The Indian Institute of Technology Guwahati has been awarded 5th position at the ‘Swachhta Ranking 2017’ under the category of government institutions. An award ceremony based on ‘SWACHHTA’ Ranking 2017 of Higher Educational Institutions was held in New Delhi. Union Human Resource Development Minister, Shri Prakash Javadekar gave away the prizes.

About 3500 institutions participated in the Ranking process, out of which only 174 institutions were shortlisted across four categories, viz., Universities, Technical Institutions, Colleges and Government institutions. 25 out of the 174 shortlisted higher education institutes have been selected for the top rankings.

Institutions were judged on the basis of a number of parameters of cleanliness like student / toilet ratio, kitchen hygiene, availability of running water, modernity of toilet & kitchen equipment, campus green cover, garbage disposal in hostels and academic buildings, disposal techniques, water supply systems and also a certain weightage to whether the institutions have adopted any neighboring locality or village to spread awareness & activities in Swachhta.

Prof. P. Robi, Dy. Director, IIT Guwahati and Prof. P. K. Iyer, Prof. In-Charge, Peer Review & Institutional Ranking, IIT Guwahati, received the award on behalf of the Institute.
Conference / Seminar Abroad

BSBE

Dr. Rajaram Swaminathan, Professor attended the 19th IUPAB Congress and 11th EBSA Congress at Edinburgh, United Kingdom from 16.07.17 to 20.07.17.

Dr. Bithiah Grace Jaganathan, Associate Professor attended the 2nd Asia Pacific Droplet Digital PCR Symposium at Seoul, South Korea from 04.09.17 to 05.09.17.

Chemical

Dr. Animes Kumar Golder, Associate Professor attended the 10th World Congress on Water Resources and Environment, ‘Panta Rhei’ conference at National Technical University of Athens, Greece from 05.07.17 to 09.07.17.

Dr. Chandan Das, Associate Professor attended the 10th World Congress on Water Resources and Environment, ‘Panta Rhei’ conference at National Technical University of Athens, Greece from 05.07.17 to 09.07.17.

Dr. Manish Kumar Goyal, Assistant Professor attended the 10th World Congress on Water Resources and Environment, ‘Panta Rhei’ conference at National Technical University of Athens, Greece from 05.07.17 to 09.07.17.

Dr. Rajesh Kumar Upadhyay, Associate Professor attended the 10th International Symposium on Catalysis in Multiphase Reactors (CAMURE-10) and 9th International Symposium on Multifunctional reactors (ISMR - 9) at Huanghai Hotel in Qingdao, China from 07.07.17 to 10.07.17.

Dr. Tamal Banerjee, Professor attended the 10th Liquid Matter conference at Ljubljiana, Slovenia from 17.07.17 to 21.07.17.

Dr. Dipankar Bandopadhyay, Associate Professor attended the Advanced Fluid Mechanics: Theoretical and Numerical Modeling, Experimental Approaches at University of Bordeaux, France from 11.09.17 to 13.09.17.

Chemistry

Dr. Ashish Kumar Gupta, Professor attended the Advances in Theory of Electronic Resonances conference at Telluride CO, USA from 17.07.17 to 21.07.17 and Research work at University of California, Los Angeles, USA from 23.07.17 to 31.07.17.

Dr. Jubaraj Bikash Baruah, Professor attended the 17th Asian Chemical Congress at Melbourne, Australia from 23.07.17 to 28.07.17.

Dr. Manabendra Sarma, Associate Professor attended the 4th International Conference on Physical and Theoretical Chemistry at Crowne Plaza Dublin Airport Hotel, Dublin, Ireland from 18.09.17 to 19.09.17.

Civil

Dr. Arup Kr. Sarma, Professor attended the Water and the Neighborhood at Bangkok, Thailand from 21.08.17 to 23.08.17.

Dr. Budhaditya Hazra, Assistant Professor attended the International Conference on Structural Dynamics (EURODYN 2017) at Rome, Italy from 10.09.17 to 13.09.17.

Computer Science

Dr. Rashmi Dutta Baruah, Assistant Professor attended the IEEE International Conference on Fuzzy Systems 2017 at Naples, Italy from 09.07.17 to 12.07.17.

Dr. Pradip Kumar Das, Professor attended the International Conference on Watermarking and Image Processing (ICWIP 2017) at Paris, France from 06.09.17 to 08.09.17.

Design

Dr. Sougata Karmakar, Associate Professor attended the 8th International Conference on Applied Human Factors and Ergonomics 2017 at Westin Bonaventure Hotel, California, USA from 17.07.17 to 21.07.17.
Dr. Urmi Ravindra Salve, Assistant Professor attended the 8th International Conference on Applied Human Factors and Ergonomics 2017 at Westin Bonaventure Hotel, California, USA from 17.07.17 to 21.07.17.

Electronics
Dr. Srinivasan Krishnaswamy, Assistant Professor attended the 20th World Congress of the International Federation of Automatic Control(IFAC) at Toulouse, France from 09.07.17 to 14.07.17.

Dr. Mahima Arrawatia, Assistant Professor attended the 2017 IEEE International Symposium on Antennas and Propagation and USNC-USRI Radio Science Meeting AP-S/URSI 2017 at San Diego, California, USA from 09.07.17 to 14.07.17.

Dr. Praveen Kumar, Associate Professor attended the 2017 IEEE PES General Meeting at Chicago, USA from 16.07.17 to 20.07.17.

Dr. P. K. Bora, Professor attended the 4th International Conference on Advances in Electrical Engineering 2017 at Dhaka, Bangladesh from 28.09.17 to 30.09.17.

Humanities
Dr. Bodhisattva Sengupta, Associate Professor attended the 18th meeting of the Association for Public Economic Theory (PET 2017 - PARIS) at Université Panthéon – Assas Paris II, France from 10.07.17 to 13.07.17.

Dr. Priyankoo Sarmah, Associate Professor attended the Interspeach 2017 at Stockholm, Sweden from 20.08.17 to 24.08.17.

Dr. Anamika Barua, Associate Professor attended the Brahmaputra meets Mekong: Media Workshop at Bangkok, Thailand from 21.08.17 to 23.08.17.

Dr. Daksha Chandu Parmar, Assistant Professor attended the Disciplining Reproduction in Modern South Asia: The Emergency and Beyond at United Kingdom from 04.09.17 to 05.09.17.

Mathematics
Dr. Ayon Ganguly, Assistant Professor attended the 10th International Conference on Mathematical Methods in Reliability (MMR 2017) at INP-ENSE3, GreEn – ER, Grenoble, France from 03.07.17 to 06.07.17.

Dr. Rupam Barman, Associate Professor 30th Journee's Arithmetiques 2017 at Universite de Caen, France from 03.07.17 to 07.07.17.

Dr. Shreemayee Bora, Associate Professor attended the Foundations of Computational Mathematics (FOCM) at University of Barcelona, Spain from 10.07.17 to 19.07.17.

Dr. Pratyoosh Kumar, Assistant Professor attended the Analysis and Applications at Wroclaw, Poland from 04.09.17 08.09.17.

Mechanical
Dr. Pranab Kumar Mondal, Assistant Professor attended the International Conference on Thermal and Fluid Engineering Thailand 2017 at Bangkok, Thailand from 03.07.17 to 05.07.17.

Dr. Poonam Kumari, Assistant Professor attended the 25th International Conference on Composites / Nano Engineering (ICCE-25) at Rome, Italy from 16.07.17 to 22.07.17.

Dr. Mamilla Ravi Sankar, Assistant Professor attended the 2017 2nd International Conference on advanced Materials Research and Manufacturing Technologies (AMRMT 2017) at Phuket, Thailand from 02.08.17 to 05.08.17.
Dr. Karuna Kalita, Associate Professor attended the Journal of Structural Mechanics 50 Years anniversary seminar (RM50) at Finland from 24.08.17 to 25.08.17.

Dr. Pranab Kumar Mandal, Assistant Professor attended the Advanced Fluid Mechanics: Theoretical and Numerical Modeling, Experimental Approaches at University of Bordeaux, France from 11.09.17 to 13.09.17.

Physics
Dr. Arunansu Sil, Associate Professor attended the 13th International Workshop on the Dark side of the Universe 2017 (DSU 2017) at Daejeon, South Korea from 10.07.17 to 14.07.17.

Dr. Perumal Alagarsamy, Professor attended the Collaborative Research work at National Institute for Materials Science (NIMS), Japan from 31.07.17 to 06.08.17 and also attended “The magnetic Recording Conference (TMRC 2017)” at Tsukuba, Japan from 02.08.17 to 04.08.17.

Dr. Sovan Chakraborty, Assistant Professor attended a Research collaboration meeting at Max Planck Institute for Physics (MPP), Munich, Germany from 25.09.17 to 07.10.17 and attended the Supernova Neutrino Observation workshop at Mainz Institute for Theoretical Physics, Johannes Gutenberg University, Germany from 09.10.17 to 13.10.17.

ICSIMR 2017

The Conference on Sophisticated Instruments in Modern Research (ICSIMR 2017) was organized at IIT Guwahati. The first of its kind conference was organized jointly by Indian Institute of Technology Guwahati, Institute of Advance Study in Science and Technology, Tezpur University, Gauhati University and North Eastern Hill University. The conference ended on 1 July 2017.
## Students Statistics

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## PhD Completed during July- September 2017

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As a part of its 19th Edition, Techniche – IIT Guwahati organized its 9th edition of Guwahati Half Marathon, a running event organized to promote a better social and human interaction amongst the residents in and around Guwahati.

One of the largest events of its kind organized by a student body, the Marathon has evolved coherently over the years since its inception in 2009 to become the largest half Marathon in North East India. The marathon was initiated to provide a platform for people from different walks of life to come and spread their cognizance and sense of concern for a better society. The 9th edition of the marathon was successfully organized on 27th August 2017 with its theme “Run for awareness of Organ Donation – Live Life Give Life”.

The Guwahati Half Marathon ’17 with its theme “Organ Donation” appealed people to be a part of the change which was for the prosperity of society. It appealed to the people to become more responsible towards the issues of society like poverty, illiteracy, hunger, lack of development, inflation amongst others. Guwahati Half Marathon’16 gave everyone a platform to think about these issues and brought a little bit of change in the perception of the general public.

Professional footballer Durga Boro who was the lead striker for Northeast United FC in the first season of ISL was the Chief Guest of the marathon. Mr. Abu Nechim, Bowler from Royal Challengers Banaglore Team was the Guest of Honor and Mr. Bharat Nayak, Editorial Director and Co-founder of The Logical Indian was the Special Guest of the Marathon.

