

THE MONITOR

The Quarterly Newsletter

October - December 2017 | Volume VIII, Issue IV



Indian Institute of Technology Guwahati

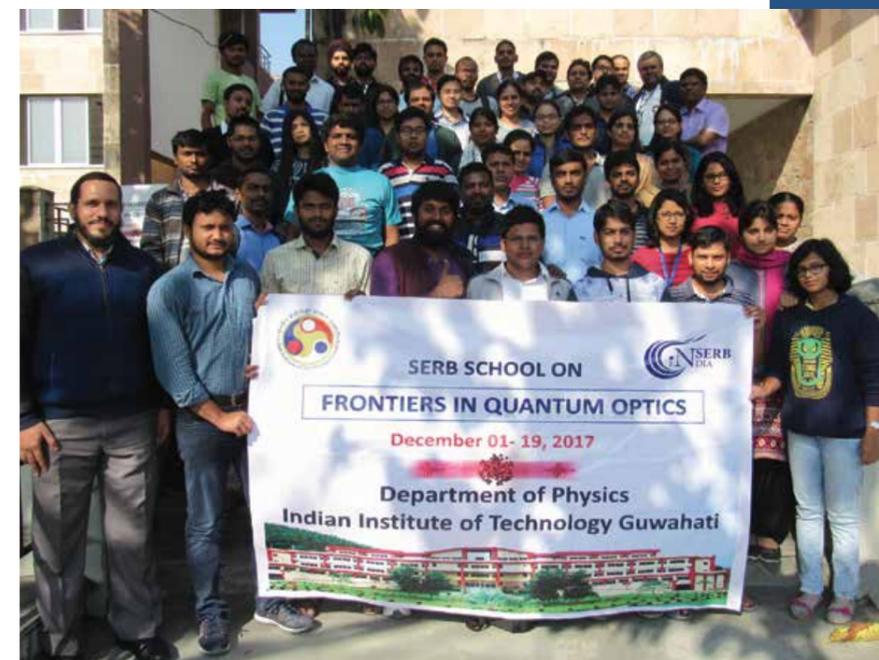
IN THIS ISSUE



SERB School on Frontiers in Quantum Optics

Department of Physics, IIT Guwahati organized a DST sponsored SERB School (formerly known as SERC School) on Frontiers in Quantum Optics from 01-19 December, 2017. The objective of the school was to prepare and motivate research students, post doctoral fellows, and lecturers towards building up thorough knowledge in the fascinating area of quantum optics and also to be acquainted with the recent progresses both theoretical and computational fronts. The course was significant owing to possible realization of futuristic applications such as quantum computing, cryptography and teleportation, and exciting advances in laser cooling and trapping.

Eminent speakers from IISc, TIFR, IISERs and IITs delivered their lectures. 40 outstation participants, comprising of Ph.D. and Post-Doc. students, selected through a screening process, attended the course.



ICANN2017

5th International Conference on Advanced Nano-material and Nanotechnology (ICANN-2017) was organized by Centre for Nanotechnology at IITG during 18-21 December 18-21 2017. This was another major international conference being held in the North-Eastern region of India, in the area of Nano science and Nanotechnology. The international conference brought eminent scientists, technologists and young researchers from several disciplines across the globe together to provide a common platform for discussing their achievements and newer directions of research. The ICANN-2017 conference was focused on Advanced Nano-material for Nano engineering and recent advances in nanotechnology, covering fields from theory and experiment to applications of nanostructured materials in technology. The scientific program consisted of plenary sessions, invited talks, oral and poster presentations.

Topics: Synthesis and self assembly of nanomaterials, Nanoscale characterisation, Nanophotonics & Nanoelectronics, Nanocomposites, Nanomagnetism, Nanomaterials for Energy, Computational Nanotechnology, Commercialization of Nanotechnology, Nanotheranostics, Nanosensors and Actuators, Nanobiotechnology, Theranostic Devices.





Prof. Gautam Biswas, Director, IIT Guwahati was conferred Honorary Doctorate by NIT Agartala at its tenth convocation held on 11 November 2017.



A team lead by the Hon'ble Director of IITG, Prof. Gautam Biswas met the Hon'ble Chief Minister of Assam, Shri Sarbananda Sonowal to hand over a cheque, as a token of contribution for the flood affected people of Assam, to Chief Minister's flood relief fund, collected through voluntary contribution from the IIT Guwahati community.

Students Statistics

Sl. No.	Department/ Centre	No. of Students	No. of UG Students	No. of PG Students	No. of PhD Students	No. of Foreign Students
1	Computer Science and Engineering	545	349	84	112	4
2	Electronics and Electrical Engineering	805	496	117	192	2
3	Mechanical Engineering	743	319	212	212	7
4	Civil Engineering	701	294	206	201	11
5	Design	308	183	49	76	4
6	Biosciences and Bioengineering	467	192	72	203	2
7	Chemical Engineering	526	259	88	179	6
8	Physics	397	167	95	135	2
9	Chemistry	470	158	94	218	0
10	Mathematics	368	209	96	63	0
11	Humanities and Social Sciences	154	0	60	94	1
12	Energy	101	0	32	69	2
13	Environment	50	0	0	50	0
14	Nanotechnology	41	0	0	41	0
15	Rural Technology	31	0	18	13	0
16	Linguistic Science and Technology	9	0	0	9	0

PhD Completed during October– December 2017

Sl. No.	Department/ Centre	No. of Students	Sl. No.	Department/ Centre	No. of Students
1	Computer Science and Engineering	03	9	Chemistry	06
2	Electronics and Electrical Engineering	09	10	Mathematics	02
3	Mechanical Engineering	03	11	Humanities and Social Sciences	05
4	Civil Engineering	07	12	Energy	00
5	Design	2	13	Environment	01
6	Biosciences and Bioengineering	03	14	Nanotechnology	00
7	Chemical Engineering	09	15	Rural Technology	00
8	Physics	00	16	Linguistic Science and Technology	00

Conference/ Seminar Abroad

BSBE

Dr. Kannan Pakshirajan, Professor attended the International Conference on Challenges in Environmental Sciences & Engineering (CESE - 2017) held at Empark Grand Hotel Kunming, China from 11.11.17 to 15.11.17.

Dr. Manish Kumar, Associate Professor attended the 10th International Leptospirosis Society Meeting (ILS 2017) held at Palmerston North, New Zealand from 27.11.17 to 01.12.17.

Dr. Lingaraj Sahoo, Professor visited Gifu University for Collaborative research work and future planning of joint education from 15.12.17 to 23.12.17

Chemistry

Dr. Bhisma K. Patel, Professor attended the RSC-NOST symposium on organic and Bimolecular Chemistry Symposium held at University of Leeds, Leeds, United Kingdom from 03.10.17 to 06.10.17.

Dr. Parameswar K. Iyer, Professor delivered an invited lecture at the 2nd Asian Conference on Chemosensors & Imaging Probes (Asian – ChIP 2017) held at ICCAS Beijing, China from 23.10.17 to 26.10.17.

Dr. Parameswar K. Iyer, Professor delivered an invited lecture at the 18th IUMRS International Conference in Asia (IUMRTS – ICA 2017) held at Taipei, Taiwan from 05.11.17 to 09.11.17.

Dr. Mohammad Qureshi, Professor delivered an Invited talk at the Indo – German Meeting on Elementary Reactions in Functional Materials : From Biophysics to Technological Applications at University of Heidelberg, Germany from 14.11.17 to 17.11.17.

Civil

Dr. S. A. Kartha, Associate Professor attended the 16th International Waste Management and Landfill Symposium (SARDINA 2017) held at Cagliari, Italy from 02.10.17 to 06.10.17.

Computer Science

Dr. John Jose, Assistant Professor attended the 25th IFIP / IEEE International Conference on Very Large Scale Integration (VLSI - SoC) held at Yas Viceroy, Yas Island, UAE from 23.10.17 to 25.10.17.

Dr. Jatindra Kr. Deka, Professor attended the IEEE TENCON 2017 held at The Wembley A St Giles Premier Hotel, Penang, Malaysia from 05.11.17 to 08.11.17.

Dr. Deepanjan Kesh, Assistant Professor attended the 11th Annual International Conference on Combinatorial Optimization and Application (COCO'A'17) held at Shanghai, China from 16.12.17 to 18.12.17.

Design

Dr. Amarendra Kr. Das, Professor attended the TED MINT organized by KTH, Royal Institute of Technology at Campus Värnamo and Kungliga Tekniska Högskolan, Stockholm from 19.11.17 to 25.11.17.

Dr. Supradip Das, Assistant Professor attended the TED MINT organized by KTH, Royal Institute of Technology at Campus Värnamo and Kungliga Tekniska Högskolan, Stockholm from 19.11.17 to 25.11.17

Electronics

Dr. Shaik Rafi Ahamed, Associate Professor attended the IEEE Region 10 Conference (TENCON) held at Penang, Malaysia from 05.11.17 to 08.11.17.

Dr. Suresh Sudaram, assistant Professor attended the 14th IAPR International Conference on Document Analysis and Recognition (ICDAR 2017) held at Kyoto, Japan from 09.11.17 to 15.11.17.

Dr. Ramesh Kumar Sonkar, Assistant Professor attended the Asia Communications and Photonics Conference (ACP) held at Guangzhou, China from 10.11.17 to 13.11.17.

Humanities

Dr. Sambit Mallick, Associate Professor attended the 4th International Conference on Poverty and Sustainable Development (ICPSD 2017) held at Colombo, Sri Lanka from 05.12.17 to 06.12.17

Mechanical

Dr. Debabrata Chakraborty, Professor attended the 3rd international Conference on the Science and Engineering of materials (ICoSEM) held at Kuala Lumpur, Malaysia from 24.10.17 to 25.10.17

Dr. K. S. R. K. Murthy, Professor attended the 3rd international Conference on the Science and Engineering of materials (ICoSEM) held at Kuala Lumpur, Malaysia from 24.10.17 to 25.10.17.

Dr. Gautam Biswas, professor attended the International Mechanical Engineering Congress & Exposition (IMECE 2017) held at Tampa, Florida from 03.11.17 to 09.11.17.

Dr. Poonam Kumari, Assistant Professor attended the 3rd Euro Congress on Iron, Steel and Construction Engineering at London, United States from 16.11.17 to 17.11.17.

Dr. Swarup Bag, Associate Professor attended the International Conference on Recent Advances in Materials & Manufacturing Technologies (IMMT 2017) held at Dubai, United Arab Emirates (UAE) from 28.11.17 to 29.11.17.

Dr. Sukhomay Pal, Associate Professor attended the International Conference on Recent Advances in Materials & Manufacturing Technologies (IMMT 2017) held at Dubai, United Arab Emirates (UAE) from 28.11.17 to 29.11.17.

Dr. P. S. Robi, Professor attended the International Conference on Recent Advances in Materials & Manufacturing Technologies (IMMT 2017) held at Dubai, United Arab Emirates (UAE) from 28.11.17 to 29.11.17.

Dr. Pranab Kr Mondal, Assistant Professor Visited King Mongkut's University of Technology Thonburi, Bangkok, Thailand for a Collaborative Research on Microscale Heat Transfer from 11.12.17 to 25.12.17

Dr. Gautam Biswas, Professor attended the Japan – India YNU Symposium 2017 on Emerging Materials & Systems for Green and Life Innovations at Yokohama, Japan from 13.12.17 to 14.12.17.

Dr. Anoop Kumar Dass, Professor 12th International conference on Mechanical Engineering 2017 (ICME 2017) held at Dhaka, Bangladesh from 20.12.17 to 22.12.17.

Dr. Debabrata Chakraborty, Professor attended the 12th International conference on Mechanical Engineering 2017 (ICME 2017) held at Dhaka, Bangladesh from 20.12.17 to 22.12.17.

Dr. Rajiv Tiwari, Professor attended the 3rd International Conference on Mechanical, Industrial and Materials Engineering 2017 (ICMIME 2017) at Rajshahi, Bangladesh from 28.12.17 to 30.12.17

Physics

Dr. Gagan Kumar, Assistant Professor attended the 19th International Conference on Optics and Photonics (ICOP 2017) at Singapore from 09.11.17 to 10.11.17.

Dr. Tapan Mishra, Assistant Professor visited Tokyo Institute of Technology, Tokyo, Japan to attend discussion meeting following MoU between Tokyo Mech and Deptt of Physics ,IIT Guwahati from 28.11.17 to 05.12.17.

