IIT Guwahati organised the annual techno-management festival – Techniche – during 30 August – 2 September 2012. Started with the slogan – pixelating perfection – the fourteenth edition of the Techniche had set the goal to understand the essence of perfection — the perseverance and impeccable precision behind every innovation, design, product or strategy that inspires awe.

Techniche 2012

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 IIT Guwahati community. Among them were Dr. R. Chidambaram, nuclear scientist and the principal scientific adviser to the Government of India; Dr. Samuel R. Chand, former Pastor, college President, Chancellor and now President Emeritus of Beulah Heights University; Rashmi Bansal, author of four bestselling books on entrepreneurship including Stay Hungry Stay Foolish; George Kourounis, adventurer, television presenter, storm chaser, and explorer, known for his television series Angry Planet; Prabhu Chawla, Editorial Director of The New Indian Express Group and host of talk shows...
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-2012 were Panel Discussion with Venture Capitalists, Discovery Myth Busters, quizzes, Guwahati half marathon, and Technothlon – the international school olympiad, Exhibitions by Railways, Air-Force, Indian Institute of Robotics, Guwahati Meteorological Department, Numismatic Society of Kolkata, Delhi Philatelists and cultural nights.

INUP Familiarisation Workshop on Nanofabrication Technologies

IIT Guwahati organised a two day INUP Familiarisation Workshop especially for the North East on the topic “Nanofabrication Technologies” during 28-29 September 2012 in collaboration with INUP at IISc Bangalore and IIT Bombay. Indian Nanoelectronics Users Program (INUP) is an activity jointly run by the Centres of Excellence in Nanoelectronics (CEN) at IIT Bombay and IISc Bangalore. It is an initiative to create and spread the expertise of Nanoelectronics in the country. INUP is supported by Ministry of Communications and Information Technology (MCIT), Government of India.

The workshop was inaugurated by Prof. Gautam Barua, Director, IIT Guwahati. In the inaugural address, Prof. Barua, emphasised the importance of Nano-electronics initiatives in the North East and elsewhere in India. The workshop was attended by around 150 teachers and researchers of various technological institutes of the North East. Four professors from IISC Bangalore, delivered lectures on topics like MEMS Sensors (Prof. Rudra Pratap), Microfluidics (Prof. V. Venkatraman), Thin Film growth (Prof. S. Raghavan) and Microsystems fabrication (Dr. K. J. Vinoy). Three professors from IIT Bombay delivered lectures on topics like Sensors (Prof. Ramgopal Rao), III-V Semiconductors (Dr. Deepankar Saha) and Login/Memory technologies (Dr. Saurabh Lodha).

Three professors from IIT Guwahati delivered lectures on topics like Magnetic Structures/Devices (Prof. A. Srinivasan) and Surface Acoustic Wave Devices and Applications (Dr. Harshal Nemade and Prof. Roy Paily). Dr. G. V. Ramaraju, Head of Nano-Technology Initiatives division, Department of Electronics and Information Technology (DeitY), concluded the workshop with a brainstorming session by encouraging the submission of project proposals from North East and subsequently, most of the participants have expressed their keen interest in applying to INUP.

The workshop was sponsored by INUP at IISc Bangalore and coordinated by Dr. S. K. Shirvastava, IISc Bangalore and Prof. Roy P. Paily, Electronics and Electrical Engineering, IIT Guwahati.
Seraj Ahmad and Pranab Goswami, “Enhanced production of cell-bound cholesterol oxidase from Rhodococcus sp. NCIM 2891 by the statistical method”, *Annals of Microbiology*, 2012 (DOI: 10.1007/s13213-012-0461-4)

Ankana Kakoti, Adepu Kiran Kumar and Pranab Goswami, “Microsome-bound alcohol oxidase catalysed production of carbonyl compounds from alcohol substrates”, *Journal of Molecular Catalysis B: Enzymatic*, 78, pp. 98-104, 2012


Anil K. Shukla, Sanjukta Patra and Vikash Kumar Dubey, “PEGylated nanospheres encapsulating antileishmanial drugs for their specific macrophage targeting, reduced toxicity and deliberate intracellular release”, *Vector-Borne and Zoonotic Diseases*, 2012 (DOI:10.1089/vbz.2011.0948)

Manjeet Kumar, Nandini Sarkar and Vikash Kumar Dubey, “Evaluating quinacrine as a potential amyloid imaging compound: studies on hen egg white lysozyme as model system”, *Protein and Peptide Letters*, 19 (8), pp. 826-831, 2012