Keeping in mind the huge participation observed from various walks of life, the Guwahati Half Marathon had been conducted as four events:

Glory Run- The flagship race of the half marathon, it was a 21-km race which was meant mainly to quench professional runners’ thirst. Participants from all around India participated in this category.

Spirit Run- It was a 6km race specially designed for the citizens of Guwahati. All age groups were participated in this event which encouraged all citizens to come together and run a race for the cause of their society.

General Championship-This was an event exclusive for schools and colleges, where they battle was out for that one trophy of the General Championship.
IIT Guwahati witnessed the kick start of its 19th edition of annual techno management festival Techniche on 31st August 2017 at the Bhupen Hazarika auditorium. The chief guest of inauguration ceremony was Air Commodore Shashank Mishra, Air Force Station Borjhar, Guwahati. The session started with a lamp lighting ceremony by Dean of Student Affairs, Prof. Chandan Mahanta and AOC, Borjhar.

The Keynote lecture was delivered by Brooks Moore, host of ‘How It’s Made’—his interests in piano, photography, horses and his experiences of being in Radio and Television Stations. All in all a charming, optimistic personality who captivated the audience till the time he was on the stage. The night ended with a stunning solo performance by Artist Dhruv Vishwanath who is one among the Top 30 ‘under 30’ Guitarists. He performed some of his own composed tracks with relatable lyrics in his own voice and entertained the audience.

1st September 2017 witnessed various programmes like TechExpo, Technotlon, Workshops and Robotics Module. The crowd witnessed formal landing of an Air Force Chopper which marked the inception of the Air Force Exhibition. In the Lecture Series, a keynote lecture was delivered by Dr. Nadrian Seeman, a famous American chemist and Crystallographer and well known as Father of DNA Nanotechnology. The event was followed by another keynote by Dr. Subramanian Swamy, Member of Rajya Sabha, Harvard Associate Professor and a famous Economist. The lecture witnessed a huge crowd with people from various parts of the North East and other parts of the country. Apart from keynotes, Techniche witnessed huge crowd in Exhibitions, Fun events, Workshops and all other competitions. As part of ‘After the Sunset’ event, the night concluded with a hilarious comedy show by Mr. Sahil Shah, co-founder of East India Comedy. Sahil is a famous standup comedian and was welcomed in a very cheerful way by an amazing crowd.

2nd September started with another round of judging of Tech Expo by Mr. Brooks Moore from Discovery Channel and Dr. Thomas Barclay, Research Scientist from NASA. Unique projects were demonstrated by school students like ‘Goggles for the Blind’, ‘Voice Controlled Car’, etc. Also first slot of workshops including Ethical Hacking, Sixth Sense
Robotics, etc. were concluded and amazing feedbacks were received from the participants.

As a part of Lecture Series, Mike Morasky, VFX designer of 'Lord Of The Rings', 'The Matrix', 'Pirates Of The Caribbean Saga', etc. and Music Composer in CSGO gave his keynote. Later, a video keynote by Shri Suresh Prabhu, Honorable Railway Minister was played to the audience wherein he spoke about ‘How Ideas are important to bring big changes to life’ and about how just these ideas won’t be sufficient to taste success but efficient implementation would surely.

Moving on, as a part of ‘After the Sunset’ the crowd witnessed a mesmerizing performance by ‘The Animation Crew’ from South Korea. Perfect alignment, dance composing, extraordinary stunts and colourful animation were few elements which made the show amazing.

Day 3 started off with the final rounds of Technothlon, Tech Expo and other events including TechOlympics and Robotics. The final winners of Technothlon were announced who will be awarded a fully funded trip to NASA, USA this year.

The two teams were—
Rohan Kishore and Ayush Sharan, Hauts Squad from Bangalore
Aadish Jain and Mradul Agarwal, Juniors Squad from Jaipur

Dr. Thomas Barclay, Research Scientist from NASA gave his keynote as a part of Lecture Series. His speech included the details of various projects planned by NASA to find an exo-planet in space and discover Alien Life.

The last event of Techniche was a performance by Naalayak – The Band who entertained the audience to the fullest with their amazing songs and most relatable lyrics. Techniche ended with felicitation of all performers and a thanking
Mr. Asif Raza, Dept. of BSBE, was awarded fellowship to attend a workshop on EMBO Practical Course: Current Methods in Cell Biology by the EMBL Heidelberg, Germany from 11 to 19 September 2017.

Mr. Abshar Hasan, PhD research scholar at the BSBE Department, has been provisionally selected by the Commonwealth Scholarship Commission in the UK for a Commonwealth Split Site Scholarship, tenable at University of Strathclyde for studies in Materials Science.

Mr. Chirag Gupta, a BTech student (2017 batch) in the Department of Computer Science and Engineering of IIT Guwahati has been chosen as the prestigious Aditya Birla Scholar – Class of 2017-18.

Ms. Sonia, Dept. of CSE was the winner of Hackathon organized by the IEEE International Conference on Systems, Man and Cybernetics, SMC, Banff, Canada held from 5 - 8 October 2017. A Cash Award of 1000 USD was awarded to each member of the seven member team.


Designer M. P. Rijas and Faculty Supradip Das’s design work had been selected in the Global Grad Show Dubai Design Week. Both of them are invited to showcase the furniture design project and they will be showcasing the furniture design in the Global grad show along with projects from the prestigious institutions like Royal College of Art, Rhode Island School of Design, Nanyang Technological University and many more in November 2017.

Mr. Anmol Srivastava Dept. of Design, received the ACM SIGCHI Travel Scholarship to attend 50th Turing Award Ceremony from the Association of Computing Machinery - ACM SIGCHI.

Ms Jyoti Kainthola, Centre for the Environment received the ISWA-SWIS Winter School 2018 Scholarship from the University of Texas at Arlington, USA.

Ms. Payal Mazumder, Centre for the Environment received the ISWA-SWIS Winter School 2018 Scholarship from the University of Texas at Arlington, USA.

Teaching methods and curriculum design innovations evolved at the UE-HCI lab since 2002-03 by Prof. Pradeep Yammiyavar have been recognized and conferred the “Teaching Innovator award – 2016” by the MHRD-GOI- under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching.

This honor is in recognition of over three decades of academic contribution by Prof. Pradeep Yammiyavar in establishing creative Design as a multidisciplinary cum interdisciplinary knowledge domain in higher technical institutions like IISc and IITG through an innovative curriculum framework – D.S.T.E.A.M.

The philosophy behind this innovative framework evolved from research areas of Interaction Design, HCI and Usability Engineering carried out at India’s pioneering Useability Engineering Human Computer Interaction design Laboratory at the Department of Design. This novel Curriculum structure and pedagogy initiated in 2003 has played a unique and significant role in the success of the academic programs of the Department of Design at IITG. It has trained and placed hundreds of pioneering first time Design Innovation Leaders for the creative Design- ICT Industry worldwide. It has contributed to DoDs reputation as one of India’s best Design Schools.
| BSBE | **Title**: Enhancing microalgal biomass productivity at higher CO2 concentrations and simultaneous carbon precipitation as mineral carbonates.  
**Funding Agency**: SERB.  
**Principal Investigator**: Dr. Dineshbabu Gnanasekaran; Mentor: Dr. Debasis Das. |
| --- |
| **Title**: Characterization of predicted novel extracellular proteins of pathogenic Leptospira interrogans  
**Funding Agency**: ICMR  
**Principal Investigator**: Dr. Manish Kumar |
| Chemistry | **Title**: Study of Carbon-Carbon and Carbon-Heteroatom Bonds Formations via C-H Functionalization  
**Funding Agency**: SERB  
**Principal Investigator**: Tariq Ahmad Shah; Mentor: Prof. T. Punniyamurthy |
| **Title**: Cancer immunotherapy: Mechanism based design of potent inhibitor for Indoleamine-2,3-dioxygenase 1  
**Funding Agency**: SERB  
**Principal Investigator**: Dr. Sreeparna Das; Mentor: Dr. Debasis Manna |
| **Title**: Peptide based semiconducting materials for organic-electronic devices  
**Funding Agency**: DST  
**Principal Investigator**: Dr. Debapratim Das |
| Civil | **Title**: Characterization of predicted novel extracellular proteins of pathogenic Leptospira interrogans  
**Funding Agency**: SERB  
**Principal Investigator**: Dr. Dr. Archana M. Nair |
| **Title**: Comprehensive rainfall induced landslide hazard analysis of Sunsali and Noonmati hills in Guwahati region  
**Funding Agency**: DST  
**Principal Investigator**: Dr. A. Murali Krishna |
| Chemical | **Title**: Potential reaction pathways and kinetics of catalytic co-pyrolysis of lignocellulosic biomass and waste plastics in producing value added products  
**Funding Agency**: SERB  
**Principal Investigator**: Dr. Anjireddy Bhavanam; Mentor: Dr. Nageswara Rao Peela |
| **Title**: Ionic liquids and deep eutectic solvents as electrolytes for energy efficient electro-chemical double layer capacitor  
**Funding Agency**: ISRO  
**Principal Investigator**: Dr. Tamal Banerjee |
| Computer Science | **Title**: Formal verification of optimizing transformations of programs  
**Funding Agency**: SERB  
**Principal Investigator**: Dr. Chandan Karfa |
| Humanities | **Title**: Assessment and review of MGNREGA as a social protection intervention in the Barak Valley region of Assam  
**Funding Agency**: UNICEF  
**Principal Investigator**: Dr. Chandan Karfa |
| **Title**: Compressible flow solver with immersed boundary approach  
**Funding Agency**: ISRO  
**Principal Investigator**: Dr. V. N. Kulkarni |

**New Research Projects**

**Title**: Design and development of novel broad absorption semiconductor/oxides for efficient water splitting: Role of morphology and charge transfer amongst the composites  
**Funding Agency**: SERB  
**Principal Investigator**: Dr. M. Qureshi |

**Title**: Bulk: Superhydrophobic polymer materials for controlled and tunable release of antimicrobial peptides” A novel material for generating antimicrobial material  
**Funding Agency**: DBT  
**Principal Investigator**: Dr. Uttam Manna |
**Title:** Forming of automotive materials at elevated temperature and selection of lubricants for sustainable manufacturing  
**Funding Agency:** DST  
**Principal Investigator:** Dr. R. Ganesh Narayanan