Dr. Debaprasad Maity, Assistant Professor attended the Third LeCosPA International Symposium – Cosmic Prospects held at Taipei, Taiwan from 27.11.17 to 29.11.17.

Dr. Subhradip Ghosh, Professor visited Tokyo, Japan to attend discussion meeting following MoU between Tokyo Mech and Deptt of Physics ,IIT Guwahati at Tokyo Institute of Technology from 28.11.17 to 05.12.17.

Dr. Subhradip Ghosh, Professor visited Tokyo, Japan to attend discussion meeting following MoU between Tokyo Mech and Deptt of Physics ,IIT Guwahati at Tokyo Institute of Technology from 28.11.17 to 05.12.17.

Energy

Dr. Pankaj Kalita, Associate Professor visited Shantou, China for Research Collaboration at Shantou University, from 16.12.17 to 26.12.17

New Research Projects

BSBE

Title: Optimal design and development of proximal femoral locking plate.

Funding Agency: IITG.

Principal Investigator: Dr. Souptick Chanda.

Title: Sequestration of hexavalent chromium from simulated and electroplating effluent using novel lignocellulosic biosorbents.

Funding Agency: IITG.

Principal Investigator: Dr. Selvaraju Narayanasamy.

Title: Use of silk from northeast India for culture and transplantation of corneal endothelial cells.

Funding Agency: DBT.

Principal Investigator: Dr. Biman B. Mandal.

Chemistry

Title: Organocatalytic Asymmetric Reactions with 3-Carbomethoxy-Dihydro-2-Quinolones.

Funding Agency: CSIR.

Principal Investigator: Dr. Subhas Chandra Pan.

Civil

Title: Comprehensive rainfall induced landslide hazard analysis of Sunsali and Noonmati hills in Guwahati region.

Funding Agency: DST.

Principal Investigator: Dr. A. Murali Krishna.

Computer Science

Title: Approximate geodesic nearest neighbors and shortest paths.

Funding Agency: SERB.

Principal Investigator: Dr. R. Inkulu.

Title: Algorithms for Graph Similarity Self Join.

Funding Agency: SERB.

Principal Investigator: Dr. Amit Awekar.

Design

Title: Industrial Design Concept of e-mobility vehicle.

Funding Agency: NFTDC.

Principal Investigator: Dr. P. Yammiyavar.

Electronics

Title: Wireless networking for sustainable rural connectivity.

Funding Agency: DST.

Principal Investigator: Dr. Satyam Agarwal.

Title: Design of solid state microwave oven using gallium nitride power amplifier.

Funding Agency: IITG.

Principal Investigator: Dr. Mahima Arrawatia.

Title: Design of smart tunable plasmonic nanoparticle-based optical metadevices.

Funding Agency: IITG.

Principal Investigator: Dr. Debabrata Sikdar.

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. Rajshree Bedamatta.

Mathematics

Title: Numerical analysis and computational methods for hyperbolic conservation laws.

Funding Agency: SERB.

Principal Investigator: Dr. Sudarshan Kumar Kenettinkara.

Mechanical

Title: Understanding human intent through semantic perception for augmenting human machine interaction.

Funding Agency: IITG.

Principal Investigator: Dr. Shyamanta Moni Hazarika.

Title: Manufacturing and testing of fibre reinforced composites.

Funding Agency: IITG.

Principal Investigator: Dr. Nelson Muthu.

Title: Amplitude formation in vector finite elements for electromagnetic wave propagation.

Funding Agency: IITG.

Principal Investigator: Dr. Arup Kumar Nandy.

Environment

Title: A novel membrane assisted bioprocess for heavy metal removal and recovery as nano powders from acid mine drainage.

Funding Agency: CSIR.

Principal Investigator: Dr. Kannan Pakshirajan

Title: Microbial recovery and synthesis of elemental Selenium and Selenium based Nanomaterials from Wastewater for Biotechnological Applications.

Funding Agency: DBT.

Principal Investigator: Dr. Siddhartha Narayan Borah;
Mentor: Prof. Kannan Pakshirajan.

Rural Technology

Title: DONER/STINER/NEHHDC.

Funding Agency: NEHHDC

Principal Investigator: Dr. S. K. Kakoty.

Title: Development of a process technology for production of functionally active fermented soy product.

Funding Agency: IITG.

Principal Investigator: Dr. Siddhartha Singha.

Title: Terrestrial weed management using different composting techniques.

Funding Agency: IITG.

Principal Investigator: Dr. Meena Khwairakpam.

IITG

Title: Establishment of Research Parks under the 'Start-up India Initiative in Higher Educational Institutions (SIHIEI)'.

Funding Agency: MHRD.

Principal Investigator: Dean, R&D.

Patents

Inventor: Mrutyunjay Maharana; Alakesh Nanda; Sisir Kumar Nayak; Niranjana Sahoo.

Title: Natural and force convection imposed accelerated thermal ageing simulator to predict the life of the transformer oil before using it in the transformers.

Inventor: Amit Kumar Baghel; Shashank Satish Kulkarni; Sisir Kumar Nayak; D. Senthil Kumar.

Title: Parabolic pyramidal horn antenna.

Inventor: Mrutyunjay Maharana; Moon Moon Bordeori; Niharika Baruah; Sisir Kumar Nayak; Niranjana Sahoo.

Title: Design and development of an automated open beaker oxidative ageing assessment apparatus.

Inventor: Anamika Dey; Ashish Singh; Deepanjalee Dutta; Parameswar Krishnan Iyer; Siddhartha Sankar Ghosh.

Title: Method for the Detection of Gram Positive and Gram Negative Bacteria by Ultra low Operating Voltage n type Organic Field Effect Transistor.

Inventor: Juan Chowdhury; Gaurav Kumar; Karuna Kalita; Sashindra Kumar Kakoty.

Title: Switched Reluctance Actuators for Shuttle Based Looms.

Inventor: Juan Chowdhury; Gaurav Kumar; Karuna Kalita; Sashindra Kumar Kakoty.

Title: High Force Density Quad-Air Gap Switched Reluctance Motor.

Inventor: Debasis Manna; Subhankar Panda; Nirmalya Pradhan; Ashalata Roy; Dr. Sachin Kumar.

Title: Inhibitors of indoleamine 2,3-dioxygenase 1 (IDO1).

Inventor: Nagarjuna Nallam; Prateek Kumar Sharma.

Title: A passive continuous-mode charge-sharing vector modulator downmixer for self-interference cancellation.

Inventor: Mehak Kaushal; Saumya Ahlawat; Gargi Goswami; Debasish Das.

Title: Production of liquid biofuels via dual substrate fermentation of *C. sporogenes* utilizing lignocellulosic sugar hydrolysate and crude glycerol.

Inventor: L. N. Sharma

Title: DEVICE FOR HUMAN SPEECH PRODUCTION USING 3-DIMENSIONAL GLOTTAL VIBRATIONS.

Inventor: Avilash Sahoo; S. K. Dwivedy; P. S. Robi.

Title: Compact Remotely Operated Underwater Vehicle (ROV) / Autonomous Underwater Vehicle (AUV).

Inventor: Bosanta Ranjan Boruah; Ranjan Kalita; Satya S G Buddha.

Title: Laser scanning microscopy using different polarizations of the illumination beam with minimal time between the two polarizations.

Collaboration with Universities



The Gifu University Winter School Program, already in its 3rd year, is one of the wonderful success stories for mobility programs at IIT Guwahati. It has seen enthusiastic participation from the students of IIT Guwahati. This year six (6) students have been selected for this prestigious program. Prof. Kannan Pakshirajan, Head of Department, BSBE IIT Guwahati is now at Gifu University as one of the Resource Persons for the Winter School.

Prof. Pakshirajan is seen here with other faculty members of Gifu University along with students of IIT Guwahati & other participating students from UKM, Malaysia.



The Director of IIT Guwahati, Prof. Gautam Biswas has been at the forefront of this initiative along with other faculty members of IIT Guwahati. Prof. Biswas visited the Yokohama National University (YNU) to strengthen our engagement with the University and also to deliver a Keynote Lecture in an International Symposium.

Seen above is Prof. Gautam Biswas with Indian and Japanese delegates at the Pre-Symposium meeting and separately (L-R) with Prof. Nishino (YNU), Prof. Suzuki (Gifu University) Prof. Koyama (Gifu University) and Prof. Suzuki (YNU).

IIT Guwahati has in the recent past been actively pursuing academic and research collaborations with top Universities in Japan such as Tokyo Institute of Technology, Kyoto University, Gifu University, Hokkaido University, Kagawa University, Kyoto Institute of Technology, and a few others. An International Joint Degree Masters and PhD programme in Food Science & Technology and Mechanical Engineering with Gifu University will formally be announced soon.

Delegation from Curtin University, Australia



The delegation from Curtin University, Australia called upon the Director, IIT Guwahati, Prof. Gautam Biswas during their current visit to IIT Guwahati. The delegation led by Prof. Brett Kirk discussed matters related to the Collaborative Doctoral Programme between IIT Guwahati and Curtin University. The delegation also engaged with representatives of

various departments to explore possibilities of setting up Joint Research Centres.



Distinguished Lecture Series

Shri P. S. Raghavan, Convenor, National Security Advisory Board & Former Secretary, MEA, Former Ambassador of India to Russia, Ireland & Czech Republic delivering his lecture on "From Non-alignment to Multi-alignment: Challenges to India's Foreign Policy in 21st Century".

The event is part of the Distinguished Lecture Series: An initiative of Public Diplomacy Division, the Ministry of External Affairs, Govt. of India

Research Publications (Journals)

BSBE

K. K. Ghosh, A. Prakash, V. Balamurugan, M. Kumar; Catecholamine modulated novel surface exposed adhesin LIC20035 of *Leptospira* binds host extracellular matrix components and is recognized by host during infection; *Applied and Environmental Microbiology*; 2017; DoI: 10.1128/AEM.02360-17.

Venkateswara R. Naira, Debasish Das, Soumen K. Maiti; Designing a CO₂ supply strategy for microalgal biodiesel production under diurnal light in a cylindrical-membrane photobioreactor; *Bioresource Technology*; 2017; DoI: 10.1016/j.biortech.2017.11.087.

Shalini Singh, Ekta Kumari, Ruchika Bhardwaj, Ritesh Kumar and Vikash Kumar Dubey; Molecular events leading to death of *Leishmania donovani* under spermidine starvation after hypericin treatment; *Chemical Biology & Drug Design*; 2017; 90; 962-967.

Ritesh Kumar, Kartikeya Tiwari and Vikash Kumar Dubey; Methionine aminopeptidase 2 is a key regulator of apoptotic like cell death in *Leishmania donovani*; *Scientific Reports*; 2017; 7; 95.

Ruchika Bhardwaj, Mousumi Das, Shalini Singh, Adarsh Kumar Chiranjivi, Sitraraau Vijaya Prabhu, Sanjeev Kumar Singh and Vikash Kumar Dubey; Evaluation of CAAX prenyl protease II of *Leishmania donovani* as potential drug target: infectivity and growth of the parasite is significantly lowered after the gene knockout; *European Journal of Pharmaceutical Sciences*; 2017; 102; 156-160.

Shyamali Sarma, Avinash Anand, Vikash Kumar Dubey, V.S. Moholkar; Metabolic flux network analysis of hydrogen production from crude glycerol by *Clostridium pasteurianum*; 2017; S0960-8524; 17; 30450-30459.

Sitrarasu Vijaya Prabhu, Kartikeya Tiwari, Venkatesan Suryanarayanan, Vikash Kumar Dubey and Sanjeev Kumar Singh; Exploration of potent molecules against CAAX prenyl protease I of *Leishmania donovani* through Pharmacophore based virtual screening approach; *Combinatorial Chemistry & High Throughput Screening*; 2017; 20; 255-271.

Sajitha Sasidharan, Shyni P. C., Nitin Chaudhary, and Vibin Ramakrishnan; Single Crystal Organic Nanoflowers; *Scientific Reports*; 2017; DoI:10.1007/s10989-017-9615-3; 17335.

Surajbhan Sevda, Ibrahim Abu Ressh; Effect of the organic load on salt removal efficiency of microbial desalination cell; *Desalination and Water Treatment*; 2017.

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.

