Prof. Gautam Biswas—the New Director of IIT Guwahati

Prof. Gautam Biswas, has taken over the charge as the Director of Indian Institute of Technology Guwahati on 6 September 2013. A Professor of Mechanical Engineering at the Indian Institute of Technology Kanpur, he was the Director of CSIR-CMERI (Central Mechanical Engineering Research Institute), Durgapur before joining IIT Guwahati.

Prof. Biswas was the occupant of GD and VM Mehta Endowed Chair of Mechanical Engineering at Indian Institute of Technology Kanpur. He became Professor of Indian Institute of Technology Kanpur in the year 1995.

Well known for his deep involvement in research, Prof. Biswas has worked in the areas of computational fluid mechanics and heat transfer. He has been involved in numerical modelling of convective transport, and conjugate problems in complex geometries. He has also developed techniques for handling free surface flows, bubble formation in film boiling, dynamics of falling drops and turbulent transport.

Prof. Biswas is Fellow of various prestigious and scholastic academies of national and international repute, such as, Indian National Science Academy (INSA), Indian Academy of Sciences, Bangalore (IAS), Indian National Academy of Engineering (INAE), National Academy of Sciences, India (NASI), and the American Society of Mechanical Engineers (ASME). He is also a Fellow of the Institution of Engineers, India.
Prof. Gautam Biswas is one of the Indian representatives at the International Union for Theoretical and Applied Mechanics (IUTAM). He delivered prestigious Prof. CNR Rao Lecture in 2010. In the year 2011, he was awarded the esteemed J.C. Bose National Fellowship by the Department of Science and Technology, Govt. of India.

Prof. Biswas has served a full term as the Associate Editor of the Journal of Heat Transfer (Transaction of the ASME). He is a member of the editorial board of two other international journals, namely, Progress in Computational Fluid Dynamics (Inderscience, Switzerland) and Computational Thermal Sciences (Begell House).

Prof. Biswas is the author of more than 150 technical publications, including more than 100 in the reputed SCI journals. Prof. Biswas has completed guidance of fifteen PhD theses and a few are under progress.

Prof. Biswas was founder Director of Academy of Scientific and Innovative Research (AcSIR), a novel initiative of CSIR in the area of Higher Education, from December 2010 to August 2013.

Techniche is famous for its Lecture Series, where eminent scientists, business wizards, artists, entrepreneurs, adventurers from around the world deliver lectures on their work, share their experiences and thus greatly inspire the students. This year too, people from diverse fields of knowledge participated in the event and shared their knowledge and experience with the participants. Among them were Jonathan Grudin—Principal Researcher at Microsoft Research in the fields of human-computer interaction (HCI) and computer-supported cooperative work (CSCW), and a pioneer of the field of CSCW and one of its most prolific contributors; Anil Kakodkar—nuclear scientist; Jayant Vishnu Narlikar—astrophysicist; Rosalind “Roz” Savage—English ocean rower, environmental advocate, writer and speaker who holds four Guinness World Records for ocean rowing, including first woman to row solo across the Atlantic, Pacific and Indian Oceans; Roger Hunter—Kepler Project Manager at NASA; Shekhar Gupta—Editor-in-Chief, The Indian Express; Pat Spain—National Geographic programme host; and Rakeysh Omprakash Mehra—filmmaker.

Techniche 2013 saw the successful organization of Industrial Conclave which provides an ideal platform for young entrepreneurs and budding corporates to broaden their horizons and understand the internal dynamics of the ever growing business industry. Stalwarts from the industry like Mohit Dubey—Co-Founder and CEO, CarWale.com; Arun Shourie—Illustrious journalist, author and politician; Meera Sanyal—former CEO and Chairperson of the Royal Bank of Scotland (RBS) India and social worker; Soumodip
Sarkar—noted economist; Dr. Pawan Agrawal—CEO, Mumbai Dabbawala Association and management guru;

Anuja Chauhan—well known author and former Executive Creative Director, J. Walter Thompson, a global advertising and marketing agency, took part and shared their experiences.

Techinche also presented a great opportunity to showcase students’ talent on different technical issues. Robotics competition was one such module which witnessed large participation from all over the nation.

Some of the other events of Techniche-2013 were Guwahati half marathon, and Technothlon – the international school olympiad, exhibitions by the Indian National Army, Indian Railways, DRDO, NDRF, philatelic associations, etc. and cultural nights.