**Physics**  
**Title:** Development of novel hierarchical magnetic ferrite-semiconductor heterostructures for efficient photocatalytic application  
**Funding Agency:** SERB  
**Principal Investigator:** Dr. Koushik Saikia; Mentor: Prof. Perumal Alagarsamy

**Title:** Studies of Dark Matter  
**Funding Agency:** SERB  
**Principal Investigator:** Dr. Tapobroto Bhanja; Mentor: Dr. Debaprasad Maity

**Patents**

**Inventor:** Sandipan Mukherjee; Gopal Das, Aiyagari Ramesh  
**Title:** Gastric fluid-resistant proteinaceous nanocomposite for mitigation of gastrointestinal pathogenic bacteria

**Inventor:** Surajit Haldar; Chandan K. Jana  
**Title:** Preparation of alpha-tetrazolyl N-heterocycles

**Inventor:** Mitradip Bhattacharjee; Siddharth Thakur; Dipankar Bandyopadhyay  
**Title:** Acoustic Diagnostic Point-of-Care Testing Device for Blood Urea Detection

**Inventor:** Mitradip Bhattacharjee; Sagnik Middya; Dipankar Bandyopadhyay  
**Title:** A Point-of-Care Potential Detection Device for Different Body Parts

**Inventor:** Mitradip Bhattacharjee; Dipankar Bandyopadhyay  
**Title:** A POCT device for mobile RF radiation detection

**Inventor:** Jyoti Chandra; Srinivasa Rao Manne; Sandip Mondal; Bhubaneswar Mandal  
**Title:** (E)-ethyl 2-cyano-2-(((2,4,6-trichlorobenzoyl)oxy)imino) Acetate (TCBOXY): A Novel Coupling Reagent for Racemization-Free Esterification, Thioesterification, Amination and Peptide Synthesis  
**Inventor:** Avinash Shende

**Title:** Hetero-atom doped graphene for tunable platinum based catalytic nano-hybrid  
**Funding Agency:** SERB  
**Principal Investigator:** Dr. Munu Borah; Mentor: Dr. Uday Maiti

**Title:** Theory and Phenomenology of Dark Matter beyond the thermal WIMP scenario and its possible connection to neutrino mass and leptogenesis  
**Funding Agency:** SERB  
**Principal Investigator:** Dr. Anirban Biswas; Mentor: Dr. Debasish Borah

**Nanotechnology**  
**Title:** The Effect of Systematic Induction of Fluorine and Nitrogen on Semiconductor Property of Shape-Persistent Arylene-Ethynylene Macrocycles  
**Funding Agency:** SERB  
**Principal Investigator:** Dr. Kilingaru I Shivakumar; Mentor: Dr. Akshai Kumar Alape Seetharam

**Inventor:** Upashi Goswami; Madhumita Das; Arun Chattopadhyay; S. S. Ghosh  
**Title:** Bimetallc Sand Fe-Cu-Nano-composite based microorganism and metal exterminator system

**Inventor:** Tinu P. Saju; R. Ganesh Narayanan  
**Title:** Dieless friction stir forming

**Inventor:** Ashish Singh; Anamika Dey; Parameswar Krishnan Iyer  
**Title:** Method for the fabrication of Ultralow Voltage Operated, Reduced Bias Stress, Multi-layer Dielectric System Comprising n-type Organic Field Effect Transistors

**Inventor:** Ashish Singh; Anamika Dey; Parameswar Krishnan Iyer  
**Title:** Method for the Fabrication of Solution Process Ultra low Operating Voltage Stable Organic Field Effect Transistor

**Inventor:** Samit Bhattacharya; T Venkatesh  
**Title:** An ICT based system to enhance teaching and learning in large classrooms

**Inventor:** Subrata Tikadar; Samit Bhattacharya  
**Title:** An ICT enabled sensitive system for improved teaching and learning in a classroom

IITG Monitor ¶ Indian Institute of Technology Guwahati.
भारतीय प्रौद्योगिकी संस्थान गुवाहाटी में हिंदी पखवाड़ा एवं हिंदी दिवस समारोह 2017

भारतीय प्रौद्योगिकी संस्थान गुवाहाटी में प्रत्येक वर्ष की तरह वर्ष 2017 में 1 सितंबर 2017 से 15 सितंबर 2017 तक, हिंदी पखवाड़ा एवं हिंदी दिवस समारोह उद्घाटन एवं उत्साह के साथ मनाया गया। हिंदी पखवाड़ा के दौरान संस्थान के कर्मचारियों, संकाय सदस्यों, विद्यार्थियों, एवं परिसर के बच्चों के लिए कई प्रतियोगिताओं का आयोजन किया गया। कर्मचारियों एवं संकाय सदस्यों के लिए हिंदी कविता पाठ प्रतियोगिता और निबंध लेखन प्रतियोगिता का आयोजन किया गया। विद्यार्थियों के लिए हिंदी कविता लेखन, निबंध लेखन, और कविता पाठ प्रतियोगिताओं का आयोजन किया गया। इसके अलावा विद्यार्थियों द्वारा एक कवि सम्मेलन का भी आयोजन किया गया। सभी प्रतियोगिताओं में भारतीय प्रौद्योगिकी संस्थान परिसर के सदस्यों ने उद्घाटन के साथ भाग लिया। प्रतियोगिताओं के विजेताओं को हिंदी दिवस समारोह में पुरस्कार एवं प्रमाण पत्र प्रदान किए गए। पुरस्कार के रूप में विजेताओं एवं प्रतिभागियों को हिंदी पुरस्कार प्रदान की गई।

14 सितंबर 2017 को देश भर के साथ भारतीय प्रौद्योगिकी संस्थान गुवाहाटी में भी हिंदी दिवस निकाला गया। हिंदी दिवस के अवसर पर संस्थान के डॉ. पूर्णेन्द्र हरजिकेकर ब्रह्मगुप्ता ने एक महत्वपूर्ण समारोह का आयोजन किया गया। इस समारोह में संस्थान के कर्मचारीमण, संकाय, विद्यार्थियों, एवं परिसर के कुछ व्यक्तियों ने सभी हिंदी दिवस उपलब्धियों को भाषा में प्रस्तुत किया। अगस्त, माननी निदेशक महोदय प्रो. वौटम विशाल एवं उपस्थित संस्थान के वरिष्ठ संकाय और अधिकारियों द्वारा परिवर्तन दीप प्रज्वलन और गणेश वंदना के साथ समारोह का शुभारंभ किया गया। माननीय निदेशक महोदय और राजभाषा कार्यालय समिति के कार्यालय अध्यक्ष प्रो. रोहित मिश्रा ने सभा को संबोधित किया। इसके उपरांत वरिष्ठ हिंदी अधिकारी द्वारा वर्ष 2015-2016 की राजभाषा कार्यालय से महत्वपूर्ण वार्षिक प्रतियोगिता प्रस्तुत की गई। इसके बाद माननीय निदेशक महोदय ने अपने कर कमानों से हिंदी पखवाड़ा के दौरान आयोजित सभी प्रतियोगिताओं के विजेताओं को पुरस्कार एवं प्रमाण पत्र प्रदान किए। हिंदी दिवस समारोह के अवसर पर अभ्यास कला प्रो. जयोतिर्लिंग तामः, विभागाध्यक्ष, भाषा -विज्ञान विभाग, गोवाहाटी विद्यालय, द्वारा एक आमंत्रित व्याख्यान प्रस्तुत किया गया जिसका शीर्षक है "हिंदी तक पहुँच बढ़ाने की ओर" | धन्यवाद जापन के साथ हिंदी पखवाड़ा और हिंदी दिवस समारोह 2017 औपचारिक रूप से संपन्न किया गया।
BSBE

Dimple Chouhan, Bijayshree Chakraborty, Samit K. Nandi and Biman B. Mandal; Role of Non-Mulberry Silk Fibroin in Deposition and Regulation of Extracellular Matrix Towards Accelerated Wound Healing; Acta Biomaterialia; 2017; 48; 157-174.

Nandana Bhardwaj, Dimple Chouhan, Biman B. Mandal; Tissue engineered skin and wound healing: current strategies and future directions; Current pharmaceutical design; 2017; 23; 24; 3455-3482.

Joseph CM, Philip J. Reardon, Rocktotpal Konwar, Jonathan C Knowles, Biman B. Mandal; Mimicking Hierarchical Complexity of the Osteochondral Interface Using Electrospun Silk-Bioactive Glass Composites; ACS Applied Materials and Interfaces; 2017; 9; 8000-8013.

Rocktotpal Konwar, Bibhas K. Bhunia and Biman B. Mandal; Opportunities and Challenges in Exploring Indian Nonmulberry Silk for Biomedical Application; Proceedings of the Indian National Science Academy; 2017; 83; 1; 85-101.

M. Gopi Kirana, Kannan Pakshirajan and Gopal Das; A new application of anaerobic rotating biological contactor reactor for heavy metal removal under sulfate reducing condition; Chemical Engineering Journal; 2017; 321; 67-75.

Omega L. Diengdoh, Mayashree B. Syiem, Kannan Pakshirajan and Amar N. Rai; Zn\textsuperscript{2+} sequestration by Nostoc muscorum: study of thermodynamics, equilibrium isotherms, and biosorption parameters for the metal; Environmental Monitoring and Assessment; 2017; 189; 314-327.


Saumya Prasad, Imon Mandal, Shubham Singh, Ashim Paul, Bhubaneswar Mandal, Ravindra Venkatramani and Rajaram Swaminathan; Near UV-Visible electronic absorption originating from charged amino acids in a monomeric protein; Chemical Science; 2017; 8; 5416-5431.

N. Sreekumar, A. J. Chennattussery, A. Mariya and N. Selvaraju; Anaerobic digester sludge as nutrient source for culturing of microalgae for economic biodiesel production; International Journal of Environmental Science and Technology; 2017; 1; DOI 10.1007/s13762-017-1491-z.

Eldho Abraham, Giri Nandagopal Mukanthun Sulochana, Bhuvaneshwari Soundarajan, Selvaraju Narayanasamy; Experimental Investigation on Microfluidic Reactive Extraction of Citric Acid Using Trioctylamine/1-Decanol System in Uniform and Nonuniform Circular Microchannels; Industrial & Engineering Chemistry Research; 2017; 38; 56; 10845-10855.