Vibhu Sharma, R. Vinoth Kumar, Kannan Pakshirajan, G. Pugazhenth; Integrated adsorption-membrane filtration process for antibiotic removal from aqueous solution; *Powder Technology*; 2017; 321; 259-269.

John Mary DJS, Manjegowda MC, Kumar A, Dutta A, Limaye AM; The role of cystatin A in breast cancer and its functional link with ER; *J. Genet Genomics*; 2017; 44; 12; 593-597.

Ananya Barman Dibakar Gohain Utpal Bora, Ranjan Tamuli; Phospholipases play multiple cellular roles including growth, stress tolerance, sexual development, and virulence in fungi; *Microbiological Research*; 2017; DoI: 10.1016/j.micres.2017.12.012.

Anand Tiwari, Serena Daniel Ngiilmei, Ranjan Tamuli; The NcZrg-17 gene of *Neurospora crassa* encodes a cation diffusion facilitator transporter required for vegetative development, tolerance to endoplasmic reticulum stress and cellulose degradation under low zinc conditions; *Current Genetics*; 2017; DoI: 10.1007/s00294-017-0794-4.

Arun Goyal, Anil Kumar Verma, Filipe Freire, Carlos M.G.A. Fontes and Shabir Najmudin; Crystal structure and reaction mechanism of glucuronoxylan endo- β -1,4-xylanase; *Acta Crystallographica Section A*; 2017; A73; C235.

Kedar Sharma, Shadab Ahmed, Carlos M.G.A. Fontes, Shabir Najmudin and Arun Goyal; Low-resolution structure analysis of α -L-arabinofuranosidase (CtGH43) by SAXS; *Acta Crystallographica Section A*; 2017; A73; C236.

Ritesh S. Malani, Shubham Patil, Kuldeep, Sankar Chakma, Arun Goyal and Vijayanand Suryakant Moholkar; Mechanistic analysis of ultrasound-assisted biodiesel synthesis with Cu₂O catalyst and mixed oil feedstock using continuous (packed bed) and batch (slurry) reactors; *Chemical Engineering Science*; 2017; 170; 743-755.

Seema Patel, Aruna Rani and Arun Goyal; Insights into the immune manipulation mechanisms of pollen allergens by protein domain profiling; *Computational Biology and Chemistry*; 2017; 70; 31-39.

Rwivoo Baruah, Barsha Deka and Arun Goyal; Purification and characterization of dextransucrase from *Weissella cibaria* RBA12 and its application in in vitro synthesis of prebiotic oligosaccharides in mango and pineapple juices; *LWT - Food Science and Technology*; 2017; 84; 449-456.

Manishekhar Kumar, Samit Nandi, David Kaplan and Biman B Mandal; Localized Immunomodulatory Silk Macrocapsules for Islet-like Spheroid Formation and Sustained Insulin Production; *ACS Biomaterials Science & Engineering*; 2017; 3; 2443-2456.

Shreya Mehrotra, Samit Kumar Nandi, and Biman B Mandal; Stacked Silk-Cell Monolayers as a Biomimetic Three Dimensional Construct for Cardiac Tissue Reconstruction; *Journal of Materials Chemistry B*; 2017; 5; 6325-6338.

M JC, Reardon PJ, Konwarh R, Knowles JC, 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.

Linnea Nilebäck, Dimple Chouhan, Ronnie Jansson, Mona Widhe, Biman B Mandal and My Hedhammar; Silk-Silk Interactions between Silkworm Fibroin and Recombinant Spider Silk Fusion Proteins Enable the Construction of Bioactive Materials; *ACS Applied Materials and Interfaces*; 2017; 9; 31634-31644.

Yogendra P.Singh, Mimi Adhikary, Nandana Bhardwaj, Bibhas K. Bhunia, Biman B. Mandal; Silk fiber reinforcement modulates in vitro chondrogenesis in 3D composite scaffolds; *Biomedical Materials*; 2017; 12; 045012.

Jadi P. Kumar, Biman B. Mandal; Antioxidant potential of mulberry and non-mulberry silk sericin and its implications in biomedicine; *Free Radical Biology and Medicine*; 2017; 108; 803-818.

Avijit Das, Jumi Deka, Adil Rather, Bibhas Bhunia, Partha Saikia, Biman B. Mandal, Kalyan Raidongia, Uttam Manna; Strategic Formulation of Graphene Oxide Sheets for Flexible Monoliths and Robust Polymeric Coatings that Embedded with Durable Bio-inspired Wettability; *ACS Applied Materials and Interfaces*; 2017; 9; 42354-42365.

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

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.

C. Harsha, K. Banik, D. Bordoloi, A. B. Kunnumakkara; Antiulcer properties of fruits and vegetables: A mechanism based perspective; *Food Chem Toxicol*; 2017; 108; 104-119.

A. Amalraj, K. Varma, J. Jacob, C. Divya, A. B. Kunnumakkara, S. J. Stohs, S. Gopi; A Novel Highly Bioavailable Curcumin Formulation Improves Symptoms and Diagnostic Indicators in Rheumatoid Arthritis Patients: A Randomized, Double-Blind, Placebo-Controlled, Two-Dose, Three-Arm, and Parallel-Group Study; *J Med Food*; 2017; 10; 1022-1030.

S. C. Gupta, S. Prasad, A. K. Tyagi, A. B. Kunnumakkara, B. B. Aggarwal; Neem (*Azadirachta indica*): An Indian traditional panacea with modern molecular basis; *Phytomedicine*; 2017; 34; 14-20.

S. Gopi, J. Jacob, K. Varma, S. Jude, A. Amalraj, C. A. Arundhathy, R. George, T. R. Sreeraj, C. Divya, A. B. Kunnumakkara, S. J. Stohs; Comparative Oral Absorption of Curcumin in a Natural Turmeric Matrix with Two Other Curcumin Formulations: An Open-label Parallel-arm Study; *Phytother Res.*; 2017; 12; 1883-1891.

D. Singh, D. Kabiraj, P. Sharma, H. Chetia, P. V. Mosahari, K. Neog, U. Bora; The mitochondrial genome of Muga silkworm (*Antheraea assamensis*) and its comparative analysis with other lepidopteran insects; *PLoS One*; 2017; 12; 11; 1-23.

M. Kaushal, K. V. N. Chary, S. Ahlawat, B. Palabhanvi, G. Goswami, D. Das; Understanding regulation in substrate dependent modulation of growth and production of alcohols in *Clostridium sporogenes* NCIM 2918 through metabolic network reconstruction and flux balance analysis; *Bioresource Technology*; 2017; 249; 767-776.

A. A. Prabhu, V. Venkata Dasu; Dual-substrate inhibition kinetic studies for recombinant human interferon gamma producing *Pichia pastoris*; *Preparative Biochemistry and Biotechnology*; 2017; 47; 10; 953-962.

S. L. Gavya, N. Arora, S. S. Ghosh; Retention of functional characteristics of glutathione-S-transferase and lactate dehydrogenase-A in fusion protein; *Preparative Biochemistry and Biotechnology*; 2017; 1; 1-8.

A. P. Bidkar, P. Sanpui, S. S. Ghosh; Efficient induction of apoptosis in cancer cells by paclitaxel-loaded selenium nanoparticles; *Nanomedicine (Lond)*; 2017; 12; 21; 2641-2651.

A. Tiwari, S. D. Ngilmei, R. Tamuli; The *NcZrg-17* gene of *Neurospora crassa* encodes a cation diffusion facilitator transporter required for vegetative development, tolerance to endoplasmic reticulum stress and cellulose degradation under low zinc conditions; *Current Genetics*; 2017; 1-9.

A. Barman, R. Tamuli; The pleiotropic vegetative and sexual development phenotypes of *Neurospora crassa* arise from double mutants of the calcium signaling genes *plc-1*, *splA2*, and *cpe-1*; *Current Genetics*; 2017; 63; 5; 861-875.

Surajbhan Sevda, Ibrahim Abu Reesh; Improved salt removal and power generation in a cascade of two hydraulically connected up-flow microbial desalination cells; *Journal of Environmental Science and Health, Part A*; 2017; 1-12.

Chemical

Murchana Changmai, Mihir K. Purkait; Detailed study of temperature-responsive composite membranes prepared by dip coating poly (2-ethyl-2-oxazoline) onto a ceramic membrane; *Ceramics International*; 2017; 44; 1; 959-968.

Murchana Changmai, Poulami Banerjee., Karan Nahar, Mihir K. Purkait; A novel adsorbent from carrot, tomato and polyethylene terephthalate waste as a potential adsorbent for Co (II) from aqueous solution: Kinetic

and Equilibrium studies; *Journal of Environmental Chemical Engineering*; 2017; 6; 246-257.

R. K. Das and A. K. Golder; Co₃O₄ spinel nanoparticles decorated graphite electrode: Bio-mediated synthesis and electrochemical H₂O₂ sensing; *Electrochimica Acta*; 2017; 251; 415-426.

R. K. Das and A. K. Golder; Role of supporting electrolytes on the stability of TiO₂-Ti counter electrode during H₂O₂ electrogeneration; *Surf. Eng. Appl. Electrochem*; 2017; 53; 6; 570-579.

Ch. V. Rao and A. K. Golder; Bimetal doping on TiO₂ for photocatalytic water treatment: A green route; *European Water*; 2017; 58; 53-60.

A. Ghosh, D. Bandyopadhyay, J. Sarkar, A. Sharma; Hierarchical micro- and nanofabrication by pattern-directed contact instabilities of thin viscoelastic films; *Physical Review Fluids*; 2017; 2(12); 124004.

L. Xu, D. Bandyopadhyay, P.D.S. Reddy, A. Sharma, S. W. Joo; Giant Slip Induced Anomalous Dewetting of an Ultrathin Film on a Viscous Sublayer; *Scientific Reports*; 2017; 7(1); 14776.

C. Das, K. A. Gebru; Cellulose Acetate Modified Titanium Dioxide (TiO₂) Nanoparticles Electrospun Composite Membranes: Fabrication and Characterization; *Journal of The Institution of Engineers (India): Series E*; 2017; 98(2); 91-101.

K. Samal, C. Das, K. Mohanty; Application of saponin biosurfactant and its recovery in the MEUF process for removal of methyl violet from wastewater; *Journal of Environmental Management*; 2017; 203; 8-16.

S. Saha, C. Das; Spinning basket membrane ultrafiltration of paper industry waste effluent: Experimental and theoretical aspects; *Journal of Environmental Chemical Engineering*; 2017; 5(5); 4583-4593.

S. R. Varade, P. Ghosh; Foaming in aqueous solutions of zwitterionic surfactant: Effects of oil and salts; *Journal of Dispersion Science and Technology*; 2017; 38(12); 1770-1784.

K. Paul, S. K. Achar, S. R. Dasari, V. B. Borugadda, V. V. Goud; Analysis of thermal, oxidative and cold flow properties of methyl and ethyl esters prepared from soybean and mustard oils; *Journal of Thermal Analysis and Calorimetry*; 2017; 130(3); 1501-1511.

S. M. Bhasney, R. Patwa, A. Kumar, V. Katiyar; Plasticizing effect of coconut oil on morphological, mechanical, thermal, rheological, barrier, and optical

properties of poly(lactic acid): A promising candidate for food packaging; *Journal of Applied Polymer Science*; 2017; 134(41); 45390.

S. M. Bhasney, R. Patwa, A. Kumar, A., V. Katiyar; Thermal degradation kinetics of polylactic acid/acid fabricated cellulose nanocrystal based bionanocomposites; *International Journal of Biological Macromolecules*; 104; 827-836.

N. Tripathi, Monika, V. Katiyar; Poly(lactic acid)/modified gum arabic based bionanocomposite films: Thermal degradation kinetics; *Polymer Engineering and Science*; 2017; 57(11); 1193-1206.

Ramteke Ramdas, N. Kishore; Effects of Uniform Heat Flux and Velocity-Slip Conditions at Interface on Heat Transfer Phenomena of Smooth Spheres in Newtonian Fluids; *Journal of Heat Transfer*; 2017; 139(10); 104501.

N. Kishore, V. S. Nalajala; Heat Transfer from Confined Contaminated Bubbles to Power-Law Liquids at Low to Moderate Reynolds and Prandtl Numbers; *Heat Transfer - Asian Research*; 2017; 46(7); 681-702.

