competence.

- The Quiz Club, Music Society and Photographic Society have also been active in organizing programmes at regular intervals. Several new musical instruments and photographic equipments have recently been acquired to boost the activities of the Music and Photographic Societies respectively.

- “Novus Initium 2012”, a cultural evening entirely organized and presented by the first year students deserves special mention due to the wide array of talent that was displayed by the students.

- “BEgyan”, the University’s first technical magazine run by the students has been launched.

- The University cricket team was Runners-up in the 20th Chetan Devraj Memorial East Zone Inter Technical Institute tournament at BIT Mesra, Ranchi last year.

- The University gymnasium has been upgraded last year with a number of modern equipments.

The contribution of our alumni to improve the infrastructure of games and sports is truly commendable. The construction of an international standard swimming pool, renovation of a stadium, renovation of Slater Hall to accommodate various societies for creative expression and modernisation of the Athletic Club and the gymnasium have all been successful projects undertaken by our alumni.
Training and Placements

Development of technically sound, trained, industry-ready manpower is one of the primary goals of a predominantly technological University like ours and its success is reflected in the job placements. We are happy to announce that in spite of worldwide economic recession, which has had a very conspicuous reflection in the job market, this University has been able to attain remarkable success in placements in the last year. The overall placement for the undergraduate engineering students across various types of industries including some of the very high-end ones has been very impressive.

Extension Activities and Societal Outreach

The University and its faculty members have not restricted themselves within the classroom and laboratories and are satisfactorily involved in extension activities and social outreach programmes. Some of such activities undertaken recently are:

• The School of Ecology, Infrastructure & Human Settlement Management has undertaken Planning and Action Research for Livelihood and Infrastructure development for Adaptation to Climate Change in the Sunderbans.

• The School of Community Science and Technology (SOCSAT) has carried out various programmes to foster sustainable development of different marginalized communities. In 2012, the Garden Reach Shipbuilders & Engineers Ltd., Kolkata, a Govt. of India undertaking under the Ministry of Defence, entrusted SOCSAT with a Govt. of India’s Corporate Social Responsibility project to impart “Skill development/Vocational Training to the unemployed youth around the locality in Metiabruz, Kolkata”, with the objective of training the unemployed youth for their employment in appropriate trade and/or to enable them to start entrepreneurship.

• The Centre for Green Energy & Sensor Systems has taken active participation in the Howrah Solar City program with
Howrah Municipal Corporation and a Teachers Training Program with NCPRE, IIT, Mumbai.

• The Department of Humanities and Social Sciences has been running an Equal Opportunity Cell for the development of students from economically backward classes. It has also been coordinating activities for CRY. Besides, foreign language training and TEQIP sponsored ELT courses for developing new & upgraded teaching material for developing presentation skills of otherwise technically-strong students have been organized by this department.

• Programmes for the development and improvement of weaker students have also been undertaken by the Department of Mathematics under EAP, TEQIP-II. This department has also undertaken programmes to help postgraduate students be better equipped for examinations such as NET, SET and GATE.

• The Department of Civil Engineering has made significant contribution in providing safe drinking water facilities for rural people in arsenic affected areas.

• Faculty members of the Department of Geology have been making a noteworthy endeavour to educate and generate awareness in the common people of the different villages of the Howrah district regarding optimum usage of ground water and quality of water.

• The University, in collaboration with the South Howrah Citizens’ Forum, has organized a Refresher Course for senior school students on ‘Foundations of Physics’ in Dec, 2012. A large number of students from all over W. Bengal have participated in this course.

New Academic/ Research Initiatives

Besides teaching and research in conventional course curriculum, the University has also initiated academic activities pertaining to new and frontier technology areas. A brief overview of such initiatives is presented below.

• ‘Professor A. K. Seal Advanced Steel Research Centre’ has been started in the Department of Metallurgy and Materials
Engineering, in the same department Prof. Nikhilesh Bandopadhyay has joined as Tata Steel Chair Professor.

• In the Department of Information Technology, a Cloud Computing Laboratory sponsored by Cognizant Technologies Solution India Ltd. has been inaugurated.

• In the Department of Chemistry, research into the use of non-metal in Fuel cell technology has been started.

• In the School of Ecology, Infrastructure & Human Settlement Management several new activities have been taken up, such as, Sustainable Urban Development Strategy for Ecologically Fragile and Landslide Prone Areas in Darjeeling Hills, and National Consultation on ‘Policy and Advocacy for an Improved Urban Renewal Mission’ in collaboration with Institute of Habitat Studies, Tata Institute of Social Sciences and India Habitat Forum, Pune.

• In the Centre for Green Energy & Sensor Systems, research initiatives have been taken in the areas of efficiency enhancement of various types of thin film solar cells, new generation solar cells and systems with new, novel nano-materials and green methods, new methodologies of solar energy storage, new bio-mass and methodologies for fuel cells, advanced solar photovoltaic systems for lighting and power plant applications, sensors based on novel materials and techniques for agricultural, environmental, automobile and healthcare applications.