Independence Day Celebrated

The 67th Independence Day of India was celebrated on 15 August 2013 in the Institute campus. The Director of the Institute, Prof. Gautam Barua, hoisted the tricolour and addressed the gathering. This was followed by colourful cultural programmes presented by the students of the Institute, Akshara School and children of the campus. Employees and students of the Institute and residents of the campus were present throughout the function.
Publications (Research Journal/Book/Book Chapter)

**Biotechnology**


**Chemical Engineering**


**Chemistry**


**Civil Engineering**


P. Sonowal, K. Dhamodharan, M. Khwairkpam, A. S. Kalamdhad, ‘Feasibility of vermicomposting of dewatered...
sludge from paper mill using perionyx excavatus,' European Journal of Environmental Sciences, 3 (1), 17-26, 2013

V. S. Varma and A. S. Kalamdhad, 'Composting of municipal solid waste (MSW) mixed with cattle manure,' International Journal of Environmental Sciences, 3 (6), 2068-2079, 2013


B. Sarma, A. K. Sarma and V. P. Singh, 'Optimal ecological management practices (EMPs) for minimising the impact of climate change and watershed degradation due to urbanisation,' Water Resource Management, 27, 4069-4082, 2013

Humanities and Social Sciences


Mechanical Engineering


Physics


Centre for Energy


New Research Projects

**Biology**

Title: Understanding the mechanism of substrate delivery through solute-binding proteins related to ABC transporters; **Funding Agency:** SERB; **Principal Investigator:** S. P. Kaunaujia

An investigation of the therapeutic potential of butein isolated from toxicodendron vernicifluum against human oral squamous carcinoma; **Funding Agency:** SERB; **Principal Investigator:** A. K. B. Kunnumakkara

**Chemical Engineering**

Ionic liquid assisted thermal dehydrogenation of ammonia borane; **Funding Agency:** SERB; **Principal Investigator:** T. Banerjee

Application of radiotracer techniques in design of circulating fluidized bed for higher production of propylene; **Funding Agency:** BRNS; **Principal Investigator:** A. Singh

Study of interaction between pneumatic spray nozzle and bubbling gas fluidized bed using radioactive particle tracking (RPT) and y-ray densitometry; **Funding Agency:** BRNS; **Principal Investigator:** P. Tiwari

Identification of competent alkali-surfactant-polymer formulations for enhanced oil recovery of Assam crude oil; **Funding Agency:** SERB; **Principal Investigator:** P. Tiwari

**Civil Engineering**

Design and development of intelligent catalytic nanobots; **Funding Agency:** SERB; **Principal Investigator:** D. Bandyopadhyay

**Mechanical Engineering**

Development of high performance computing tool for structure topology optimisation using multi-objective evolutionary algorithm; **Funding Agency:** SERB; **Principal Investigator:** D. Sharma

Improving productivity and product quality in machining of thin-walled components; **Funding Agency:** DST; **Principal Investigator:** S. K. Joshi

Nanofinishing of freedom surfaces using magnetorheological fluid based finishing process; **Funding Agency:** SERB; **Principal Investigator:** Manas Das

**Physics**

Innovation in science pursuit for inspired research; **Funding Agency:** SERB; **Principal Investigator:** S. Bhattacharya

Centre for Energy

Investigating the effect of co-digestion and advance sludge pretreatment methods on the anaerobic conversion potential of the organic waste (RGY); **Funding Agency:** DBT; **Principal Investigator:** V. V. Goud

Rural hybrid energy-enterprise system; **Funding Agency:** DST; **Principal Investigator:** P. Mahanta

Optoelectronic and transport studies on thin silicon films (nc-Si and nc-Si/a-Si:H superlattice) and solar cells; **Funding Agency:** CSIR; **Principal Investigator:** P. Agarwal

Awards and Honours

**Mr. Mohit Chhajed**, BTech, first year, Computer Science and Engineering, won Aditya Birla Scholarship for the year 2013. The prestigious Aditya Birla Scholarships cover a large part of academic fees as well as the hostel fees for the IITs and other institutions. Mohit is the first student to win this scholarship from IIT Guwahati.

**Dr. Pankaj Biswas**, Assistant Professor, Mechanical Engineering, won the IEI Young Engineers Award 2013-2014.

**Dr. K. S. R. K. Murthy**, Associate Professor, Mechanical Engineering, was awarded outstanding reviewer of *Engineering Fracture Mechanics Journal*, for 2012-2013.

**Dr. Biman B. Mandal**, Assistant Professor, Biotechnology, has been selected for NASI-Young Scientist Platinum Jubilee Award (2013), by the National Academy of Sciences, India; and received INSPIRE faculty award (Innovation in Science Pursuit for Inspired Research) by DST, Govt. of India, worth 35 lakhs for conducting research on ‘Bio-artificial Pancreas’.

**Mr. Naveen Kumar** and Dr. Arindam Dey received the best paper and presentation award at the North-East Students GeoCongress on Advances in Civil Engineering held at Assam Engineering College on 28 September 2013. Mr. Naveen Kumar, MTech, second year, Civil Engineering, presented the paper.

**Mr. K. Dhamodharan** and Mr. V. Sudharsan Varma, research scholar, Civil Engineering, won best paper awards at International Conference on Technologies for Sustainable Waste Management in Developing Countries, 23-14 August 2013, Vignan University, Guntur. Both of them are doing...
Hindi Divas Celebrated

IIT Guwahati observed Hindi Fortnight during 1-15 September 2013. Various competitions like art competition, Hindi poetry recitation competition, Hindi extempore speech competition, Hindi essay writing competition for children, Hindi essay writing competition for students and staff and group discussion for students were organised during this period.