A. M. Verma, N. Kishore; Platinum catalyzed hydrodeoxygenation of guaiacol in illumination of cresol production: A density functional theory study; *Royal Society Open Science*; 2017; 4(11); 170650.

K. M. Krishna, H. Gidituri, N. Kishore; Effects of wall confinement and rheology of non-Newtonian nanofluids on mixed convection phenomenon of a square cylinder in a vertical channel; *Heat Transfer - Asian Research*; 2017; 46(8); 1222-1245.

A. K. Singh, N. Kishore; Mixed convection of shear-thinning nanofluids past unconfined elliptical cylinders in vertical upward flow; *International Journal of Thermal Sciences*; 2017; 122; 326-358.

K. Samal, C. Das, K. Mohanty; Application of saponin biosurfactant and its recovery in the MEUF process for removal of methyl violet from wastewater; *Journal of Environmental Management*; 2017; 203; 8-16.

M. K. Poddar, S. Sharma, S. Pattipaka, D. Pamu, V.S. Moholkar; Ultrasound-assisted synthesis of poly(MMA-co-BA)/ZnO nanocomposites with enhanced physical properties; *Ultrasonics Sonochemistry*; 2017; 39; 782-791.

S.K. Pawar, A.V. Mahulkar, A.B. Pandit, K. Roy, V.S. Moholkar; Sonochemical effect induced by hydrodynamic cavitation: Comparison of venturi/orifice flow geometries; *AIChE Journal*; 2017; 63(10); 4705-4716.

V. Sharma, Vinoth Kumar, R. Pakshirajan, G. Pugazhenth; Integrated adsorption-membrane filtration process for antibiotic removal from aqueous solution; *Powder Technology*; 2017; 321; 259-269.

R. Reddy, P. Saha; Modelling and control of nonlinear resonating processes: part I—system identification using orthogonal basis function; *International Journal of Dynamics and Control*; 2017; 5(4); 1222-1236.

R. Reddy, P. Saha; Modelling and control of nonlinear resonating processes: part II—model based control using orthogonal basis function based Wiener models; *International Journal of Dynamics and Control*; 2017; 5(4); 1237-1251.

P. Aadaleesan, P. Saha; A Nash game approach to mixed H₂/H model predictive control: part 2—stability and robustness; *International Journal of Dynamics and Control*; 2017; 5(4); 1073-1088.

P. Aadaleesan, P. Saha; A Nash game approach to mixed H₂/H model predictive control: part 1—state feedback linear system; *International Journal of Dynamics and Control*; 2017; 5(4); 1063-1072.

S. Nagireddi, A. K. Golder, R. Uppaluri; Investigation on Pd (II) removal and recovery characteristics of chitosan from electroless plating solutions; *Journal of Water Process Engineering*; 2017; 19; 8-17.

R. Saha, R. V. S. Uppaluri, P. Tiwari; Effect of mineralogy on the adsorption characteristics of surfactant—Reservoir rock system; *Colloids and Surfaces A: Physicochemical and Engineering Aspects*; 2017; 531; 121-132.

Chemistry

M. P. Singh, J. B. Baruah; Stable host-guest complexes of bis-2,6-pyridinedicarboxylate iron(III) with dihydroxybenzenes; *Polyhedron*; 2017; 138; 103-108.

M. P. Singh, J. B. Baruah; Modulation of dual fluorescence modes and emissions of 2-(1,4-dioxo-1,4-dihydro-naphthalen-2-yl-amino)benzoic acid; *Journal of Molecular Structure*; 2017; 1149; 315-322.

K. Shankar, J. B. Baruah; A stable peroxy- and hydroxy-bridged dinuclear cobalt(III) ethylenediamine 2,4-dinitrophenolate complex; *Inorganic Chemistry Communications*; 2017; 84; 45-48.

- S. Roy, S. Pramanik, S. Bhandari, A. Chattopadhyay; Surface complexed ZnO quantum dot for white light emission with controllable chromaticity and color temperature; *Langmuir*; 2017; 33; 51; 14627-14633.
- U. Goswami, S. Basu, A. Paul, S. S. Ghosh, A. Chattopadhyay; White light emission from gold nanoclusters embedded bacteria; *Journal of Materials Chemistry C*; 2017; 5; 47; 12360-12364.
- R. Gattu, P. R. Bagdi, R. S. Basha, A. T. Khan; Camphorsulfonic Acid Catalyzed One-Pot Three-Component Reaction for the Synthesis of Fused Quinoline and Benzoquinoline Derivatives; *Journal of Organic Chemistry*; 2017; 82; 23; 12416-12429.
- S. A. Bhat, A. A. Dar, S. Ahmad, A. T. Khan; Structural, vibrational and NMR spectroscopic investigations of newly synthesized 3-((ethylthio)(4-nitrophenyl)methyl)-1H-indole; *Journal of Molecular Structure*; 2017; 1145; 94-101.
- M. Belal, A. T. Khan; PTSA.H₂O-Catalyzed Reaction of 3-Aminocoumarins and Phenylacetaldehydes: A Route to Access Various Pyrido(2,3-c)coumarin Derivatives; *ChemistrySelect*; 2017; 2; 32; 10501-10504.
- A. Modi, P. Sau, B. K. Patel; Base-Promoted Synthesis of Quinoline-4(1H)-thiones from o-Alkynylanilines and Aroyl Isothiocyanates; *Organic Letters*; 2018; 19; 22; 6128-6131.
- A. Mandal, B. K. Patel; Rationalization of weak interactions in two fluorescence active imidazo-[1,5-a]-pyridine derivatives: A combined experimental and computational study; *Journal of Molecular Structure*; 2017; 1147; 735-746.
- D. Mahesh, V. Satheesh, S. V. Kumar, T. Punniyamurthy; Copper(II)-Catalyzed Oxidative Coupling of Anilines, Methyl Arenes, and TMSN₃ via C(sp³/sp²)-H Functionalization and C-N Bond Formation; *Organic Letters*; 2017; 19; 24; 6554-6557.
- R. Bag, P. B. De, S. Pradhan, T. Punniyamurthy; Recent Advances in Radical Dioxxygenation of Olefins; *European Journal of Organic Chemistry*; 2017; 37; 5424-5438.
- N. Behera., V. Manivannan; Nanomolar Detection of Al(III) Ion by Hydrazones Carrying Benzothiazole and Substituted Phenol Groups; *ChemistrySelect*; 2017; 2; 11048-11054.
- J. Bori, N. Behera, S. Mahata, V. Manivannan; Synthesis of Imidazo[5, 1-a]isoquinoline and Its 3-Substituted Analogues Including the Fluorescent 3-(1-Isoquinoliny)imidazo[5,1-a]isoquinoline; *ChemistrySelect*; 2017; 2; 11727-11731.
- S. Samanta, S. Halder, P. Dey, U. Manna, A Ramesh, G. Das; A ratiometric fluorogenic probe for the real-time detection of SO₃²⁻ in aqueous medium: Application in a cellulose paper based device and potential to sense SO₃²⁻ in mitochondria; *Analyst*; 2017; 143; 1; 250-257.
- A. Singh, A. Dey, P. K. Iyer; Influence of molar mass ratio, annealing temperature and cathode buffer layer on power conversion efficiency of P3HT:PC71BM based organic bulk heterojunction solar cell; *Organic Electronics: physics, materials, applications*; 2017; 51; 428-434.
- T. B. Raju, J. V. Vaghasiya, M. A. Afroz, S. S. Soni, P. K. Iyer; Twisted donor substituted simple thiophene dyes retard the dye aggregation and charge recombination in dye-sensitized solar cells; *Organic Electronics: physics, materials, applications*; 2017; 50; 25-32.
- A. H. Malik, A. Kalita, P. K. Iyer; Development of Well-Preserved, Substrate-Versatile Latent Fingerprints by Aggregation-Induced Enhanced Emission-Active Conjugated Polyelectrolyte; *ACS Applied Materials and Interfaces*; 2017; 9; 42; 37501-37508.
- K. Gogoi, S. Saha, B. Mondal, H. Deka, S. Ghosh, B. Mondal; Dioxxygenation Reaction of a Cobalt-Nitrosyl: Putative Formation of a Cobalt-Peroxyxynitrite via a {CoIII(NO)(O₂⁻)} Intermediate; *Inorganic Chemistry*; 2017; 56; 23; 14438-14445.
- Monisha Singha, Sayantani Roy, Satya Deo Pandey, Subhendu Sekhar Bag, Prabuddha Bhattacharya, Mainak Das, Anindya S. Ghosh, Debashis Ray, Amit Basak; Use of azidonaphthalimide carboxylic acids as fluorescent templates with a built-in photoreactive group and a flexible linker simplifies protein labeling studies: applications in selective tagging of HCAII and penicillin binding proteins; *Chemical Communications*; 2017; 53; 13015-13018.
- S. S. Bag, A. Yashmeen; Uracil-amino acid as a scaffold for -sheet peptidomimetics: Study of photophysics and interaction with BSA protein; *Bioorganic and Medicinal Chemistry Letters*; 2017; 27; 24; 5387-5392.
- S. S. Bag, S. De; Isothiocyanyl Alanine as a Synthetic Intermediate for the Synthesis of Thioureayl Alanines and Subsequent Aminotetrazolyl Alanines; *Journal of Organic Chemistry*; 2017; 82; 23; 12276-12285.
- S. S. Bag, S. Jana; Axially chiral amino acid scaffolds as efficient fluorescent discriminators of methanol-ethanol; *New Journal of Chemistry*; 2017; 41; 22; 13391-13398.
- R. S. Giri, S. R. Manne, G. Dolai, A. Paul, T. Kalita, B. Mandal; FeCl₃-Mediated side chain modification of aspartic Acid- and glutamic acid-containing peptides on a solid support; *ACS Omega*; 2017; 2; 10; 6586-6597.
- F. G. Cantú Reinhard, P. Barman, G. Mukherjee, J. Kumar, D. Kumar, D. Kumar, C. V. Sastri, S. P. De Visser; Keto-Enol Tautomerization Triggers an Electrophilic Aldehyde Deformylation Reaction by a Nonheme Manganese(III)-Peroxo Complex; *Journal of the American Chemical Society*; 2017; 139; 50; 18328-18338.
- V. S. Varma, S. Das, C. V. Sastri, A. S. Kalamdhad; Microbial degradation of lignocellulosic fractions during drum composting of mixed organic waste; *Sustainable Environment Research*; 2017; 27; 6; 265-272.
- Sandip Paul, Nasim Sepay, Shrabana Sarkar, Pritam Roy, Swagata Dasgupta, Pinki Saha Sardar, Anjoy Majhi; Interaction of serum albumins with fluorescent ligand 4-azido coumarin: spectroscopic analysis and molecular docking studies; *New J. Chem*; 2017; 41; 15392-15404.
- A. Saha, S. Panda, N. Pradhan, K. Kalita, V. Trivedi, D. Manna; Azidophosphonate Chemistry as a Route for a Novel Class of Vesicle Forming Phosphonolipids; *Chemistry-A European Journal*; 2017; 24; 5; 1121-1127.
- K. A. Lippert, C. Mukherjee, J. P. Broschinski, Y. Lippert, S. Walleck, A. Stammler, H. Bogge, J. Schnack, T. Glaser; Suppression of Magnetic Quantum Tunneling in a Chiral Single-Molecule Magnet by Ferromagnetic Interactions; *Inorganic Chemistry*; 2017; 56; 15119-15129.
- B. Phukan, C. Mukherjee., R. Varshney; A New Heptadentate Picolinate-Based Ligand and Its Corresponding Gd(III) Complex: the Effect of Picolinate versus Acetate Pendant on Complex Property; *Dalton Transactions*; 2017; 47; 135-142.
- B. Phukan, S. Ghorai, K. Deka, P. Deb, C. Mukherjee; Interactions of Alkali and Alkali-Earth Metals in Water-Soluble Heterometallic FeIII/M (M = Na⁺, K⁺, Ca²⁺)-Type Coordination Complex; *Crystal Growth & Design*; 2017; 18; 531-539.
- S. Dutta, N. P. Das, D. Mahanta; Dynamics and control of spiral and scrollwaves; *Complexity and Synergetics*; 2017; 155-165.
- B. Pradhan, R. K. Gupta, S. K. Pathak, J. De, S. K. Pal, A. S. Achalkumar; Columnar self-assembly of luminescent bent-shaped hexacatenars with a central pyridine core connected with substituted 1,3,4-oxadiazole and thiadiazoles; *New Journal of Chemistry*; 2017; 42; 3781-3798.
- S. Ghosh, C. K. Jana; Metal-Free Thermal Activation of Molecular Oxygen Enabled Direct -CH₂-Oxygenation of Free Amines; *The Journal of Organic Chemistry*; 2017; 83; 260-266.
- Debapratim Das, Rajarshi Samanta; Iridium(III) Catalyzed Regiocontrolled Direct Amidation of Isoquinolones and Pyridones; *Advanced Synthesis & Catalysis*; 2017.
- B. Pramanik, S. Ahmed, R. Roy, B. K. Das, N. Singha, D. Das; A DNA-NDI hybrid to efficiently detect histone in parts per trillion (ppt) level; *ChemistrySelect*; 2017; 2; 8911-8916.
- B. Pramanik, S. Ahmed, N. Singha, D. Das; Self-Assembly Assisted Tandem Sensing of Pd²⁺ and CN⁻ by a Perylenediimide-Peptide Conjugate; *Chemistry Select*; 2017; 2; 10061-10066.
- B. Pramanik, J. H. Mondal, N. Singha, S. Ahmed, J. Mohanty, D. Das; A Viologen-Perylenediimide Conjugate as an Efficient Base Sensor with Solvochromic Property; *ChemPhysChem*; 2017; 18; 245-252.
- A. Mukhopadhyay, T. Hossen, I. Ghosh, A. L. Koner, W. M. Nau, K. Sahu, J. N. Moorthy; Helicity-Dependent Regiodifferentiation in the Excited-State Quenching and Chiroptical Properties of Inward/Outward Helical Coumarins; *Chemistry - A European Journal*; 2017; 23; 59; 14797-14805.
- D. K. Sahu, K. Sahu; Characterizing optical properties, composition of stabilizer-free copper nanoclusters and its interaction with bovine serum albumin; *Journal of Photochemistry and Photobiology A: Chemistry*; 2017; 347; 17-25.
- A. Phukon, K. Sahu; How do the interfacial properties of zwitterionic sulfobetaine micelles differ from those of cationic alkyl quaternary ammonium micelles? An excited state proton transfer study; *Physical Chemistry Chemical Physics*; 2017; 19; 46; 31461-31468.
- B. Mondal, K. Mondal, P. Satpati, S. C. Pan; Organocatalytic Asymmetric Dimerization of Hydroxyenones to Acetals and Theoretical Investigations into the Diastereoselection; *European Journal of Organic Chemistry*; 2017; 47; 7101-7106.
- U. Nath, S. C. Pan; Organocatalytic Asymmetric [4 + 2] Cycloaddition of 1-Acetylcyclopentene and 1-Acetyl cyclohexene for the Synthesis of Fused Carbocycles;