V. M. Vidhya, Vikash Kumar Dubey and Karthe Ponnuraj; Identification of two natural compound inhibitors of Leishmania donovani Spermidine Synthase (SpdS) through molecular docking and dynamic studies; J Biomol Struct Dyn; 2017; Sep 5:1-16; DOI: 10.1080/07391102.2017.1366947.


Atul Kumar, Jina Bhattacharyya, Bithiah Grace J; Adhesion to stromal cells mediates imatinib resistance in chronic
myeloid leukemia through ERK and BMP signaling pathways; Scientific Reports; 2017; 7; 1; doi:10.1038/s41598-017-10373-3.


S. Das, M. Sharma, D. Saharia, K. Sarma, E. Muir; Electrospun silk-polyaniline conduits for functional nerve regeneration in rat sciatic nerve injury model; Biomedical Materials; 2017; 12; 4; 045025.


Durairaj Thiyagarajan, Gopal Das and Aiyagari Ramesh; Amphiphilic Cargo-Loaded Nanocarrier Enhances Antibiotic Uptake and Perturbs Efflux: Effective Synergy for Mitigation of Methicillin-Resistant Staphylococcus aureus; ChemMedChem; 2017; 12; 14; 1125-1132.

Kuldeep Mahato, Ashutosh Kumar, Pawan Kumar Maurya, Pranjal Chandra; Shifting paradigm of cancer diagnoses in clinically relevant samples based on miniaturized electrochemical nanobiosensors and microfluidic devices; Biosensors and Bioelectronics; 2017; 100; 411-428.

Kashish, Surabhi Bansal, Anurag Jyoti, Kuldeep Mahato, Pranjal Chandra, Rajiv Prakash; Highly Sensitive In Vitro Biosensor for Enterotoxigenic Escherichia coli Detection Based on ssDNA Anchored on PtNPs-Chitosan Nanocomposite; Electroanalysis; 2017; 27; 1-8.

Saeromi Chung, Pranjal Chandra, Jaseok Peter Koo, Yoon-Bo Shim; Development of a bifunctional nanobiosensor for screening and detection of chemokine ligand in colorectal cancer cell line; Biosensors and Bioelectronics; 2017; 100;393-403.

B. Nath, A. Gupta, S. Khan, S. Kumar; Enhanced cytopathic effect of Japanese encephalitis virus strain SA14-14-2: probable association of mutation in amino acid of its envelope protein; Microb Pathog; 2017; 111; 187-192.


Gupta A, Prasad A, Mulchandani N, Shah M, Sankar RM, Kumar S, Katiyar V; Multifunctional Nanohydroxyapatite-Promoted Toughened High-Molecular-Weight Stereocomplex Poly(lactic acid)-Based Bionanocomposite for Both 3D-Printed Orthopedic Implants and High-Temperature Engineering Applications; ACS Omega; 2017; 7; 2; 40392-405.

B. Nath, S. Kumar; Emerging variant of genotype XIII Newcastle disease virus from Northeast India; Acta Trop; 2017; 172; 64-69.


C. S. Kumar, S. Kumar; Synonymous codon usage of genes in polymerase complex of Newcastle disease virus; J Basic Microbiol; 2017; 584; 1-6.

K. Ganar, M. Das, A. A. Raut, A. Mishra, S. Kumar; Emergence of a deviating genotype VI pigeon paramyxovirus type-1 isolated from India; Archives of Virology; 2017; 162; 2169-2174.


K. Ganar, M. Das, A. A. Raut, A. Mishra, S. Kumar; Emergence of a deviating genotype VI pigeon paramyxovirus type-1 isolated from India; Archives of Virology; 2017; 162; 2169-2174.

K. Ganar, M. Shah, B. Kamdi, N. Kurkure, S. Kumar; Molecular characterization of chicken anemia virus outbreaks in Nagpur province, India from 2012-2015; Microb Pathog; 2017; 102; 113-119.

M. Das, S. Kumar; Evidence of independent evolution of genotype XIII Newcastle disease viruses from India; Archives of Virology; 2017; 162; 997-1007.

A. Makhlja, S. Kumar; Characterization of duck plague virus stability at extreme conditions of temperature, pH and salt concentration; Biologicals; 2017; 45; 102-105.

Sharmila Narayanan, Deepanjalee Dutta, Neha Arora, Lingaraj Sahoo and Siddhartha Sankar Ghosh; Phytaspase-loaded, Mn-doped ZnS quantum dots when embedded into chitosan nanoparticles leads to improved chemotherapy of HeLa cells using in cisplatin; Biotechnology Letters; 2017; 39; 10; 1591-1598.

Anil P Bidkar, Pallab Sanpui, &and Siddhartha Sankar Ghosh; Efficient induction of apoptosis in cancer cells by paclitaxel-loaded selenium nanoparticles; Nanomedicine; 2017; 12; 21; 2641-2651.

Asif Raza, Archita Ghoshal, S. Chockalingam and Siddhartha Sankar Ghosh; Connexin-43 enhances tumor suppressing activity of artemisane via gap junction-dependent as well as independent pathways in human breast cancer cells; Scientific Reports; 2017; 7; 1; 7580; DOI: 10.1038/s41598-017-08058-y.

Lalitha Gavya S, Neha Arora and Siddhartha Sankar Ghosh; Retention of functional characteristics of Glutathione-S-Transferase and Lactate Dehydrogenase-A in fusion protein; Preparative Biochemistry and Biotechnology; 2017(Just Accepted).

S. Kumar, A. Kalita, R. Srivastava and L. Sahoo; Co-expression of Arabidopsis NHX1 and bar Improves the Tolerance to Salinity, Oxidative Stress, and Herbicide in Transgenic Mungbean ; Frontiers in Plant Science; 2017; 8; 1896.

S. Kumar, B. Tanti, B. L. Patil, S. K. Mukherjee, L. Sahoo; RNAi-derived transgenic resistance to Mungbean yellow mosaic India virus in cowpea; PLOS ONE; 2017; 10.

S. Kumar, B. Tanti, S. K. Mukherjee, L. Sahoo; Molecular characterization and infectivity of Mungbean Yellow Mosaic India virus variant associated with yellow mosaic disease of cowpea and mungbean; Biocatalysis and Agricultural Biotechnology; 11; 183-191.

S. Narayanan, P. Sanpui, L. Sahoo, S. S. Ghosh; Tobacco phytaspase: Successful expression in a heterologous system; Bioengineered; 2017; 28; 1-5.

N. K. Mund, D. Dash, C. R. Barik, V. V. Goud, L. Sahoo, P. Mishra, N. R. Nayak; Evaluation of efficient glucose release using sodium hydroxide and phosphoric acid as pretreating agents from the biomass of Sesbania grandiflora (L.) Pers.: A fast growing tree legume; Bioresource Technology; 2017; 236; 97-105.


U. Manna, S. Kayal, B. Nayak and G. Das; Systematic size mediated trapping of anions of varied dimensionality within a dimeric capsular assembly of a flexible neutral bis-urea platform; Dalton Transactions; 46; 35; 11956-11969.


P. Gopikrishna, D. Das, L. R. Adil, P. K. Iyer; Saturated and Stable White Electroluminescence from Linear Single Polymer Systems Based on Polyfluorene and Mono-Substituted Dibenzofulvene Derivatives; Journal of Physical Chemistry C; 2017; 121; 33; 18137-18143.

T. K. Sahu, S. Arora, A. Banik, P. K. Iyer, M. Qureshi; Efficient and Rapid Removal of Environmental Malignant Arsenic(III) and Industrial Dyes Using Reusable, Recoverable Ternary Iron Oxide - ORMOSIL - Reduced Graphene Oxide Composite; ACS Sustainable Chemistry and Engineering; 2017; 5; 7; 5912-5921.

S. R. Chowdhury, S. Mukherjee, S. Das, C. R. Patra and P. K. Iyer; Multifunctional (3-in-1) cancer theranostics applications of hydroxyquinoline-appended polyfluorene nanoparticles; Chemical Science Open Access; 2017; 8; 11; 7566-7575.


M. Mohan, P. K. Naik, T. Banerjee, V.V. Goud and S. Paul; Solubility of glucose in tetrabutylammonium bromide based deep eutectic solvents: Experimental and molecular dynamic simulations; Fluid Phase Equilibria; 2017; 448; 168-177.

S. Das and S. Paul; Hydrotropic Solubilization of Sparingly Soluble Riboflavin Drug Molecule in Aqueous Nicotinamide Solution; Journal of Physical Chemistry B; 2017; 121; 37; 877-8785.

M. S. Ansari, A. Banik, M. Qureshi; Morphological tuning of photo-booster g-C3N4 with higher surface area and better charge transfers for enhanced power conversion efficiency of quantum dot sensitized solar cells; Carbon; 2017; 121; 90-105.

T. K. Sahu, S. Arora, A. Banik, P. K. Iyer and M. Qureshi; Efficient and Rapid Removal of Environmental Malignant Arsenic(III) and Industrial Dyes Using Reusable, Recoverable Ternary Iron Oxide - ORMOSIL - Reduced Graphene Oxide Composite; ACS Sustainable Chemistry and Engineering; 2017; 5; 7; 5912-5921.


M. Khannam, T. Weyhermüller, U. Goswami and C. Mukherjee; A highly stable l-alanine-based monooxo (aquated) Mn(II) complex as a T1-weighted MRI contrast agent; Dalton Transactions; 2017; 46; 31; 10426-10432.

N. P. Das and S. Dutta; Controlling three-dimensional vortices using multiple and moving external fields; Physical Review E; 2017; 96; 2.


M. A. Haque and C. K. Jana; Regiodivergent Remote Arylation of Cycloalkanols to Dysideanone’s Fused Carbotetra-cycles and Its Bridged Isomers; Chemistry - A European Journal; 2017; 23; 54; 13300.


U. Manna and G. Das; Anion binding consistency by influence of aromatic: Meta-disubstitution of a simple urea receptor: Regular entrapment of hydrated halide and oxyanion clusters; CrystEngComm; 2017; 19; 37; 5622-5634.

U. Manna, S. Kayal, B. Nayak and G. Das; Systematic size mediated trapping of anions of varied dimensionality within a dimeric capsular assembly of a flexible neutral bis-urea platform; Dalton Transactions; 2017; 46; 35; 11956-11969.

A. M. Rather, N. Jana, S.Begum, H. K. Srivastava, U.Manna; Exceptional control on physical properties of a polymeric material through alcoholic solvent-mediated environment-friendly Michael addition reaction; Green Chemistry; 2017; 19; 19; 4527–4532.