Hindi Divas 2013 was celebrated with great enthusiasm with campus children, students and staff participating in the programme. Prof. Gautam Biswas, Director, IIT Guwahati, graced the occasion as the Chief Guest. Prof. S. Nandi, Deputy Director and Dr. B. N. Raychoudhury, Registrar, IIT Guwahati, were also present on the occasion.

The Hindi Divas programme began with lighting of the auspicious lamp by the Director, who was accompanied by the Deputy Director, the Registrar and the Chairman of the Official Language Implementation Committee, IIT Guwahati, Prof. Gautam Biswas inaugurating the Hindi Divas in the presence of Prof. S. Nandi, Dr. B. N. Raychoudhury and Prof. Rajen K. Sinha.

Rajen K. Sinha. Prizes were awarded by the Chief Guest to the winners of the various competitions held during the Hindi Fortnight. A cultural programme was also organised in which campus children, and IIT Guwahati students participated.

STC on Optoelectronics and Optical Communication

A QIP short-term course on Optoelectronics and Optical Communication was organised during 16-20 September 2013. Teachers from various technical institutes across the country took part in the programme. It was coordinated by Dr. Ramesh Kumar Sonkar, EEE and Dr. T. Venkatesh, CSE.

New Joinings

- S. P. Biswas, Asst. Professor (Chemistry)
- A. B. Shelke, Asst. Professor (Civil Engineering)
- S. Banerjee, Asst. Professor (Design)
- S. Sundaram, Asst. Professor (Electron. and Elec. Eng.)
- P. Kumari, Asst. Professor (Mechanical Eng.)
- S. K. Chakrabarti, Asst. Professor (Physics)
### PhDs Completed During July–September 2013

<table>
<thead>
<tr>
<th>Department/Centre</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>2</td>
</tr>
<tr>
<td>Electronics and Electrical Engineering</td>
<td>2</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Centre for Nanotechnology</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

### Total Number of Students on Campus as on September 2013

<table>
<thead>
<tr>
<th>Programme</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparatory</td>
<td>4</td>
</tr>
<tr>
<td>BTech/BDes</td>
<td>2503</td>
</tr>
<tr>
<td>MSc</td>
<td>243</td>
</tr>
<tr>
<td>MA</td>
<td>48</td>
</tr>
<tr>
<td>MTech/MDes</td>
<td>771</td>
</tr>
<tr>
<td>PhD</td>
<td>1224</td>
</tr>
<tr>
<td>Dual (MTech + PhD)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4803</strong></td>
</tr>
</tbody>
</table>

### Students Admitted for the Academic Session 2013-1014 in July 2013

The new academic session (2013-2014) commenced from July 2013. A total number of **1425** students were admitted in various programmes across all the Departments/Centres as given in the table below –

<table>
<thead>
<tr>
<th>Department/Centre</th>
<th>BTech/BDes</th>
<th>MSc/MA</th>
<th>MTech/MDes</th>
<th>PhD</th>
<th>Dual Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology</td>
<td>50</td>
<td>–</td>
<td>31</td>
<td>23</td>
<td>–</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>67</td>
<td>–</td>
<td>43</td>
<td>31</td>
<td>–</td>
</tr>
<tr>
<td>Chemistry</td>
<td>45</td>
<td>42</td>
<td>–</td>
<td>38</td>
<td>–</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>80</td>
<td>–</td>
<td>85</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>Computer Science and Engineering</td>
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<td>45</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Design</td>
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<td>–</td>
<td>27</td>
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<td>–</td>
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<tr>
<td>Electronics and Communication Engineering</td>
<td>74</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Electronics and Electrical Engineering</td>
<td>42</td>
<td>–</td>
<td>56</td>
<td>17</td>
<td>–</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>–</td>
<td>26</td>
<td>–</td>
<td>11</td>
<td>–</td>
</tr>
<tr>
<td>Mathematics</td>
<td>43</td>
<td>43</td>
<td>–</td>
<td>10</td>
<td>–</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>80</td>
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<td>90</td>
<td>24</td>
<td>–</td>
</tr>
<tr>
<td>Physics</td>
<td>44</td>
<td>41</td>
<td>–</td>
<td>23</td>
<td>–</td>
</tr>
<tr>
<td>Centre for Energy</td>
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<td>–</td>
<td>–</td>
<td>6</td>
<td>–</td>
</tr>
<tr>
<td>Centre for the Environment</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Centre for Nanotechnology</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>7</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>647</strong></td>
<td><strong>152</strong></td>
<td><strong>377</strong></td>
<td><strong>241</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**Note:** In addition, 4 students in the Preparatory Programme were also admitted.