European Journal of Organic Chemistry; 2017; 43; 6457-6461.

R. Dalapati, U. K k am-Demir, C. Janiak, S. Biswas; The effect of functional groups in the aqueous-phase selective

sensing of Fe(III) ions by thienothiophene-based zirconium metal-organic frameworks and the design of molecular logic gates; Dalton Transactions; 2017; 47; 4; 1159-1170.

A. Das, S. Biswas; A multi-responsive carbazole-functionalized Zr(IV)-based metal-organic framework for selective sensing of Fe(III), cyanide and p-nitrophenol; Sensors and Actuators, B: Chemical; 2017; 250; 121-131.

P. Mandal, B. K. Kundu, K. Vyas, V. Sabu, A. Helen, S. S. Dhankhar, C. M. Nagaraja, D. Bhattacharjee, K. P. Bhabak, S. Mukhopadhyay; Ruthenium(II) arene NSAID complexes: Inhibition of cyclooxygenase and antiproliferative activity against cancer cell lines; Dalton Transactions; 2017; 47; 2; 517-527.

A. Das, J. Deka, A. M. Rather, B. K. Bhunia, P. P. Saikia, B. B. Mandal, K. Raidongia, U. Manna; Strategic Formulation of Graphene Oxide Sheets for Flexible Monoliths and Robust Polymeric Coatings that Embedded with Durable Bio-inspired Wettability; ACS Applied Materials & Interfaces; 2017; 9; 48; 42354-42365.

D. Parbat, U. Manna; Selective Liaison With Liquids for Environment-Friendly and Comprehensive Oil/Water Separation; Chem Sus Chem; 2017; 10; 4839-4844.

A. M. Rather, N. Jana, P. Hazarika, U. Manna; Sustainable polymeric material for the facile and repetitive removal of oil-spills through the complementary use of both selective-absorption and active-filtration processes; Journal of Materials Chemistry A ; 2017; 5; 23339-23348.

Computer Science

Shashi Shekhar Jha and Shivashankar B. Nair; TANSA: Task Allocation using Nomadic Soft-Agents for Multi-Robot Systems; IEEE Transactions on Emerging Topics in Computational Intelligence; 2017; PP; 99; 1-11.

Tushar Semwal, Shashi Shekhar Jha and Shivashankar b. Nair; On Ordering Multi-Robot Task Executions within a Cyber Physical System; ACM Transactions on Autonomous and Adaptive Systems (TAAS); 2017; 12; 04.20; 1-27.

Badal Soni, Pradip K. Das, Dalton Meitei Thounaojam; CMFD: A detailed review of block based and key feature based techniques in image copy-move forgery detection; IET Journal of Image Processing, Springer US; 2017; 12; 2; 167-178.

Badal Soni, Pradip K. Das, Dalton Meitei Thounaojam; Copy-Move Tampering Detection based on Local Binary Pattern Histogram Fourier Feature, International Conference on Computer and Communication Technology (CCCT-2017); ACM Digital Library; 2017; 78-83.

Rahul Bhattacharya, Subindu Kumar, Santosh Biswas; Fault Diagnosis in Switched-Linear Systems by Emulation of Behavioral Models on FPGA: A case study of current-mode buck converter; International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, Wiley; 2017; DOI: 10.1002/jnm.2314.

Design

U. R. Salve; Relationship of duration of work exposure and feeling of subjective fatigue: A case study on jewellery manufacturing workers in India; International Journal of Environmental Health Engineering; 2017; 6; 1; DOI: 10.4103/ijehe.ijehe_10_15.

Md. Sarfaraz Alam, U. R. Salve, N. Kumar and M. Kumar; A Study on the Alcohol Beverages Drinking Effect on Potential CTS Symptoms; Ergonomics International Journal; 2017; 1; 1.

Electronics

N. C. Resmi , Sonali Chouhan; A Novel Interdependent Source-Channel Coding Technique for Enhanced Energy Efficiency in Communication over Wireless Sensor Networks; Springer Wireless Personal Communications; 2017; 96; 3; 3727-3743.

S. Kumar, Sonali Chouhan; Performance Analysis of SIMO spectrum sharing networks over correlated k-ushadowed fading relying on MRC reception; Elsevier AEU - International Journal of Electronics and Communication; 2017; 82; 104-108.

Brajesh Rawat and Roy Paily; Modeling of Graphene-based Field-Effect Transistors through 1-D Real-Space Approach" Journal of Computational Electronics; Journal of Computational Electronics, Springer; 2017; 1-11.

Pavan Kumar Manchi, Roy Paily and Anup Kumar Gogoi; Low Power Digital Baseband Transceiver Design for UWB Physical Layer of IEEE 802.15.6 Standard; IEEE Transactions on Industrial Informatics; 2017; 13; 15; 2474-2483.

Saroj Mondal and Roy Paily; Efficient Solar Power Management System for Self-Powered IoT Node; IEEE Transactions on Circuits and Systems; 2017; 64; 9; 2359-2369.

R. Chopra, C. R. Murthy, H. A. Suraweera, E. G. Larsson; Performance Analysis of FDD Massive MIMO Systems under Channel Aging; IEEE Transactions on Wireless communications; 2017; PrePrint.

R. Chopra, R. Annavajjala and C. R. Murthy; Distributed Cophasing With Autonomous Constellation Selection; IEEE Transactions on Signal Processing; 2017; 65; 21; 5798-5811.

Kukil Khanikar, Rohit Sinha, R. Bhattacharjee; Cooperative Spectrum Sensing using Quantized Energy Statistics in the Absence of Dedicated Reporting Channel; IEEE Transactions on Vehicular Technology; 2017; 19; PrePrint.

Rohit Sinha, Syed Shahnawazuddin; Assessment of Pitch-Adaptive Front-End Signal Processing for Children's Speech Recognition; Computer Speech & Language; 2017; 1; 48; 103-121.

Om Singh, Rohit Sinha; Sparse coding of i-vector/JFA latent vector over ensemble dictionaries for language identification systems; International Journal of Speech Technology; 2017; 1-16.

J. Sanam, S. Ganguly, A. K. Panda; Distribution STATCOM with optimal phase angle injection model for reactive power compensation of radial distribution networks; International Journal of Numerical Modelling; 2017; 30; 1-8.

Humanities

Sukanya Sharma; The People, the Megaliths of Cherrapunjee; Journal of Heritage Management; 2017; 2; 24564796; 76-88.

Sukanya Sharma; The Third Perspective on Shifting Cultivation; Space and Culture India; 2017; 5; 2052-8396; 21-31.

Dilwar Hussain; Conceptual Referents, Personality Traits and Income-Happiness Relationship: An Empirical Investigation; Journal of Psychology; 2017; 13; 4; 733-748.

Mithilesh Kumar Jha; Book Review: Challenges of Governing India: Asymmetries of Ideas and Frameworks by Ranabir Samaddar, Ideas and Frameworks of Governing India; Economic and Political Weekly; 2017; 49; 2349-8846; 40-42.

Anamika Barua, Sumit Vij and Mirza Zulfikur Rahman; Powering or sharing water in the Brahmaputra River basin; International Journal of Water Resources Development; 2017; DOI: 10.1080/07900627.2017.1403892; 1-15.

Deepankar Basu, Debarshi Das; Profitability and Investment: Evidence from Indias Organized Manufacturing Sector; Metroeconomica; 2017; 68; 1; 47-90.

Deepankar Basu, Debarshi Das; Service Sector Growth in India: A View from Households; Economic and Political Weekly; 2017; 52; 48.

Mathematics

Ayush Garg, Akash Yadav, Axel Sikora and Ashok Singh Sairam; Wireless Precision Time Protocol; IEEE Communications Letters; 2017; PP; 99.

Mechanical

P. Borgohain, A. Dalal, G. Natarajan and H. Gadgil; Numerical assessment of mixing performances in cross-T microchannel with curved ribs; Microsystem Technologies; 2017; 1-15.

Nizar Faisal Alkayem, Biswajit Parida and Sukhomay Pal; Optimization of friction stir welding process parameters using soft computing techniques, Soft Computing; Soft Computing; 2017; 21; 23; 7083-7098.

Aviral Misra, Pulak M. Pandey, U.S. Dixit, Anish Roy and Vadim V. Silberschmidt; Modelling of finishing force and torque in ultrasonic assisted magnetic abrasive finishing process; Proc. IMechE, Part B:, Journal of Engineering Manufacture; 2017; 1-15.

V. Kumar and U.S. Dixit; Selection of process parameters in a single pass laser bending process; Engineering Optimization ; 2017; 1-16.

P. P. Dutta, K. Kalita, U. S. Dixit and H. Liao; Magnetic-force-assisted straightening of bent mild steel strip by laser irradiation; Lasers in Manufacturing and Materials Processing ; 2017; 4; 4; 206-226.

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

Physics

Bijita Sarma and Amarendra K. Sarma; Quantum-interference-assisted photon blockade in a cavity via

parametric interactions; Physical Review A ; 2017; 96; 053827.

Jitendra Kumar, Harshal B. Nemade and P. K. Giri; Density functional theory investigation of negative differential resistance and efficient spin filtering in niobium-doped armchair graphene nanoribbons; Physical Chemistry Chemical Physics; 2017; 19; 29685-29692.

Sk. Md. Obaidulla, Subhash Singh, Y N Mohapatra and P. K. Giri; Ambient condition bias stress stability of vanadium (IV) oxide phthalocyanine based p-channel organic field-effect transistors; Journal of Physics D: Applied Physics; 2017; 51; 015110.