D. Parbat, S. Gaffar, A. M. Rather, A. Gupta and U. Manna; A general and facile chemical avenue for the controlled and extreme regulation of water wettability in air and oil wettability under water; Chemical ScienceOpen Access; 2017; 8; 9; 6542–6554.

**Computer Science**

Shounak Chakraborty and Hemangee K. Kapoor; Performance linked dynamic cache tuning: A static energy reduction approach in tiled CMPs; Journal of Microprocessors and Microsystems; 2017; 52; 221 –235.


Elizabeth Isaac, M. Rajasekhar Babu, John Jose; Deflection Router for Mesh NoC with Multicast Support Mechanism; International Journal of Computer Information Systems and Industrial Management Applications (UCISIM); 2017; 9; ISSN 2150-7988; 087-095.

S. Kumar, A. Sarkar, A. Sur; A Resource Allocation Framework for Adaptive Video Streaming Over LTE; Journal of Network and Computer Applications (JNCA); 2017; 97; 126-139.

V. Kochar, A. Sarkar; Real-time Scheduling on Dynamic Resources in a Fog Computing Environment; Journal of Low Power Electronics (JOLPE); 2017.

Pradeep Kumar Biswal, Santosh Biswas; On-Line Testing of digital VLSI circuits at Register Transfer Level using High Level Decision Diagrams; Microelectronics Journal; 2017; 67; 88-100.

Rakesh Tripathi, S. Vignesh, T. Venkatesh, A. T. Chronopoulos, and H. Siar; Non-cooperative Power and Latency Aware Load Balancing in Distributed Data Centers; Journal of Parallel and Distributed Computing; 2017; 107; 76-86.

Bala Prakasa Rao Killi, S. V. Rao; Capacitated Next Controller Placement in Software Defined Networks; IEEE Transactions on Network and Service Management; 2017; 14; 3; 514-527.

Debanjan Sadhukhan, S. V. Rao; Effect of Clock Skew in Event Driven, Delay Constrained Heterogeneous WSN with Anycast; Wireless Personal Communications; 2017; 1-14.

**Design**


S. Nath, T. Kalita, A. Chatterjee, R. Tiwari and S. Karmakar; Occupation imposed postural discomfort among the stone polishing workers from Guwahati, Assam: A systematic ergonomic evaluation; The Japanese Journal of Ergonomics; 2017; 53; Supplement-2; S438-S441.

S. Karmakar, and R. Solomon; Ergonomic Evaluations and Design Interventions for Shop-Floors Dealing with Chemical Conversion Coatings: Case Study from India; Advances in Ergonomics in Design: Proceedings of AHFE 2017 conference; 2017; 857-868.


N. Yein and S. Pal; Qualitative Study on Salient Factors Influencing Indian Elderly’s Perception on Fall and Its Related Interventions; Advances in Design for Inclusion: Proceedings of AHFE 2017 conference; 2017; 122-128.

S. Bora, A. Chatterjee and D. Chakrabarti; An Ergonomic Interventional Approach to Improve Office Workspace for Policewomen in Assam, India; Advances in Social & Occupational Ergonomics: Proceedings of AHFE 2017 conference; 2017; 318-325.


**Electronics**


Nabanita Adhikary and Chitralekha Mahanta; Inverse Dynamics based Robust Control Method for Position Commanded Servo Actuators in Robot Manipulators; Control Engineering Practice (Elsevier); 2017; 66; 146-155.

Vinay Pandey, Indrani Kar and Chitralekha Mahanta; Controller Design for a Class of Nonlinear MIMO Coupled System using Multiple Models and Second Level Adaptation; ISA Transactions (Elsevier); 2017; 69; 256-272.

Sanjib Ganguly and Dipanjan Samajpati; Distributed generation allocation with on-load tap changer on radial distribution networks using adaptive genetic algorithm; Applied Soft Computing (Elsevier); 2017; 59; 45-67.

Rishikesh Kulkarni, Pramod Rastogi; Simultaneous estimation of multiple phases in digital holographic interferometry using state space analysis; Optics and Lasers in Engineering; 2017; 1-8.

J. Prajapati, M. Bharadwaj, A. Chatterjee and R. Bhattacharjee; Circuit modelling and performance analysis of photoconductive antenna; Optics Communications (Elsevier); 2017; 394; 69-79.

S. Bhattacharjee, R. S. Kshetrimayum and R. Bhattachar-jee; On the theoretical analysis of radiation pattern and gain of printed monopole antennas; Applied Computational Electromagnetics Society Journal; 2017; 32; 9; 842-847.

A. N. Yadav and R. Bhattacharjee; Dual-band balanced-to-unbalanced out-of-phase equal power divider; Microwave and Optical Technology Letters; 2017; 59; 8; 2078-2083.


Mathematics

R. Barman and N. Saikia; Summation identities and transformations for hypergeometric series; Annales mathématiques du Québec; 2017; DOI: 10.1007/s40316-017-0087-9; 1-25.


Arnab Koley, Debasis Kundu and Ayon Ganguly; Analysis of Type-II hybrid censored competing risks data; Statistics; 2017; 51; 6; 1304-1325.

Debashis Samanta, Debasis Kundu and Ayon Ganguly; Order restricted Bayesian analysis of a simple step-stress model; Sankhya B; 2017; DOI: 10.1007/s13571-017-0139-9; 1-27.

Mechanical
V. Satheeshkumar, R. Ganesh Narayanan; Predicting the tensile behavior of adhesively bonded sheets using equivalent geometrical heterogeneities; International Journal of Material Forming; 2017; 9; 5; 663–675.

M. Baruah, S. Bag and S Kumar; Probing phase lag effect in ultra-short pulse laser heating of nano-film; Manufacturing Letters; 2017; 13; 6–10.
S. Bhardwaj, P. Randive and A. Dalal; Lattice Boltzmann Simulations of Coalescence of Two Droplets on a Rectangular Channel Wall Considering Wetting Effects; Progress in Computational Fluid Dynamics; 2017; 17; 5; 281-289.

Arpan Kumar Mondal, Pankaj Biswas and Swarup Bag; Prediction of weld induced residual stress and angular distortion of single sided and double sided fillet joint by SAW process; International Journal of Steel Structure; 2017; 17; 1; 1-10.

P. Kaushik, P. K. Mondal, S. Chakraborty; Rotational electrophydrodynamics of a non-Newtonian fluid under electrical double-layer phenomenon: the role of lateral confinement; Microfluidics and Nanofluidics; 2017; 21; 7; 122-1-122-16.


Bipul Das, Sukhomay Pal and Swarup Bag; Torque based defect detection and weld quality modelling in friction stir welding process; Journal of Manufacturing Processes; 2017; 27; 8-17.


H. Chattopadhyay, S. K. Samanta, G. Biswas and B. B. Sharma; Direct numerical simulation of evaporation in a biporous media; Journal of Mechanical Science and Technology; 2017; 31; 6; 2635-2641.

B. Das, S. Bag and S. Pal; Probing weld quality monitoring in friction stir welding through characterization of signals by fractal theory; Journal of Mechanical Science and Technology; 2017; 31; 5; 2459-2465.

P. Kishore Kumar, M. Charan, and S. Kanagaraj; Trends and challenges in lower limb prostheses; IEEE potentials; 2017; 36; 1; 19-23.

U. S. Tejaswini, D. N. Basu, M. Pandey; Improved Scaling Analysis for Heat Transfer in a Circular Tube with Various Supercritical Fluids using Computational Fluid Dynamics Simulations; Heat Transfer Engineering; 2017; 38; 2; 149-161.

S. Timung, J. Chaudhuri, M. P. Borthakur, T. K. Mandal, G. Biswas and D. Bandyopadhyay; Electric field mediated spraying of miniaturized droplets inside microchannel; Electrophoresis; 2017; 38; 1450-1457.

H. Gaikwad, P. K. Mondal; Slip driven electroosmotic transport through porous media; Electrophoresis; 2017; 38; 5; 596-606.


Prakash Kumar Sahu, Sukhomay Pal and Surjya K. Pal; Al/Cu Dissimilar FSW with Ni, Ti and Zn Foil as Interlayer for Flow Control, Enhancing Mechanical and Metallurgical Properties; Metallurgical and Materials Transactions A; 2017; 48; 7; 3300-3317.

M.K.S. Sarkar, D.N. Basu; Numerical Comparison of Thermalhydraulic Aspects of Supercritical Carbon Dioxide and Subcritical Water-based Natural Circulation Loop; Nuclear Engineering and Technology; 2017; 49; 1; 103-112.

Arvind K Agrawal, R. Ganesh Narayanan, Satish V Kailas; End forming behaviour of friction stir processed Al6063-T6 tubes at different tool rotational speeds; Journal of Strain Analysis for Engineering Design; 2017; 52; 7; 434-449.
Chandrahas Patel, Pravin Ghatule, Sachin D Kore; Finite element analysis of effect of process parameters on electromagnetic free expansion of aluminium tube; International Journal of Materials and Product Technology; 2017; 54; 42738; 165-178.


M. Baruah and S. Bag; Characteristic difference of thermo-mechanical behavior in plasma microwelding of steels; Welding in the World; 2017; 61; 4; 857-871.

S. Bhardwaj and A. Dalal; Mesoscopic Analysis of Three-dimensional Droplet Displacement on Wetted Grooved Wall of a Rectangular Channel; European Journal of Mechanics, B/Fluids; 2017; 67; 35-53.

S. C. Mishra, S. Panigrahy and V. J. Ghatage; Analysis of combined mode heat transfer in a porous medium using lattice Boltzmann method; Numerical Heat Transfer, Part A; 2017; 69; 10; 1092-1105.


B. Das, S. Pal and S. Bag; Weld quality prediction in friction stir welding using wavelet analysis; International Journal of Advanced Manufacturing Technology; 2017; 89; 1; 711-725.

M. Baruah and S. Bag; Influence of pulsation in thermo-mechanical analysis on laser microwelding of Ti6Al4V alloy; Optics & Laser Technology; 2017; 90; 40-51.

M. P. Borthakur, G. Biswas, and D. Bandyopadhyay; Formation of liquid drops at an orifice and dynamics of pinch-off in liquid jets; Physical Review E; 2017; 96; 013115-1 - 013115-11.

Srinivas R. Gorthi, P. K. Mondal, G. Biswas; Magnetic-field-driven alteration in capillary filling dynamics in a narrow fluidic channel; Physical Review E; 2017; 96; 013113-1-13113-14.