Bimlesh Kumar, “Priming methods for siphon”, *Journal of Indian Water works Association*, pp. 143-148, April-June 2012


Design


Electronics and Electrical Engineering

Dharmendra Dixit and P. R. Sahu, “Performance of L-Branch MRC Receiver in $\eta$-$\mu$ and $\kappa$-$\mu$ Fading Channels for QAM Signals”, *IEEE Wireless Communication Letters*, 1 (4), pp. 316-319, August 2012

Humanities and Social Sciences


Merry Baruah Bora and Liza Das, “Quest for Identity: A Reading of Shashi Deshpande's *Small Remedies*”, *Negotiations*, 2, pp. 24-29, 2012


S. Mahanta, “Chain shifts, Feature Distance and Contrast Preservation”, *The EFL Journal* (Special issue on Optimality Theory), 3.2, pp. 41-64, 2012

Mechanical Engineering


Physics

Soumen Dhara and P. K. Giri, “Ultrafast Photoresponse from...


Centre for Energy

(The above work was featured in Nature India website—DOI:10.1038/india.2012.142—on 26 September 2012)

P. Mazumdar, V. B. Borugadda, V. V. Goud and L. Sahoo, “Physico-chemical characteristics of Jatropha curcas L. of North East India for exploration of biodiesel”, Biomass and Bioenergy, 2012 (DOI: 10.1016/j.biombioe.2012.07.005)


Awards and Honours

Prof. Subhash C. Mishra, Mechanical Engineering, has been elected a Fellow of American Society of Mechanical Engineers (ASME).

Dr. P. Muthukumar, Associate Professor, Mechanical Engineering, visited Institute of Nuclear Technology and Energy Systems, University of Stuttgart, Germany, during 10-30 July 2012 under DAAD fellowship.

Prof. P. K. Giri, Physics, was awarded the Japanese Society for Promotion of Science (JSPS) Invitation Fellowship for Research (long-term) in Japan.

The research paper “Automatic Facial Expression Recognition using Extended AR-LBP” by C. L. Shrinivasa Naika, Dr. Pradip K. Das, Associate Professor, Prof. Shivashankar B. Nair, Computer Science and Engineering received the best paper award at the Sixth International Conference on Information Processing (ICIP-2012).

Jashmini Deka, a research associate in the department of Chemistry, has been selected for the ‘DST INSPIRE Faculty Award 2012’. The ‘INSPIRE Faculty Scheme’ offers a contractual research award for carrying out independent research to young achievers for a period of five years.

Raihana Begum, a research student, department of Chemistry, has received ‘MRSI Young Scientists’ Award 2012’ at ‘Young Scientists’ Colloquium 2012’. This was organised by Materials Research Society of India (MRSI) Kolkata Chapter, on 8 August 2012, at Central Glass and Ceramic Research Institute (CGCRI), Kolkata.

Soumen Dhara, research student, department of Physics, was awarded the Japanese Society for Promotion of Science (JSPS) postdoctoral fellowship 2012.

Swati Khanna, research student, Centre for Energy, nominated and selected for the Indo-US Symposium on Women Engineers Leading Global Innovations held at Taj Vivanta, Bangalore during 29-31 August 2012.

The IIT Guwahati students team (Tushar Krishnan, Vineel Kambala, Vivek Gunawat) won the National Finals of the MISB Bocconi Business Quiz. The winners won a trip to Milan, Italy.

NIF–India Partnership Award

Prof. Gautam Barua with the NIF–India Partnership Award along with Prof. S. K. Kakoty, Chairman, Advisory Board of NIF Cell (L) and Mr. K. Kalita, In-Charge of NIF, Assam Cell (R)

IIT Guwahati received Partnership Award from National Innovation Foundation–India (NIF–India) for mentoring and value addition support. The National Innovation Foundation–India (NIF), started functioning in March 2000 as India’s national initiative to strengthen the grassroots technological innovations and outstanding traditional knowledge. NIF–India set up its cell at IIT Guwahati in 2002 as GIAN NE, renamed as National Innovation Foundation Assam Cell. Since its inception IIT Guwahati has provided continuous support (infrastructural, mentoring and value addition) to the cell.
New Research Projects