• In the Department of Physics, research initiatives have been taken in areas such as fabrication and characterization of optical nano fibers, parabolic pulse generation by third order dispersion compensation using time reversal system, gravity wave detection using quantum optics, synthesis & characterization of graphene by chemical method and synthesis & characterization of polyaniline bismuth telluride by chemical method.

• Establishment of a ‘Centre for Advanced Research on Water’ has been undertaken by the Department of Civil Engineering.

• Applications for wireless health monitoring for aged people and wireless fire control system are being developed in
the Department of Electronics and Telecommunication Engineering.

• In the Department of Humanities and Social Sciences, work on Climate Change Policy has commenced.

• In the Department of Metallurgy and Materials Engineering, a new postgraduate course on ‘Advanced Materials Technology’ is being introduced from the 2013-14 session.

• The Department of Human Resource Management has initiated Ph.D. programme during the current year.

**Academic Collaboration**

The University has strengthened its existing network of academic collaboration with several institutes of repute across the globe by forging new partnerships with some more of such institutes. New Institutes included in our collaboration network during the last one year are: University of Chicago, USA, University of Barcelona, Spain, University of Murcia, Spain, University of Wroclaw, Poland, CSSS & NRCS, Morocco, University of Bremen, Germany, University of Bristol, UK, University of Paris-Sud, France, University of Alberta, Canada, Inria Nancy Grand-Est Research Center, Nancy, France, University of Victoria, British Columbia, Canada, University of California Irvine, USA, Universiti Teknologi Petronas, Malaysia, Queen’s University, Belfast, UK.

**Industrial Collaboration**

The University is also actively involved in collaborations with many important industries for various academic and research activities. The recent additions to such collaboration have been between:

• Department of Civil Engineering with Messers Angerlehner of Austria and MICHEL BAU of Germany on development and application of Glass Reinforced Plastic Pipes for
renovation of the sewerage system in KMC area, under JNNURM.

- Department of Electronics & Telecommunication Engineering and Stesalit Industries Pvt. Ltd. on development of healthy and safe home, based on wireless sensors.

- Department of Information Technology and School of VLSI Technology with ARM India and Cognizant India Ltd. on development of ARM based processors.

- School of Materials Science & Engineering with Tata Steels R&D, Jamshedpur and Gas Turbine Research Establishment, DRDO, Bangalore, on development and characterization of advanced materials.

- School Of VLSI Technology with Sankalp Semiconductors, VECC and ST Microelectronics on design of mixed signal processors.

- Centre for Green Energy & Sensor Systems (CEGESS) with Hind High Vacuum Co. Ltd., Bangalore, Vikram Solar, Kolkata and Agni Power and Electronics Pvt. Ltd., Kolkata, on development of silicon solar cells. CEGESS has also signed an agreement with SSN Institute, Chennai, an R&D institute of HCL Technology Ltd., for mutual scientific collaboration in the field of solar cells and DSSC cells.

- Department of Civil Engineering and Department of Metallurgy & Materials Engineering with Tata Steel, on examining the performance of steel fibres in concrete and for the development of high performance steel respectively.

- Department of Civil Engineering with ACC Cement Ltd., on investigation of concrete performance using different grades of cement.

I am happy to announce that the University has entered into an MoU with a major service industry for an industry led Innovation Programme - ICICI Trinity - a platform that fosters the spirit of innovation and encourages entrepreneurship among the students.
Blessings and Good Wishes to the Students

Before I conclude, I would call upon you - the recipients of degrees and distinction today, as you step out into the world, do not be content with the initial academic instruction that you have imbibed here. Always aim high and dream deep. As Michelangelo said, “The greatest danger for most of us is not that our aim is too high and we miss it, but that it is too low and we reach it”.

You are aware that, this University, erstwhile Bengal Engineering College, Shibpur, over its 157 years of gracious existence, has given so much to pre-independent and modern India by way of imparting successful education in Engineering. This Institute, over many years, has been a confluence of great erudite minds from across all strata of the society, as we see it here today. Our University today has started to grow beyond the known boundaries; and you, dear students passing out today, would be our most trusted lieutenants in this march ahead.

Here is a place, where nature with its enchanting glory and tender touch has manifested in abundance - a place that has provided you a perfect setting for the development of your innovative minds to face the extraordinary challenges that our globe faces today.

Remember that to the obscured millions in India, this place represents India’s urges, India’s aspirations and India’s hopes of building a strong self-reliant and prosperous nation.

May the years that you have spent here provide you with a treasure trove of memories from which you can forever draw your strength. Our blessings will always remain with you in your endeavour to build that happy and prosperous world of tomorrow.

I thank all of you present here for your kind attention.

Professor Ajoy Kumar Ray
Vice Chancellor
FIFTEENTH ANNUAL CONVOCATION
January 19, 2013

VICE CHANCELLOR’S ADDRESS

Professor Ajoy Kumar Ray