S. N. Joshi and G. Bolar; Three-Dimensional Finite Element Based Numerical Simulation of Machining of Thin-Wall Components with Varying Wall Constraints; Journal of The Institution of Engineers (India), Series C; 2017; 98; 3; 343-352.

J. Ravi, S. Nidhan, N. Muthu, S.K. Maiti; Analytical and Experimental studies on detection of longitudinal, L and T shaped cracks in isotropic and Bi-material beams based on changes in natural frequency; Mechanical Systems and Signal Processing; 2018; 101; 67-96.

Bipul Das, Sukhomay Pal and Swarup Bag; Design and Development of force and torque measurement setup for real time monitoring of friction stir welding process; Measurement; 2017; 103; 186-198.


M. Krishnani, D. N. Basu; Computational Stability Appraisal of Rectangular Natural Circulation Loop: Effect of Loop Inclination; Annals of Nuclear Energy; 2017; 107; 17-30.


B. Kiran Naik, P. Muthukumar; Empirical correlation based models for estimation of air cooled and water cooled condenser’s performance; Energy Procedia; 2017; 109; 293-305.


Poonam Kumari, S. Behera; Three-dimensional free vibration analysis of levy-type laminated plates using multi-term extended Kantorovich method; Composites Part B: Engineering; 2017; 116; 224-238.

H. Gaikwad, D. N. Basu, P. K. Mondal; Non-linear Drag Induced Irreversibility Minimization in a Viscous Dissipative Flow Through a Micro-porous Channel; Energy; 2017; 119; 588-600.

B. Kiran Naik, P. Muthukumar; A Novel Approach for Performance Assessment of Mechanical Draft Wet Cooling Towers; Applied Thermal Engineering; 2017; 121; 14-26.

A. Misra, P. M. Pandey and U. S. Dixit; Modeling and simulation of surface roughness in ultrasonic assisted magnetic abrasive finishing process; International Journal of Mechanical Sciences; 2017; 133; 344-356.


Hakeem Niyas, Sunku Prasad, P. Muthukumar; Performance investigation of a lab-scale latent heat storage prototype - Numerical results; Energy Conversion and Management; 2017; 135; 188-199.


A. Kumar, S. Panda; Optimal Damping in Circular Cylindrical Sandwich Shells With a Three-Layered Viscoelastic Composite Core; ASME Journal of Vibration and Acoustics; 2017; 139; 6; 061003-1-061003-12.
Kishore Kumar Gajrani, Mamilla Ravi Sankar, Uday Shanker Dixit; Tribological performance of MoS2 filled micro-textured cutting tools during dry sliding test; ASME Journal of Tribology; 2018; 140; 2; 21301-021301-11.


Hakeem Niyas, R. C. R. Chilaka, P. Muthukumar; Performance Investigation of a lab–scale latent heat storage prototype - Experimental results; Solar Energy; 2017; 155; 971-984.


K. K. Gajrani, D. Ram, M. Ravi Sankar; Biodegradation and hard machining performance comparison of eco-friendly cutting fluid and mineral oil using flood cooling and minimum quantity cutting fluid techniques; Journal of Cleaner Production; 2017; 165; 1420-1435.

Poonam Kumari, Agyapal Singh, R. K. N. D. Rajapakse, Santosh Kapuria; Three-dimensional static analysis of Levy-type functionally graded plate with in-plane stiffness variation; Composite Structures; 2017; 168; 780-791.

S. S. Gautam and P. M. Dixit; Simulation of Large Deformation Elasto-plastic Impact Problems Using Two Different Objective Stress Measures; Procedia Engineering; 2017; 172; 432-439.

Debaleena Chakraborty, D. Chakraborty and K. S. R. Krishna Murthy; Experimental determination of mode I stress intensity factor in orthotropic materials using a single strain gage; Engineering Fracture Mechanics; 2017; 173; 130-145.

Poonam Kumari, A. Shakya; Two-Dimensional Solution of Piezoelectric Plate Subjected to Arbitrary Boundary Conditions using Extended Kantorovich Method; Procedia Engineering; 2017; 173; 1523-1530.

Ishwar Kapoor, R. Ganesh Narayanan, Scott Taylor, Vit Janik, Richard Dashwood; Predicting the warm forming behavior of WE43 and AA5086 alloys; Procedia Engineering; 2017; 173; 897-904.

S. Karmakar, N. Kalita, A. Banerjee; Optimum placement of shape memory alloy wire actuator; Proc IMechE Part C: J Mechanical Engineering Science; 2017; 231; 7; 1272-1291.


Arvind K Agrawal, R. G. Narayanan; Joining of a tube to a sheet through end curling; Journal of Materials Processing Technology; 2017; 246; 291-304.

D. Shankar, D. N. Basu, M. Pandey; Development and analysis of a novel scaling methodology for stability appraisal of supercritical flow channels; Nuclear Engineering and Design; 2017; 323; 46-55.

H. Gaikwad, D. N. Basu, P. K. Mondal; Slip Driven Micro-pumping of Binary System with A Layer of Non-conducting Fluid under Electrical Double Layer Phenomenon; Colloids and Surfaces A: Physicochemical and Engineering Aspects; 2017; 518; 166-172.
IITG Monitor


A. Misra, P. M. Pandey and U. S. Dixit; Modeling of material removal in ultrasonic assisted magnetic abrasive finishing process; International Journal of Mechanical Sciences; 2017; 131-132; 853-867.


Vipin C. Shukla, Pulak M. Pandey, Uday S. Dixit, Anish Roy and Vadim Silberschmidt; Modeling of normal force and finishing torque considering shearing and ploughing effects in ultrasonic assisted magnetic abrasive finishing process with sintered magnetic abrasive powder; Wear; 2017; 390-391; 11-22.

Arun K Kadian, Pankaj Biswas; Effect of tool pin profile on the material flow characteristics of AA6061; Journal of Manufacturing Processes; 2017; 26; 382-392.

Physics

Ravi K. Biroju and P. K. Giri; Strong visible and near infrared photoluminescence from ZnO nanorods/nanowires grown on single layer graphene studied using sub-band gap excitation; Journal of Applied Physics; 2017; 122; 044302.


Joydip Ghosh, Ramesh Ghosh, P. K. Giri; Tuning the Visible Photoluminescence in Al Doped ZnO Thin Film and its Application in Label-free Glucose Detection; Sensors and Actuators B; 2017; 254; 681-689.

Kamal Kumar Paul and P. K. Giri; Role of Surface Plasmons and Hot Electrons on the Multi-Step Photocatalytic Decay by Defect Enriched Ag@TiO2 Nanorods under Visible Light; Journal of Physical Chemistry C; 2017; 121; 36; 20016-20030.


Zaineb Calcuttawala, Anirban Kundu, Soumitra Nandi, Sunando Kumar Patra; Optimal observable analysis for the decay b→s plus missing energy; Eur.Phys.J. C; 2017; 77; 9; 650.

Partha P. Dey and Alika Khare; Fabrication of photoluminescent nc-SiSiO2 thin films prepared by PLD; Physical Chemistry Chemical Physics; 2017; 19; 32; 21436-21445.

Environment

M. Gopi Kiran, Kannan Pakshirajan and Gopal Das; A new application of anaerobic rotating biological contactor reactor for heavy metal removal under sulfate reducing condition; Chemical Engineering Journal; 2017; 321; 1; 67 -75.

Narendra Naik Deshavath, V. Venkata Dasu, V. V. Goud and P. Srinivasa Rao; Development of dilute sulfuric acid pretreatment method for the enhancement of xylose fermentability; Biocatalysis and Agricultural Biotechnology; 2017; 11; 224-230.

Papu Kumar Naik, Sandip Paul and Tamal Banerjee; Liquid Liquid Equilibria measurements for the extraction of poly aromatic nitrogen hydrocarbons with a low cost Deep Eutectic Solvent: Experimental and theoretical insights; Journal of Molecular Liquids; 2017; 243; 542-552.

IITG Monitor ¶ Indian Institute of Technology Guwahati.
Visva Bharati Barua and A. S Kalamdhad; Biochemical methane potential test of untreated and hot air oven pre-treated water hyacinth: A comparative study; Journal of Cleaner Production; 2017; 166; 273-284.

Nanotechnology


Sabyasachi Pramanik, Satyapriya Bhandari and Arun Chattopadhyay; Zinc quinolate complex decorated CuInS2/ZnS core/shell quantum dots for white light emission; Journal of Materials Chemistry C; 2017; 5; 7291-7296.

A. Raza A. Ghoshal, S. Chockalingam, S. S. Ghosh; Connexin-43 enhances tumor suppressing activity of artesunate via gap junction-dependent as well as independent pathways in human breast cancer cells; Scientific Reports; 2017; 7; 7580.

S. R. Chowdhury, S. Mukherjee, S. Das, C. Patra and P. K. Iyer; Multifunctional(3-in-1) cancer theranostics applications of hydroxyquinoline appended polyfluorene nanoparticles; Chem. Sci.; 8; 7566-7575.

Manash Pratim Borthakur, Gautam Biswas, and Dipankar Bandyopadhyay; Formation of liquid drops at orifice and dynamics of pinch-off in liquid jets; Physical Review E; 96;

Nayan Mani Das, Sunny Kumar and Dipankar Bandyopadhyay; UV-OzoneMediated Miniaturization of Dewetted Polymeric Nanostructures on Graphene-Oxide flakes for Enhanced Raman Scattering; Carbon; 121; 612-624.

Kamal Kumar Paul and P. K. Giri; Role of Surface Plasmons and Hot Electron on the Multi-Step Photocatalytic Decay by Defect Enriched Ag@TiO2 Nanorods under Visible Light; J. Phys. Chem. C; 2017; 121; 20016-20030.

Joydip Ghosh, Ramesh Ghosh, P.K. Giri; Tuning the Visible Photoluminescence in Al Doped ZnO Thin Film and its Application in Label-free Glucose Detection; Sensors and Actuators B; 2017; 254; 681-689.

Ravi K. Biroju, and P. K. Giri; Strong visible and near infrared photoluminescence from ZnO nanorods/nanowires grown on single layer graphene studied using sub-band gap excitation; J. Appl. Phys.; 2017; 122; 044302.


Energy
P. Kalita, Sangeeta Borah and Dudul Das; Design and performance evaluation of a novel solar distillation unit; Desalination; 2017; 416; 65-75.

P. Kalita and D. Das; Thermodynamic analysis of a modified solar still; IASH Journal of International Association for Small Hydro; 2017; 6; 1; 14-19.