Gone Rajender, Jitendra Kumar, P. K. Giri; Interfacial charge transfer in oxygen deficient TiO₂-graphene quantum dot hybrid and its influence on the enhanced visible light photocatalysis; Applied Catalysis B: Environmental; 2017; 224; 960-972.

Jitendra Kumar, Harshal B. Nemade and P. K. Giri; Adsorption of Small Molecules on Niobium Doped Graphene: A Study Based on Density Functional Theory; IEEE Electron Device Letters; 2017; 39; 2; 296-299.

Biswajit Pathak and Bosanta R. Boruah; Improvement in error propagation in the Shack–Hartmann-type zonal wavefront sensors; J. Opt. Soc. Am. A; 2017; 34; 12; 2194-2202.

D. Borah, A. Gupta; New viable region of an inert Higgs doublet dark matter model with scotogenic extension; Physical Review D; 2017; 96; 115012.

D. Nanda, D. Borah; Common origin of neutrino mass and dark matter from anomaly cancellation requirements of a U(1)_{B-L} model; Physical Review D; 2017; 96; 115014.

K. Bora, D. Borah, D. Dutta; Probing Majorana neutrino textures at DUNE; Physical Review D; 2017; 96; 075006.

D. Borah, A. Dasgupta, S. Patra; Common origin of 3.55 keV x-ray line and gauge coupling unification with left-right dark matter; Physical Review D; 2017; 96; 115019.

Partha P. Dey and Alike Khare; Nonlinear optical and optical limiting response of PLD nc-Si thin films; Journal of Material Chemistry C; 2017; 5; 12211-12220.

Ramakrishna Madaka, Venkanna Kanneboina and Pratima Agarwal; Raman and Spectroscopic

ellipsometry studies of a-Si:H thin films on low cost photo paper substrate; Materials today: PROCEEDINGS; 2017; 4; 14; 12666-12670.

V. Kanneboina, Ramakrishna Mandaka and Pratima Agarwal; Influence of Hydrogen Plasma treatment of intrinsic a-Si:H layer on the performance of the c-Si/a-Si:H heterogeneous solar cells; Materials today: PROCEEDINGS; 2017; 4; 14; 12726-12729.

Kajwal Kumar Patra, Akash Bhattacharya and Swati Bhattacharya; Allosteric Signal Transduction in HIV-1 Restriction Factor SAMHD1 Proceeds via Reciprocal Handshake across Monomers; Journal of Chemical Information and Modeling; 2017; 57; 2523-2538.

Energy

Asha Yadav and Pratima Agarwal; Laser Induced Selective Crystallization of Amorphous Silicon Thin Film for Device Applications; Materialstoday: PROCEEDINGS; 2017; 4; 14; 12722 -12725.

Environment

V. B. Barua, A. S. Kalamdhad; Anaerobic biodegradability test of water hyacinth after microbial pretreatment to optimise the ideal ; F/M ratio; Fuel; 2017; 91-97.

I. Vishan, S. Senthilkumar, A. S. Kalamdhad; Isolation and Identification of bacteria during rotary drum composting of green waste (Water hyacinth); International Journal of Recycling of Organic Waste in Agriculture; 2017; 6; 245-253.

V. B. Barua, A. S. Kalamdhad; Biochemical methane potential test of untreated and hot air oven pretreated water hyacinth: A comparative study; Journal of Cleaner Production; 2017; 166; 273-284.

I. Vishan, S. Senthilkumar, A. S. Kalamdhad; Biosorption of lead using Bacillus badius AK strain isolated from compost of green waste (water hyacinth); Environmental Technology; 2017; 38; 1812-1822.

D. Singh, D. Kabiraj, P. Sharma, H. Chetia, P. V. Mosahari, K. Neog and U. Bora; The mitochondrial genome of Muga silkworm (*Antheraea assamensis*) and its comparative analysis with other lepidopteran insects; PloS one; 2017; 12; 11.

Nanotechnology

S. Roy, S. Pramanik, S. Bhandari, A. Chattopadhyay; Surface Complexed ZnO Quantum Dot for White Light Emission with Controllable Chromaticity and Color Temperature; Langmuir; 2017; 33; 14627-14633.

Jitendra Kumar, Harshal B. Nemade and P. K. Giri; Density functional theory investigation of negative differential resistance and efficient spin filtering in niobium-doped armchair graphene nanoribbons; Physical Chemistry Chemical Physics; 2017; 19; 29685-29692.

Jitendra Kumar, Harshal B. Nemade and P. K. Giri; Adsorption of Small Molecules on Niobium Doped Graphene: A Study Based on Density Functional Theory; IEEE Electron Device Letters; 2017; 39; 2; 296-299.

Deepanjalee Dutta, Sunil Kumar Sailapu, Arun Chatto-padhyay and Siddhartha Sankar Ghosh; Phenylboronic Acid Templated Gold Nanoclusters for Mucin Detection Using a Smartphone-Based Device and Targeted Cancer Cell Theranostics; ACS Applied Materials & Interfaces; 2017; 10; 4; 3210-3218.

Amaresh Kumar Sahoo, Sunil Kumar Sailapu, Deepanjalee Dutta, Subhamoy Banerjee, Siddhartha Sankar Ghosh and Arun Chattopadhyay; DNA-Templated Single Thermal Cycle Based Synthesis of

Highly Luminescent Au Nanoclusters for Probing Gene Expression; ACS Sustainable Chemistry & Engineering; 2017; DoI: 10.1021/acssuschemeng.7b03568.

Upashi Goswami, Anushree Dutta, Asif Raza, Raghuram Kandimalla, Sanjeeb Kalita, Siddhartha Sankar Ghosh, Arun Chattopadhyay; Transferrin-Copper Nanocluster-Doxorubicin Nanoparticles as Targeted Theranostic Cancer Nanodrug; ACS Applied Materials & Interfaces; 2017; 10; 4; 3282-3294.

Bandhan Chatterjee, Asif Raza and Siddhartha Sankar Ghosh; Developing single-entity theranostic: drug-based fluorescent nanoclusters with augmented cytotoxicity; Nanomedicine; 2017; 13; 3.

Upashi Goswami, Srestha Basu, Anumita Paul, Siddhartha Sankar Ghosh and Arun Chattopadhyay; White light emission from gold nanoclusters embedded bacteria; Journal of Materials Chemistry C; 2017; 5; 47; 12360-12364.

Rural Technology

B. Saha, C. Devi, M. Khwairakpam, A. S. Kalamdhad; Vermicomposting and anaerobic digestion – viable alternative options for terrestrial weed management – a review; Biotechnology Reports; 2017; 17; 70-76.

Students Awards and Honours

BSBE

Sajitha Sasidharan received the Third Prize for Oral presentation in ICN:31-2017 : International Conference on Nanotechnology: Ideas, Innovations and Initiatives - 2017 held at IIT Roorkee for the paper 'Hybrid Magnetic Organic -Inorganic Nanoadsorbents for Sequestration of Chromium' under the theme "Diverse applications" held from 06-08 December 2017.

Ishani chakrabarty received the First prize in Best Poster Category held at IASST Guwahati for the poster titled 'Viability assessment of bacteria under the treatment of (E)-labda-8(17), 12-diene-15, 16-dial, a bioactive compound from the seeds of *Alpinia nigra*' held on 21 November 2017.

Avishek Roy received the Best Poster Presentation Award at National Conference on "Fungal Biology: Recent Trends and Future Prospects" organized by the Mycological Society of India at Department of Botany, University of Jammu, November 16-18, 2017 for the poster titled 'Role of calcineurin B (CNB-1) RIP mutants in stress tolerance, circadian rhythm and probable interaction with Calcium proton exchanger (CAX) regulating cell functions in *Neurospora crassa*' 18 November 2017.

Arun Dhillon received the Best Poster Award at 23rd INPEC (International Network of Protein Engineering Centers) Meeting Protein Structure, function and Engineering for the poster titled 'Rgl-CBM35 of family 35 Carbohydrate Binding Module (CBM) from *Clostridium thermocellum* represents first CBM targeting rhamnogalacturonan I and mediating binding by two sites'.

Chemical

Anusuya Talukdar received the Best Paper Award for the paper titled 'Effect of H₂S and Acetic Acid on CO₂ Corrosion of Carbon Steel' at CORCON-2017, Mumbai, India held from 17 -20 September 2017.

Saiprasad Pati received the Ambuja's Young Researcher's Awards for doing Post-Graduate Studies in India from CHEMCON 2017, Haldia held from 27-30 December 2017.

Binota Thokchom received the DST INSIPRE Faculty Award from DST.

Barnali Bhui received the Best Oral Presentation at Sustainable Energy and Environmental Challenges (SEEC-2018), IISC Bangalore held from 31 December—3 January 2018.

Chemistry

Mr. Adil and Ms. Dibyangana received the Tertiary Prize in ISBE Bionic Innovation Competition

Mr. Adil and Ms. Dibyangana received the best poster award at Chemconvene 2017 held at IIT Guwahati.

Mr. Adil received the award for best oral presentation at International Conference on Advances in Polymer Science & Technology, 2017.

Titli Ghosh received the best poster award at Chemconvene 2017 held at IIT Guwahati.

Computer Science

Miss Sonia was awarded IEEE Systems, Man, and Cybernetics (SMC) 2017 Student and Young Professional Travel Grant by IEEE SMC on 05 October 2017 to present the paper titled "An Immuno-inspired Online Feature Selection Mechanism" at the conference.

Miss Sonia was the Winner of the Hackathon at 2017 IEEE Systems, Man, and Cybernetics (SMC) Brain Hackathon conference held at Banff, Canada. 5—8 October 2017.

Mousum Handique received the Best Paper Award in VLSI Track at IEEE TENCON Conference on November 2017.

Design

Darpan Bajaj received the Best Film (Gender) award at 5th Woodpecker international film festival 2017 for the Documentary 'Maharajin' on 12 November 2017 .

Darpan Bajaj received the Best Director award at the 6th Smita Patil Documentary and Short film festival 2017 for the Documentary 'Maharajin' on 11 December 2017.

Darpan Bajaj received the Best Documentary Jury (Student Category) award at the 6th Delhi shorts international film festival for the Documentary 'Maharajin' on 2 November 2017.

Humanities

Neelharit Kashyap received the Best paper award to a research paper (with Ms Neel Harit Kausik) at the 7th InSPA International Conference on School Psychology: School Counselling and Skill Development. University of Mysore for the paper 'An intervention based on self-determination theory and nurtured heart approach for students with learning disability'.

Mechanical

Sunil Kumar Singh received 2nd Prize at International-National Conference on Mechanism and Machines (iNaCoMM) held in BARC Mumbai on 15 December 2017 for the paper titled 'A partially statically balanced scissor-linkage based robot'.

Physics

Prahlad Kumar Baruah received the Best Poster Award at DAE Solid state Physics Symposium-2017, Bhabha Atomic Research Centre (BARC), Mumbai for the paper titled 'Effect of laser energy on the SPR and size of silver nanoparticles synthesized by pulsed laser ablation in distilled water' on 30 December 2017.

Eshita Mal received the Best Poster Award at National Laser Symposium (NLS), Bhabha Atomic Research Centre (BARC), Mumbai for the paper titled 'Characterization of laser produced tungsten plasma in air using time resolved laser induced breakdown spectroscopy (LIBS)' on 23 December 2017.

S. S. Goutam Buddha received the Optical Society of India second best poster award at the International Conference on Advances in Optics and Photonics, November 2017 for the paper 'Development of a Scanning Optical Microscope with a Holographically Designed Illumination Beam' on November 2017.

Environment

Poulami Datta received the Best paper award in "Bioenergy and Biochemical Engineering" from the Indian Institute of Chemical Engineers, CHEMCON 2017, for the paper titled "Isolation and Characterization of Crude Oil Degrading Bacteria from Formation Water of Assam Oil Reservoir, India" on 30 December 2017.

Sayanti Ghosh received the Best poster award in "Wastewater Treatment" category from the Indian Institute of Chemical Engineers, CHEMCON 2017, for the paper titled "Aerobic Granulation in Sequencing Batch Reactors (SBR) and Degradation of Waste Motor Oil" on 30 December 2017.

Energy

Sharbani Kaushik received the Young Scientist Award 2017 for her 'Creditable contribution to advanced materials research' from the Materials Research Society of India (MRSI), Kolkata Chapter held in IEST, Shibpur on 11 October, 2017.