**Biotechnology**
Title: Studies on structure of enzymes and their interaction with nanostructured materials for bioelectronics devices and other applications; Sponsor: DBT; Principal Investigator: Prof. Pranab Goswami
Title: X-ray crystallographic structure elucidation of key drug target enzymes of *Leishmania donovani*; Sponsor: DBT; Principal Investigator: Dr. Vikash Kumar Dubey

**Chemical Engineering**
Title: New Generation Degradable Thermoset Resins and Structural Composite “Bio-Thermoset”; Sponsor: DST; Principal Investigator: Dr. Vimal Katiyar

**Chemistry**
Title: Development of Water Oxidation Catalysts, Single-Molecule Magnets (SMMs), and Magnetic Resonance Imaging (MRI) Contrast Agents, Employing a Common Backbone; Sponsor: DST; Principal Investigator: Dr. Chandan Mukherjee
Title: Synthesis of Sensitisers for Dye Sensitised Solar Cell; Sponsor: BRNS; Principal Investigator: Dr. Chandan Mukherjee

**Mechanical Engineering**
Title: Developing light weight, durable and user friendly artificial limbs through Nanotechnology-based modification of conventional materials and optimising mechanical component design for enhancing their functional performance; Sponsor: DBT; Principal Investigator: Dr. S. Kanagraj
Title: Development of Copper (Cu) – Carbon Nanomaterial (CN) based nanocomposite formulations for heat recovery in different processes in a steel plant; Sponsor: Ministry of Steel, Government of India and M/s Tata Steel, Jamshedpur; Principal Investigator: Dr. S. Kanagraj

**Energy**
Title: A novel energy efficient hydrodynamic cavitations technique for extraction of oil from micro algae for biodiesel production; Sponsor: CSIR; Principal Investigator: Dr. V. V. Goud

**New Joinings**

A team from University of Nottingham, UK, headed by Prof. Michele Clarke visited Department of Mechanical Engineering and Centre for Energy, IIT Guwahati during July 2012 for discussion and evaluation of ongoing collaborative research at IIT Guwahati.
Hindi Divas Celebrated

IIT Guwahati observed Hindi Fortnight during 1–15 October 2012. Competitions for students, employees and children were organised during this period. Hindi Divas was celebrated on 14 September 2012. The event was attended by faculty members, staff and students of the Institute. Prof. Sukumar Nandi, Deputy Director, IIT Guwahati, adorned the Chair of the Chief Guest. Prizes were distributed to the winners of the various competitions which was followed by a cultural programme where students and children of the campus enthralled the audience with their performances.

Independence Day Celebrated

The 66th Independence Day of India was celebrated on 15 August 2012 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, IIT Guwahati Kendriya Vidyalaya and Akshara School and children of the campus. Employees and students of the Institute and residents of the campus were present throughout the function.
The new academic session (2012-2013) commenced from July 2012. A total number of 1461 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>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology</td>
<td>51</td>
<td>–</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>66</td>
<td>–</td>
<td>55</td>
<td>25</td>
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<tr>
<td>Chemistry</td>
<td>44</td>
<td>39</td>
<td>–</td>
<td>39</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>79</td>
<td>–</td>
<td>90</td>
<td>30</td>
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<tr>
<td>Computer Science and Engineering</td>
<td>80</td>
<td>–</td>
<td>56</td>
<td>4</td>
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<tr>
<td>Design</td>
<td>46</td>
<td>–</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Electronics and Communication Engineering</td>
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<tr>
<td>Electronics and Electrical Engineering</td>
<td>42</td>
<td>–</td>
<td>57</td>
<td>13</td>
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<tr>
<td>Humanities and Social Sciences</td>
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<td>26</td>
<td>–</td>
<td>10</td>
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<tr>
<td>Mathematics</td>
<td>45</td>
<td>48</td>
<td>–</td>
<td>12</td>
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<tr>
<td>Mechanical Engineering</td>
<td>80</td>
<td>–</td>
<td>91</td>
<td>38</td>
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<tr>
<td>Physics</td>
<td>40</td>
<td>38</td>
<td>–</td>
<td>25</td>
</tr>
<tr>
<td>Centre for Energy</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>7</td>
</tr>
<tr>
<td>Centre for the Environment</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>Centre for Nanotechnology</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>645</strong></td>
<td><strong>151</strong></td>
<td><strong>409</strong></td>
<td><strong>246</strong></td>
</tr>
</tbody>
</table>

Note: In addition, 3 students in Computer Science and Engineering MTech + PhD Dual Degree programme and 7 students in the Preparatory programme were also admitted.