Asha Yadav, Juhi Kumari and Pratima Agarwal; Role of Interface States on Electron Transport in a-Si:H/nc-Si:H Multilayer Structures; American Institute of Physics, Proceedings; 2017.
On this day our great nation attained independence and broke free from British colonialism after centuries of struggle and countless sacrifices made by freedom fighters. This day is celebrated with great zeal and enthusiasm across the country to pay homage to the countless sacrifices made and also to usher the spirit of togetherness, which will take our nation miles ahead in future.

The 71st Independence Day was celebrated on the 15 August 2017 at IIT Guwahati with the Director unfurling the Tricolour. The Hon’ble Director Prof. Gautam Biswas then addressed the IIT Guwahati Community.

This was followed by a colourful cultural programme by the students of the Institute, Kendriya Vidyalaya IIT Guwahati, Akshara Primary School, Sishugram and children of the campus.

All the residents of the campus were present throughout the function.
Bioscience & Bioengineering

Nandana Bhardwaj, Dimple Chouhan and Biman B. Mandal; “3D functional scaffolds for skin tissue engineering”; Functional Three-Dimensional Tissue Engineering Scaffolds: Materials, Technologies and Applications; Woodhead Publisher; 2017; 978-0-08-100979-6.

Chemistry


A. S. Achalkumar, Manoj Mathews, Quan Li; “Stimuli-Directed Self-Organized One-Dimensional Organic Semi-conducting Nanostructures for Optoelectronic Applications”; Wiley VCH; 2017; 247-305.


Computer Science
S. Kumar, D. Goswami, A. Sarkar, A. Sur; “Communication Systems and Networks / A Buffer Aware Resource Allocation Framework for Video Streaming over LTE”; Lecture Notes in Computer Science (LNCS), Springer; 2017; 10340; 978-3-319-67234-2.

Design


Electronics

Humanities

Maths

Mechanical

Visitors from other Institutes / Universities

**BSBE**
Dr. Nihar Ranjan Nayak, Ramalingaswami Fellow of DBT, Senior Scientist, Regional Plant Resource Centre, Bhubaneswar; ‘Protein Methylation in Plants - Experiences with Carbon Fixation and Protein Repair’; 27–28 August 2017.

Prof. T. J. Higgins, CSIRO Agriculture and Food, Canberra, and Professor, Science and Technology, Queensland University of Technology, Brisbane, Australia; ‘Bt Cowpeas are protected against Maruca Podborers’; 21 September 2017.

**Design**
Sushma Chakravarty, Former Creative Director, FCB Ulka, Mumbai; ‘Workshop on Creative Minds Expressive hands’; 4 – 8 September 2017.

**Electronics**
Prof. Ram Bilas Pachori, Department of EE, IIT Indore; ‘Invited Talk’; 24 August 2017.


**Humanities**
Prof. Shobhana Chelliah, Professor, Department of Linguistics, University of North Texas, Denton; ‘Frames of reference in syntax in Lamkang verb’; 4 July 2017.

Prof. Prakash Sinha, Professor, Department of Ancient History, Culture & Archaeology, University of Allahabad, India; ‘Decoding symbolism of prehistoric tools: a cognitive approach to Archaeology’; 21 August 2017.

**Maths**

**Mechanical**

**Environment**
Prof. George van Driem, Institut für Sprachwissenschaft, Universität Bern, 3000 Bern 9, Switzerland; ‘New insights in North East Indiaas a throughfare in human prehistory’; 4 July 2017.

Dr. Tanmoy Bhattacharya, Department of Linguistics, University of Delhi; ‘Peopling of the North East of India: Stories of Migration and Contact’; 4 July 2017.


Energy
Pankaj Kalita, Munu Borah, Rupam Katakai, Dipti Yadav, Dipam Patowary, Rupam Patowary; “Sustainable Biofuels Development in India, Biogas and Fuel Cell as Vehicular Fuel in India”; Springer International Publishing; 2017; 87-133; 978-3-319-50217-5.


Energy
Pankaj Kalita, Munu Borah, Rupam Katakai, Dipti Yadav, Dipam Patowary, Rupam Patowary; “Sustainable Biofuels Development in India, Biogas and Fuel Cell as Vehicular Fuel in India”; Springer International Publishing; 2017; 87-133; 978-3-319-50217-5.
The induction programme for the new batch of students was organized at the Dr. Bhupen Hazarika Institute Auditorium. Director of the Institute, Prof. Gautam Biswas, Dean, Academic Affairs, Prof. M. G. P. Prasad, Dean, Students’ Affairs, Prof. Chandan Mahanta, Dean, Alumni and External Relations, Prof. Ravi M. Punekar, Assoc. Dean, R&D, Prof. Gopal Das, Chairman, JEE (Advanced), Dr. H. B. Kaushik, Kaushik, Vice President, Students’ Gymkhana, Mr. Nikhil Nagaraj spoke about important topics the new students need to know. The induction programme continued for a week.
Prof. Bhisma Kumar Patel, Professor, Department of Chemistry, was awarded the prestigious Govt. of Odisha “Samanta Chandra Sekhar Award” for his outstanding contribution to science and technology. In the picture here, Prof. Patel is seen receiving the award from the Hon’ble Chief Minister of Odisha, Shri Naveen Patnaik.

Dr. Lalit Mohan Pandey, of Department of Biosciences and Bioengineering, IIT Guwahati, has been selected for the "Institution of Engineers (India) - IEI Young Engineers Award 2017-2018" in Environmental Engineering.

Dr. Manish Kumar Goyal of Dept. of Civil Engineering, has been chosen for "IEI YOUNG ENGINEERS AWARD 2017-2018" in Civil Engineering discipline.

Prof. Mihir Kumar Purkait of Department of Chemical Engineering has been admitted as a Fellow of the Royal Society of Chemistry (FRSC)

Dr. Debabrata Sikdar, Dept. of EEE was awarded the The Douglas Lampard Electrical Engineering research prize and medal for 2016 by the Monash University, Australia. The award was conferred on Dr. Das for the Best PhD thesis in the Department of Electrical and Comuter Systems Engineering. The award consisted of a Citation, Medal and Cash AUD 1000.

Prof. Rakesh Singh Kshetrimayum, Dept. of Electronics and Electrical Engineering, and his co-researcher Dr. Brijesh Kumbhani, have been awarded the prestigious IETE S. K. Mitra Memorial Award 2017 in the category of Best Research Oriented Paper for their paper entitled “Performance Analysis of MIMO Systems with Antenna Selection over Generalized k -µ Fading Channels”

Prof. Utpal Bora Centre for the Environment was Felicitated on 17 Sept 2017 by the North East Students Youth Summit 2017 as the Distinguished person in multiple fields of NE

Dr. P. Muthukumar, Dept. of Mechanical Engineering received the Fulbright-Nehru Academic & Professional Excellence Award (Teaching & Research) 2017 by the Indo - U.S. Science and Technology Forum.

Poonam Kumari, Dept. of Mechanical Engineering received the Young Engineer of India award from the Indain National Academy of Engineers (INAE)

Dr. S. K. Dwivedy received the award for Excellence for the paper published in Mechanism and Machine Theory journal as one of the top 10 most cited papers since its first publication

Dr. M. Ravi Sankar, Dept. of Mechanical Engineering was awarded the Skill India Indo Global Research Excellence Award by the Andra Pradesh and Telengana Skill Development Chapter.

Dr. M. Ravi Sankar, Dept. of Mechanical Engineering was awarded the Venus International Faculty Award for Outstanding Faculty in Mechanical Engineering.
Dr. Mamilla Ravi Sankar receiving the Best Paper award (First Position) in International Conference on Manufacturing Technology and Simulation (ICMTS – 2017) during 7th – 8th July, 2017 at Indian Institute of Technology Madras, India

Prof. Sambit Mallick of Department of Humanities and Social Sciences, has been chosen as the Fellow of the Royal Asiatic Society of Great Britain and Ireland, 18 September October 2017.

The ecosystem resilience map of India from 2000-2014 developed by a team led by Dr. Manish Kumar Goyal from the Civil Engineering Department of IIT Guwahati - prepared for the first time using high resolution remote sensing satellite data for all river basins - found that two-third of the India’s terrestrial ecosystems is not resilient to drought. The results were published in Global Change Biology, a journal from the Wiley group.

Researchers at Indian Institute of Technology Guwahati have taken the first successful step in treating peripheral nerve damage which can result from traumatic injuries caused by accidents, physical conflict, bullet wounds as well as during surgical intervention. The nerve conduits synthesised by the researchers and implanted in rats with sciatic nerve injury showed “excellent” functional recovery one year after implantation. The results were published in the journal Biomedical Materials.

A team led by Prof. Utpal Bora from the Department of Biosciences and Bioengineering at IIT Guwahati synthesised nerve conduits by electrospinning a mixture of silk fibroin protein and electrically conductive polymer called polyaniline. To produce tubular shaped nerve conduits, the researchers rolled the electrospun sheets multiple times over a stainless steel spindle.

Researchers at Indian Institute of Technology Guwahati have fabricated a 3D cardiac tissue patch using silk protein membranes seeded with heart muscle cells. The patch can potentially be used for regenerating damaged heart tissue. The results were published in the Journal Materials Chemistry B.

According to Prof. Biman Mandal from the Department of Biosciences and Bioengineering, IIT Guwahati, who led the research, the fabricated 3D patch can be implanted at the site of damage to help the heart regain normal function. It can also be used for sealing holes in the heart.

The team led by Prof. Mandal tested both mulberry (Bombyx mori) and non-mulberry (Antheraea assama) silk to fabricate the membrane.

Summer School in Neuroimaging

The goal of the summer school is to cover applications of the statistical and machine learning approaches in the analysis of neuroimaging data comprising both structural and functional images and appreciate the related cognitive neuroscience research. The expected outcomes of the five-day summer school are gaining familiarity with neuroimaging as a tool for Cognitive Neuroscience investigation, exposure to the data processing pipeline and appreciation of the recent advances and open research questions in the domain of neuroimaging. The Summer School in Neuroimaging was convened by Dr. Navin Gupta , Department of BSBE at IIIT Hyderabad from 16-20 July 2017.
A Memorandum of Understanding was signed between the Dept. of Design, IIT Guwahati and FTDC- Ferous Materials Technology Development Centre Hyderabad on 14th September 2017.