Sharbani Kaushik received the Best Poster award at 5th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN 2017), organized by IITG for the poster titled 'Quantum dots and Graphene Nanoplatelets in a Silk film matrix stimulates cyanobacterial photosystems to generate steady current in a PMFC' on 27 December 2017.

Asha Yadav received the Best paper presentation Award at the International Conference on Thin Films (Nov 13-17, 2017) NPL, New Delhi, India for the paper titled 'Persistent photoconductivity and space charge limited conduction in a-Si:H/nc-Si:H multilayer structure: Role of interface states' on 17 November 2017.

Pilik Basumatary received the Best Poster Presentation Award at the XIX International Workshop on The Physics of Semiconductor Devices (Dec 11-15, 2017), IIT Delhi for the poster titled 'Large area MAPbI₃ perovskite thin films by two step method with improved stability' on 15 December 2017.

Nanotechnology

Neha Arora received Student Travel Award for Poster presentation at Nano Today journal, The Institute of Bioengineering and Nanotechnology (IBN) and Elsevier for the poster titled 'PEGylated Silver Nanoclusters Mediated Cytosolic Delivery of Tumor Suppressor Protein PTEN to Modulate in vitro Cellular Signalling' on 6 December 2017

Neha Arora received the ACS Poster presentation Award from the IIT Guwahati/American Chemical Society for the paper titled 'Understanding Therapeutic Potential of PEGylated Silver Nanoclusters Loaded Recombinant PTEN' on 19 December 2017.

Deepanjalee Dutta received the Indian Society of Nano medicine-BC best poster award from the Indian Society of Nano medicine for the paper titled 'Bimetallic Au-Ag Nanoclusters embedded Cationic BSA nanocarrier for Bioimaging and Suicide gene therapy of HeLa cancer cells' on 8 December 2017.

Deepanjalee Dutta received the RSC Poster Award for poster presentation from the IIT Guwahati/Royal Society of Chemistry for the paper 'Bimetallic Au-Ag nanoclusters embedded nanocarrier for bioimaging and suicide gene therapy of HeLa cancer cells' on 19 December 2017.

Spirit 2017



The 7th edition of the annual sports festival of IIT Guwahati, Spirit, was held from 12th to 15th October 2017. The inaugural function of Spirit-2017 was held on 11th October, 2017 at Dr. Bhupen Hazarika Auditorium. Renowned cricketer Mr. Brett Lee was the Chief Guest for the inauguration ceremony. Mr. Lee, one of fastest bowlers in the world of cricket during his international career, is also associated with raising awareness about hearing loss as the Global Hearing Ambassador of Cochlear. The Inaugural Ceremony started with Talk on spreading awareness on Hearing Loss by our alumnus, which was followed by a chat session with the Australian Cricketer.

Book/ Book Chapters

BSBE

Pawan Kumar Maurya and Pranjal Chandra; Oxidative stress: Diagnostic methods and application in medical science; Springer Singapore; 2017; Total Pages: 168; 978-981-10-4710-7.

Surajbhan Sevda, Pranab JyotiSarma, Kaustubha Mohanty, T. R. Sreekrishnan and Deepak Pant; Microbial Fuel Cell Technology for bioelectricity Generation from Wastewaters; Springer; 2017; 237-258; 978-981-10-7431-8.

Chemistry

A. S. Achalkumar, Manoj Mathews, Quan Li; Stimuli-Directed Self-Organized One-Dimensional Organic Semiconducting Nanostructures for Optoelectronic Application; Functional Organic and Hybrid nanostructured Materials; Wiley VCH Publications; ISBN: 978-3-527-34254-9.

Design

Avinash Shende; Beppe Finessi (Ed.) book 'Salone Satellite: 20 anni di nuova creativita'; Corraini edizioni, Mantova, Italy; 2017; II; 978- 88- 7570- 642-5.

Humanities

Sukanya Sharma, Pankaj Singh and Momi Das; The Past and Present of the Pottery Craft of Assam; Pune. ISPQS: www.manandenvironment.org.

Mithilesh Kumar Jha; Language Politics and Public Sphere in North India: Making of the Maithili Movement; Oxford University Press; 2017; Total page: 368; 9780199479344.

Mechanical

R. Tiwari; Rotor Systems: Analysis and Identification; CRC; 1; 2017; Total pages: 1089; 1138036285.

N. K. Mishra, P. Muthukumar, Snehasish Panigrahy; A Review on Clean Combustion Within Porous Media; Springer Nature Singapore Pte Ltd.; 2017; 978-981-10-7184-3; 209-224.

Environment

Rajeev Ravindran, Saprativ P. Das, Deepmoni Deka, Mohammad Jawed and Arun Goyal; Lignocellulosic biomass as a sustainable source for bioethanol production/ Water Science and Technology by Springer Book Series; Springer

Faculty Awards and Honours

BSBE

Prof. Vikash Kumar Dubey received ICMR award from honorable Minister of State, Health and Family Welfare, Government of India and director general of the Indian Council of Medical Research on 11-Oct 2017 for his Scientific contribution in the field of Biomedical research.

Latha Rangan was made the Fellow of the National Academy of Sciences, Allahabad for her contribution in areas of Plant Sciences on 9 December 2017.

Prof. Arun Goyal received the Excellence in Carbohydrate Research (ECR) Award - 2017 from Association of Carbohydrate Chemists and Technologists of India, in recognition of outstanding contribution in the area of Structure and functions of carbohydrates and carbohydrate enzymes, on 18-20 December 2017.

Avinash Shende received the BHARAT JYOTI AWARD "INDIA GLORY AWARD from the Indian International Friendship Society, New Delhi for Outstanding work done for the people of North Eastern Region on 20 December

Humanities

Dilwar Hussain received the Outstanding Scientist at the Centre for Advanced Research and Design (CARD) of Venus International Foundation (VIF) Chennai in 2017.

Dilwar Hussain received the Best paper award to a research paper (with Ms Neel Harit Kausik) at the 7th InSPA International Conference on School Psychology: School Counselling and Skill Development. University of Mysore for the paper 'An intervention based on self-determination theory and nurtured heart approach for students with learning disability'.

Chemistry

Dr. U. Manna received the BNRS Young Scientist Research Award.

Dr. D. Das received the DST UKIERI Thematic Partnership Award.

Dr. D. Srimani received Alexander von Humboldt at the Programme at RWTH Aachen University.

Mechanical

Amaresh Dalal received the Prof KN Seetharamu Medal and Prize for the Best Young Researcher in Heat Transfer-2017 from the Indian Society of Heat and Mass Transfer on 29 December 2017.

Poonam Kumari received the Young Engineer INAE-2017 from the Indian National Academy of Engineering on 15 December 2017.

Computer Science

Purandar Bhaduri received IEEE Senior Membership from IEEE in October 2017.

Jatindra Kumar Deka and Santosh Biswas received the Best Paper Award in VLSI Track at IEEE TENCON in November 2017.

P. Muthukumar received the Mechanical Engineering Design Award 2017 from the National Design & Research Forum (NDRF) of Institute of Engineers (India) for outstanding Individual contribution in Engineering Design on 21 December 2017.

P. Muthukumar received the Fulbright-Nehru Academic & Professional Excellence Award (Teaching & Research) 2017 from the Indo - U.S. Science and Technology Forum for his contribution in Teaching and Research.

Design

Supradip Das received the TED MINT Internship from 3M Sweden and Campus Varnamo, Sweden on 20-24 Nov 2017.



Prof. Vikash Kumar Dubey: Received ICMR award by Honorable Minister of State, Health and Family Welfare



Prof. Arun Goyal receiving Excellence in Carbohydrate Research (ECR) Award-2017



IIT Guwahati has been extending support to the Chief Minister's Gyanjyoti Programme since its inception. Large number of students from various places of Assam visited the Institute this year too, as part of the programme. The Institute arranges motivational lectures, presentations and campus sightseeing for the visiting students.

Visitors from Other Institutes

BSBE

Prof. U N Das, Founder and director of UND life sciences, USA, 'Dogmas about health and disease'; 31 October 2017.

Dr. Partho Sarothi Ray, Department of biological sciences, Indian Institute of science education and research (IISER), Kolkata; 'Signal integration in biological systems: Combining computational and experimental approaches to decipher the translation regulatory network controlling p53 expression in response to DNA damage'; 28 November 2017.

Dr. Sankar Basu, University of Delhi; 'The globular disordered interface in proteins: Addressing molecular evolution from protein design'; 8 December 2017.

Dr. Ana M L Sousa, University of Strathclyde, UK; 'Plant based polyphenols coatings for surface functionalization'; 18 December 2017.

Dr Rahul Roy, IISC Bangalore; 'Microdroplet technologies for single cell and single molecule analysis'; 18 December 2017.

Chemical

Prof. Geoffrey Evans, , The University of New Castle, Australia ; 'Hydrodynamic, Interfacial Phenomena and Energy Utilization in Multiphase Systems'; 20 October 2017.

Prof. Suryasarathi Bose, Department of Materials Engineering, Indian Institute of Science (IISc); 'Polymeric Membranes for Water Purification'; 13 November 2017.

Prof. R. P. Chhabra, Department Chemical Engineering, IIT Kanpur; 'Making of a Complete Professional: Some ideas and useful tips'; 30 November 2017.

Prof. Kalyan Gayen; 'Quantification of Biological Systems: Systems Biology Approach'; 08 December 2017.

Prof. Akio Ebihara, Applied Biological Sciences, Gifu University, Japan; 'Introduction to structural biology'; 13 December 2017.

Prof. Debasish Kuila, Research Director, NSF CREST Bioenergy Centre; 'Nanocatalyst Development for Fuels from Biomass at NSF-CREST Bioenergy Centre of NC A&T'; 19 December 2017.

Computer Science

Prof. Paritosh Pandya, TIFR Mumbai; 'DCSYNTH: Guided Controller Synthesis with Soft Goals'; 24 November 2017.

Electronics

Dr. Prem Kumar Patchaikani, General Electronics Global Research, Bangalore; 'Advanced MATLAB Applications to Robotics & Signal Processing 2017'; 07 and 08 October 2017.

Dr. K. Samudravijaya, Tata Institute of Fundamental Research (TIFR), Mumbai; 'Advanced MATLAB Applications to Robotics & Signal Processing 2017'; 07 and 08 October 2017.

Humanities

Prof. Ratul Lahkar, IIM Udaipur; 'An Evolutionary Analysis of Growth and Fluctuations with Negative Externalities'; 20 October 2017.

Prof. Anabel Ford, Director, ISBER/MesoAmerican Research Centre University of California, Santa Barbara, USA; 'Learning from the Ancient Maya and El Pilar: Conservation of Culture and Nature in the Maya Forest'; 23 October 2017.

Prof. R. Radhakrishnan, Chancellor's Professor of English & Comparative Literature, University of California, Irvine; 'Jacques Derrida: The Philosopher that Therefore he has to be'; 30 October 2017.

Dr. S.B. Ota, Director, Archaeological Survey of India, Ministry of Culture, Govt. of India; 'Investigations of Prehistoric Sites: Examples from Central India'; 21 November 2017.

Energy

Prof. Eduardo Corton, University of Buenos Aires, and IQUIBICEN-CONICET, Argentina; 'Exchange of research ideas and future research collaborations in the area of Biosensors and Microbial fuel cell'; 31 October – 16 January, 2018.

Rural Technology

Dr. Jayanta Kumar Sarma; 'Indigenous Knowledge System base practices and glimpses of traditional technology- Some observation from NER, India'; 15 November, 2017.

Graduate Research Meet 2017

The Department of Humanities and Social Sciences of IIT Guwahati organized the fourth edition of its annual research meet from 2-4 November 2017. This conference is a novel event organized by the incumbent graduate students of the Department under faculty mentoring. The Graduate Research Meet was conceptualised first in 2014 as a platform to provide the research scholars in the North East and across the country to showcase their research, interact with their peers and receive mentorship from subject experts in a variety of fields. Student conferences are rare in India and young researchers in the humanities and social sciences often do not get opportunities for peer interaction and input on their research

projects. Moreover, there is a significant gap in dialogue between graduate students of the North East and that of other parts of India. Organizing a national seminar in IIT Guwahati inviting students from all across India aims also to bridge this gap. The research scholars of IITG-HSS organize GRM every year with such realities and considerations in mind. The IIT Guwahati's HSS department is uniquely able to provide support in this respect in that it uses a multidisciplinary faculty comprising eleven disciplines from the humanities

and social sciences. The catch line of GRM is 'Ideas, Innovation, Interdisciplinary.'