The scope of MOU specifically covers research interaction between NFTDC and IITG leading to advanced engineering research thereby enabling system level R&D covering product development, process development and manufacturing in a System Design &Engineering perspective so as to serve the requirements of the country.

Under this MOU the first collaborative research programme in Electric Vehicle Technologies has been initiated in 2017-18 with E-Mobility Lab – EEE department and Useability –HCI lab – Department of Design. An electric vehicle is under design and development.

Lecture Series on “Cultural Genetics” was successfully organized by the Centre for the Environment for the undergraduate, postgraduate, research scholars and faculties on 4th July 2017. More than 145 participants including under graduate, post-graduate, research scholars and academicians from across the Assam as well as from neighboring states attended the Lecture series. The lectures of these eminent scientists intended to impart basic knowledge of human evolution, genetic-language diversity and further influence of North-East India, the Indo Burma biodiversity hotspot in intimating the dynamics of lingual diversity. Presentation by the experts and interactive sessions provided first-hand exposure to the participants on the basic nitty-gritty of the discipline and the symposium provided an interactive platform to discuss various research works carried out in Linguistics and associated genetics.

Convenor, Prof. Utpal Bora felicitating Prof. George van Driem with a traditional Aronai

Prof. George van Driem, delivering a talk on “New Insights on North East India as a thoroughfare in human prehistory”

Dr. Tanmoy Bhattacharya, delivering a talk on “Peopling of North East India: Stories of Migration and Contact”

MoU Signed
Two public lectures were organized under Outreach Education Programme at the Institute Conference Centre on 4 August 2017.

The first lecture titled *Technology and Our Future* was delivered by Prof. Arun Chattopadhyay from the Department of Chemistry, IIT Guwahati. He gave a view of the technologies that are being developed in different countries through a number of videos, like spherical tyres, biometric verification, anti-aging treatment using nano-scale robots, detecting diseases using breathe analysis, etc. In his concluding remarks, he spoke of the success recently achieved by his group of researchers in developing a technique to detect jaundice using a thumb imprint, i.e. without having a blood test. A person is said to have jaundice when the bilirubin concentration in the blood typically exceeds 12 ppm in adults and 50 ppm in a newborn. In general, it is confirmed by a blood test within a few hours.

The second lecture titled *Nerve Conduits for Neurosurgery* was delivered by Prof. Utpal Bora from the Department of Biosciences and Bioengineering. A team of researchers, led by Dr. Bora had synthesised nerve conduits by electrospinning a mixture of silk fibroin protein and electrically conductive polymer called polyaniline. To produce tubular shaped nerve conduits, the researchers rolled the electrospun sheets multiple times over a stainless steel spindle. This is the first successful step in treating peripheral nerve damage which can result from traumatic grade 4 & 5 injuries caused by accidents, physical conflict, bullet wounds as well as during surgical intervention. The nerve conduits synthesised by the researchers and implanted in rats with sciatic nerve injury, at College of Veterinary Science, Khanapara, showed excellent functional recovery within one year after implantation. The next step is to conduct trials on pigs, which are genetically and physiologically closer to humans.

This was followed by a highly active interaction session with the audience comprising mostly of school students. There were also faculty and staff members of the institute who have benefited from the event.
The SPIE, IIT Guwahati student chapter organized a day long program “Outreach Education Program” at Barhampur Sahid Smriti Adarsha Girls’ High School and Barhampur S. S. I. Higher Secondary School, Barhampur Nagaon, Assam. This program was organized in association with Department of Physics and Outreach Education Program Office, IIT Guwahati. Optics at the high school level were taught in class VII, IX & X by Mr. Prahlad Baruah, Mr. Santanu Konwar, Mr. Pulak Dutta, Mr. Rahul Kesarwani, Mr. Jagamohan Rao and Mr. S. GautamBudha, all of whom are research scholars at the Department of Physics, IIT Guwahati and are active members of SPIE, IITG student chapter. Some simple science model designed using the waste materials were also demonstrated by Dr. Sidananda Sarma and Mr Aditya Kalita, Technical Officer, Dept. of Physics.

The cooperation from the school authorities, the teachers, and the students were very encouraging. All the members of IITG were felicitated by the schools authorities and they offer their sincere thanks to IIT Guwahati for organizing such an event.

In spite of many meritorious students in this region, it seems they lack the confidence to appear for the national level exams such as NET, GATE and JAM etc. and the percentage of qualified candidates is meager compared to the promise that exists in the region. Thus a problem solving camp was organized on 9 September 2017 on Physics for the college students of Guwahati. Approximately 70 students from 6 different colleges in Guwahati. Several problems from the past years GATE, JAM and NET exams were solved and the students gathered enough confidence at the end of the session. There are regular follow up of performance of these students are being done, in collaboration with the teachers of those colleges.

As a part of the outreach initiative of the Institute, the Department of mathematics held a two-week Summer Training Camp in Mathematics during 3-14 July, 2017 for undergraduate students pursuing Mathematics. Twenty students drawn from different colleges/universities of the North East region participated in the programme. The selection of the participants was on the basis of their performance in the Madhava Mathematics Competition held on January 08, 2017. The students were trained in basic mathematics through short courses in Real Analysis, Linear Algebra, Modern Algebra and Differential Equations.

A day long event on 4 July 2017 was organized to speak to the school and college children at St. Andrews College, Shillong. Extensive interaction on basic sciences and career counseling was conducted with a large number of students (approximately 250). A capacity building cum refresher course was also organized for the teachers of nearby schools and colleges.
In the year 1965, some of the prominent students of Late Dr. S. Radhakrishnan organized a gathering to pay obeisance to the Great Teacher of repute. In that gathering, in his speech Dr. Radhakrishnan expressed his deep reservation regarding his birth anniversary celebration, and emphasized that his birth anniversary should be celebrated as 'Teachers' Day', as mark of respect, love and admiration to all the teachers.

Since then, 5th September, the birth anniversary of well-known diplomat, scholar, the President of India and above all, a teacher, Dr. Radhakrishnan is celebrated as Teachers' Day as a mark of tribute to the contribution made by teachers towards our society.

The Faculty Affairs Section of the Institute on the occasion of the Teachers Day organized a felicitation ceremony of the teaching members of the Institute who had completed twenty years of service at IIT Guwahati. The welcome address on the occasion was delivered by Prof. Dr. Natesan Srinivasan, Associate Dean of Faculty Affairs, which was followed by an address by Prof. Gautam Biswas, Director, IIT Guwahati. The Founder Director of the Institute Prof. D. N. Buragohain also addressed the gathering on the occasion.

Prof. Dhruba Jyoti Saikia, Senior Professor, National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Pune University Campus, Pune, graced the occasion as the Chief Guest.
The employees of IIT Guwahati took pledge of Free India from Poverty, Terrorism, Regionalism, Corruption and Non-hygiene by the year 2022 on account of celebration of 70 years of Freedom and 75 years of Quit India Movement. The pledge was administered by Prof. Gautam Biswas, Director, IIT Guwahati, in the presence of Prof. P. K. Bora, Deputy Director, and Shri U. C. Das, Registrar of the Institute.

The following faculty members of the Institute, who had completed twenty years of service at IITG were felicitated.

Prof. Dhirendra Nath Buragohain, Prof. Anil Mahanta, Prof. Gautam Barua, Prof. Jubaraj Bikash Baruah, Prof. Sukumar Nandi, Prof. Alika Khare, Prof. Anil Dattatraya Sahasrabudhe, Prof. Charudatt Yashwant Kadolkar, Prof. Rafikul Alam, Prof. Arun Chattopadhyay, Prof. Abu Taleb Khan, Prof. Anoop Kumar Dass, Prof. Prabin Kumar Bora, Prof. Durga Charan Dalal, Prof. Rajiv Tiwari, Prof. A. Srinivasan, Prof. P. S. Robi, Prof. Bhisma Kumar Patel, Prof. Sajith Gopalan and Prof. Anup K. Gogoi.

Pledge Ceremony
Invited Lectures delivered by Faculty members of IIT Guwahati in India and Abroad

**Computer Science**

Shivashankar B. Nair; “Immuno-Inspired Computing”; Dept. of Computer Science, St. Anthony’s College, Shillong; 28 August 2017.

John Jose; “How to transform the student in you to a national asset?”/ “How to teach?, How to excel as a teacher?”; St. Francis de Sales School, Guwahati; 7 September 2017.


John Jose; “Effective Teaching and Assessment Methodologies”; Rajagiri School of Engineering and Technology, Kochi, Kerala; 15 July 2017.


**Design**

Keyur Sorathia; “Different shades of user involvement: participatory design, co-design, user centered design”; Indian Institute of Technology Bombay: Interact 2017; 27 September 2017.


Sougata Karmakar; “Consideration of Ergonomics in various stages of Product Design Process’ and ‘Virtual Ergonomics for Product Design”; PEC University of Technology, Chandigarh, India; 26 September 2017.

**Electronics**


Ayon Ganguly; “Analysis of simple step-stress model in presence of competing risks”; Grenoble Institute of Technology and University Grenoble Alpes, Grenoble, France; 03 July 2017.

**Maths**

Rupam Barman; “Counting points on Dwork hypersurfaces and hypergeometric series”; University of Caen, France; 03 July 2017.

**Mechanical**


P. Muthukumar; Green Energy Technologies; NIT Silchar, Assam; 26th Sept 2017.

**Environment**


Prof. Utpal Bora; “Types of research and innovation, their similarities and differences”; USTM, Guwahati; 6 Aug 2017.

New Joinings

Dr. Ashok Singh Sairam  
Associate Professor  
Mathematics

Dr. Daksha Chandu Parmar  
Assistant Professor  
Humanities

Dr. Prasad Khanolkar  
Assistant Professor  
Humanities

Dr. Kiran Keshavamurthy  
Assistant Professor  
Humanities

Dr. Narendra K. Sharma  
Visiting Professor  
Humanities

Dr. Vipul Dutta  
Assistant Professor  
Humanities

Dr. Ranu Roychoudhuri  
Assistant Professor  
Humanities

Dr. Mahima Arrawatia  
Assistant Professor  
Electronics

Dr. Rishikesh Dilip Kulkarni  
Assistant Professor  
Electronics

Dr. Salil Kashyap  
Assistant Professor  
Electronics

Mr. Paban Bujor Barua  
Technical Officer Gr.-II  
Electronics

Mr. Gobinda Chhetry  
Technical Officer Gr.-II  
Nanotechnology

Ms. Sayanika Das  
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