This year's meet was a successful event with the Director of IIT Guwahati, Prof. Gautam Biswas inaugurating the Meet and well-known author and academic Prof. Nilanjana Gupta, Dept. of English Jadavpur University, delivering the keynote address, which was interestingly titled "The In(ter)discipline of Knowledge". Like every year, GRM '17 too drew participants from prestigious institutes outside Assam, like Jawaharlal Nehru University, Delhi University, IIT Delhi, IIT Bombay and IIT-ISM Dhanbad, TISS Bombay, Central University of Gujarat, Aligarh Muslim University, Centre for Studies

in Social Science, Calcutta, Ambedkar University, Delhi. Participants were also from premier institutes of North Eastern region such as Gauhati University, TISS Guwahati, Assam University, North Eastern Hill University, Dibrugarh University, etc. The themes of the papers were varied and ranged across the disciplinary spectrum of humanities and social sciences. Upholding its motto, the 3-day seminar was divided into sessions that clubbed papers of different disciplines while having a certain continuity in



narrative. These sessions were chaired by experts from institutes of Assam as well as outside. This is what sets GRM apart from other national and international seminars in the sphere of humanities and social sciences where most of the academic seminars centre on either specific discipline or themes. By now GRM has gained considerable recognition within Indian

academia and with each passing year it is levelling up in terms of organization and papers, carefully curated and animatedly discussed at the conference.

The Meet was sponsored by the Indian Council of Social Science Research (Delhi) with generous support from Oil India and the Indian Society of Labour Economics.

FCS2017: National Workshop on Fluorescence and Raman Spectroscopy



FCS 2017: National Workshop on Fluorescence and Raman Spectroscopy was organized by the Department of Bioscience and Bioengineering at IIT Guwahati with support from Tata Institute of Fundamental Research, Mumbai and the Fluorescence Society, from 17 to 21 December 2017 .

It was attended by several distinguished scientists from India and abroad. In the first half of the meeting, several teaching talks, hands-on and tutorial sessions were conducted to explain the techniques to students.

In the latter part of the meeting, several new developments on the application of fluorescence and Raman techniques in Chemistry and Biology were discussed. The meeting was successful and liked by all the participants.



Biotechnology Orientation Programme-1 was held on 17 October 2017 by Biotech Hub at Conference Hall and Centre for the Environment, IIT Guwahati which was attended by 79 students accompanied by 5 teachers from B.P. Chaliha College, Nagerbera, Kamrup. The students who came from a very interior and remote location was excited to attend the lectures from Prof. Utpal Bora and his PhD students, and also to interact via skype with experts from National Labs in Delhi namely Dr. Dinesh Kumar, IASRI and Dr. Nirala Ramchiary, Jawaharlal NU.

Biotechnology Orientation Programme-2 was held on 7th November, 2017 by Biotech Hub at Centre for the Environment, IIT Guwahati which was attended by more than 50 participants including higher secondary level students and teachers from Mandia H.S. School, Mandia, Barpeta. Lectures and interactive sessions were organized by Prof. Utpal Bora and his team members. Skype-mediated interactions with senior scientists- Dr. Sunil Kumar Singh from ICARNBAIM, Mau (UP) and Prof. N. Senthil Kumar from Dept. of Biotechnology, Mizoram University.



Invited Lectures of IIT Guwahati Faculty in India and Abroad

BSBE

Kannan Pakshirajan; Bioprocessing for waste fed biorefineries; SASTRA, Thanjavur, Tamil Nadu; 11-16 December 2017.

Kannan Pakshirajan; Novel sulfidogenic bioreactors for metallic wastewater treatment; IIT Guwhati; 9-11 December 2017.

Kannan Pakshirajan; Evaluation of cheaply produced biochar from biomass gasification effluent for simultaneous polycyclic aromatic hydrocarbon degradation and lipid accumulation by *Rhodococcus opacus*; Challenges in Environmental Science and Engineering, CESE-2017, Kunming, China; 11 – 15 November 2017.

Kannan Pakshirajan; Chitosan production from *Penicillium citrinum* biomass for value addition and resource recovery from Industrial wastewater; Challenges in Environmental Science and Engineering, CESE-2017; Kunming, China; 11 – 15 November 2017.

Kannan Pakshirajan; Bioprocessing strategies for production of biofuels and value addition of waste water and waste sludge; Third winter school, Gifu University, Japan; 19-21 December 2017.

Dr. Ranjan Tamuli; Molecular tools for genomics and proteomics research in fungi; College of Veterinary Science, Assam Agricultural University; 21 November 2017.

Dr. Lalit Pandey; Self Assembled Monolayers in biomaterials; North East Hill University, Shillong; 22 November 2017.

Dr. Biman B Mandal; Silk Based Nano-Composite Scaffolds for Bone Tissue Engineering; 2nd anoBioteck International Conference, Trivandrum; 8 December, 2017.

Dr. Biman B Mandal; Silk Biomaterials for Human Tissue

Engineering; Asian Biomaterials Congress (ABMC), Trivandrum; 26 October, 2017.

Dr. Biman B Mandal; Engineering Nano-Biometitic

Scaffolds for Bone Tissue Regeneration; Annual conference, Indian Society for Dental Research (ISDR), AIIMS, Delhi; 2 October, 2017.

Dr. Biman B Mandal; Bioengineered Human Tissues; Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum; 25 October, 2017.

Navin Gupta; Biclustered Independent Component Analysis (B-ICA) for Complex Biomarker and Subtype Identification; Invited Session Talk, Annual Meet of Indian Academy of Neuroscience 2017, Cuttack; October 2017.

Rakhi Chaturvedi; Cellular Totipotency and Bioaccumulation Capabilities of Plant Cells using Plant Tissue Culture Techniques; 2nd PAN IIT BIOTECH MEET on Synthetic Biology and Cardiovascular Diseases, The International Centre Goa; 5-7 October, 2017.

Srivastava V. and Rakhi Chaturvedi; Optimized micropropagation protocol to establish high-yielding true-to-type plantations of elite genotypes of *Tinospora cordifolia* for consistent production of therapeutic compounds; International Plant Propagators society (IPPS) Wilsonville, Oregon, US; 17-20 October, 2017.

Chemistry

T. Punniyamurthy; Regioselective C-H Functionalization and Carbon-Heteroatom Bond Formation; National Symposium on Recent Trends in Chemical Sciences, NIT Meghalaya; 12 October 2017.

M. Sarma; Invited Lecture at Half Day Symposium; Department of Chemistry, IIT Bombay; 31 October 2017.

A. S. Achalkumar; Bay-annulated Perylene Tetraesters as Electroluminescent Liquid Crystals; 24th National Conference on Liquid Crystals, IISER Mohali ; 11-13 October 2017.

Subhas Chandra Pan; Organocatalytic Asymmetric Cyclization Reactions; IIT Roorkee; 22-24 December 2017.

Pavan K. Kancharla; Organocatalytic Synthesis of 2-deoxyglycosides; IIT Roorkee; 22-24 December 2017.

Anil K Saikia; Contemporary Facets in Organic Chemistry; IIT Roorkee; 22 December 2017.

Uttam Manna; International conference (APA-2017) on Polymer Science & Advanced Technology, Delhi; 23-25 November 2017.

Uttam Manna; International Conference on Nanotechnology;

Ideas, Innovations and Initiatives; IIT Roorkee; 06-08 December 2017.

Uttam Manna; CompFlu; IIT Madras; 18-20 December 2017.

Design

Supradip Das; 'Innovation in Entrepreneurship'; Lovely Professional University, Punjab; 27-29 October 2017.

Abhishek Shrivastava; 'Design Workshop'; Central Institute of Technology, Kokrajhar; 31 October to 01 November 2017.

Avinash Shende; 'Abductive Thinking in Design'; Panjab University, Chandigarh; February 2017.

Urmi R. Salve; 'Basic Ergonomics for Design'; NID Kurukshetra; 3 October to 13 October 2017.

Mechanical

Amaresh Dalal; "AnuPravaha: A General Purpose Indigenous CFD Solver for Multiphysics Applications"; 44th National Conference on Fluid Mechanics and Fluid Power, Amrita University, Kollam, India; 14 -16 December, 2017.

U.S. Dixit; "A talk on laser forming and surface alloying at IGNIS 2017"; Royal Global University, Guwahati; 30 October , 2017.

P. Muthukumar; "Green Energy Technologies"; Pondicherry University; 15th December 2017.

P. Muthukumar; "Recent trends in Refrigeration and Air-conditioning systems"; Pondicherry Engineering College; 15 December 2017.

P Muthukumar; "Porous Medium Combustion- An Energy Efficient Technologies"; Sikkim Manipal University; 9 December 2017.

Physics

D. Borah; Neutrino Astronomy with the IceCube Experiment & Connection to Dark Matter; St. Anthony's College; Shillong; 7 October 2017.

D. Borah; Gauged B-L Symmetry: Neutrino Mass & Dark Matter; IIT Bombay, Mumbai; 12 November 2017.

D. Borah; Connecting Dark Matter with the Baryon Asymmetry of the Universe; IISER Bhopal; 16 December 2017.

Pratima Agarwal; Opto-electronic properties of Nanocrystalline Silicon based superlattice structures; International Conference on Thin Films (ICTF-2017) NPL, New Delhi, India; 15 Nov 2017.

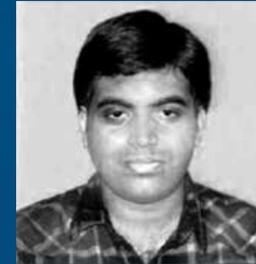
Rural Technology

Meena Khwairakpam; "Vermicomposting of biodegradable waste"; PG College, Chhindwara (M.P); 19-21 December 2017.

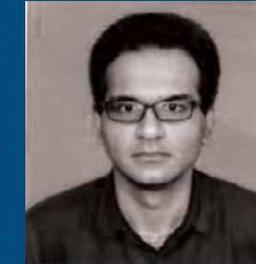
Sudip Mitra; "Managing Surface Water Bodies in East and NE India"; "National Workshop on Environmental priorities and Challenges with Special Focus on Eastern and North-Eastern Regions" organised by CSIR-NEERI; 28 - 29 November, 2017.

Sudip Mitra; "Evaluator for State level Children Science Congress"; ASTEC, Guwahati; 25-28 October 2017.

New Joinings



Dr. Agnirup Sarkar
Assistant Professor
Humanities



Dr. Ritwik Ranjan
Assistant Professor
Humanities



Mr. Phool Chand Kumawat
Jr. Tech. Superintendent
Electronics



Mr. Abhishek Sarma
Technical Officer Gr.-II
Electronics



Ms. Syeda Reshma Begum
Jr. Tech. Superintendent
Civil



Mr. Sujit Kumar Deb
Jr. Tech. Superintendent
CIF



Ms. Rumi Rani Pao
Jr. Tech. Superintendent
CIF



Mr. Jyotirmoy Kakati
Technical Officer Gr.-II
Mechanical



Ms. Hiran Deka
Jr. Attendant
Faculty Affairs



Mr. Rubul Gogoi
Jr. Tech. Superintendent
Humanities



Mr. Motiur Rahman Khan
Jr. Technician
Electronics



Mr. Prakash Tripathi
Jr. Technician
Electronics



Mr. Rakesh Singha
Jr. Technician
Electronics



Mr. Sadananda Phukan
PTI



Mr. Dipunjay Brahma
Asst. Coach



Ms. Jyoti Kumari Mahato
Jr. Technician
Chemical



Mr. Wasim Akram
Jr. Technician
Chemical



Ms. Tulika Bharali
Asst. Coach



Mr. Kishalay Chakraborty
Assistant Coach



Mr. Jatin Rabha
Jr. Technician
Electronics



Festivity at Umiam Hostel





Diwali Celebrations across various hostels of the Institute



Indian Institute of Technology Guwahati
Guwahati – 781039, India

THE IITG MONITOR, the quarterly Newsletter of Indian Institute of Technology Guwahati is published by the Peer Review and Institutional Ranking office, IIT Guwahati, Guwahati 781039. Materials for Publication in the Newsletter may be sent to the Peer Review and Institutional Ranking office by 15th of every month (Email: newsletter@iitg.ac.in, Phone +91-361-2584000).