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IN THIS ISSUE

01

Fourth International
Symposium
(ASP 17)

03

Indo-Japan Bilateral
Symposium

05

ICSSR-Sponsored Two-Week
Capacity Building Programme

06

4th National Workshop on NEMS

07

Research
Conclave' 18

09

New Research
Projects

12

Research
Publications
(Journals)

10

Patents

29

Students Awards
and Honours

31

Book/ Book Chapters

33

Faculty Awards
and Honours

36

Invited Lectures of IIT
Guwahati Faculty in India
and Abroad

40

Republic Day
Celebration
2018

34

Visitors from
Other Institutes





Fourth International Symposium on Advances in Sustainable Polymers (ASP 17)

Centre of Excellence for Sustainable Polymers (CoE-SusPol), Department of Chemical Engineering successfully organized the Fourth International Symposium on Advances in Sustainable Polymers (ASP-17) during January 8–11, 2018 with the aim of promoting various biodegradable plastic-based technologies in line with the global emphasis on environmental protection and sustainable growth.

During this scientific gathering, many distinguished Professors and senior scientists, researchers, policymakers, from across the country, senior officials of various industries including the Reliance Industries limited, Indian Oil Corporation Limited, Oil India limited, Bharat Petroleum Corporation Limited, Numaligarh Refinery Limited, and Brahmaputra Chemicals and Petrochemicals Limited, etc. including delegates representing the USA, Canada, Japan, Taiwan, Czech Republic, Singapore, Nepal, Thailand, Germany, Australia and other countries attended this symposium. The Symposium was supported by the North Eastern Council, Govt. of India (NEC), Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Govt. of India, Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. of India, CSIR and the Oil India limited, Reliance Industries limited, Indian Oil corporation limited, Anton Paar, SPECS, etc., were the major sponsors.

Serving as one platform which brought together all the stakeholders including academia and industry, the four days of symposium had four plenary sessions, three Bilateral Symposium sessions, and multiple technical sessions. The bilateral Symposium sessions included; Indo-Japan Bilateral Symposium, Indo-Taiwan Bilateral Symposium and Indo-Nepal Bilateral Symposium. On the side line of the symposium, one day IIT Guwahati and Kyoto Institute of Technology, Japan Technical Session was also organized. Experts from more than

fifteen countries delivered expert talk on different aspect of sustainable Polymers and allied areas. Pre and Post symposium workshops on Polymer Processing and 3D Printing and Molecular Modelling and Simulation of Sustainable Polymers for young scientists and PhD scholars were also successfully conducted.

The symposium began with the opening remarks of Prof. Ashok Misra, Former Director, IIT Bombay, who graced the occasion as the distinguished guest while Professor Emeritus Yoshiharo Kimura Kyoto Institute of Technology, Japan was the Guest of Honour in the inaugural session. It concluded with total of 111 paper presentations and 81 poster presentations from researchers covering a wide range of applications relating to advances made in the field of sustainable polymers. The symposium also witnessed the congregation of interactive dialogues and expert talks by eminent scientist from across the globe with Prof. Ramani Narayan, Michigan State University, USA, Prof. Kohei Oda, KIT, Japan, Prof. Amar K. Mohanty, University of Guelph; ON, Canada, Arup K. SenGupta, Lehigh University, Bethlehem, USA Prof. S. Sivaram, Former Director, NCL Pune to name a few.

The Symposium provided ample opportunity for the researchers across the world in sharing and gathering knowledge on various aspects of sustainable polymers starting from overviewing the current research activities and global trends on sustainable polymers (biobased and biodegradable plastics) and biobased materials to promoting these activities in their countries.

The highlight of the symposium being the signing of MoU between IITG and Ming Chi University of Technology, Taiwan and IIT Guwahati and Tomas Bata University in Zlín, Czech Republic. Chairing the session Prof. Dr. Henry H. Chen, Counsellor & Director, Science & Technology Division (TECC) of Taiwan in India. Dr. Vimal Katiyar served as an organizing chair for ASP 17. The fifth edition of ASP series will be organized in Japan in July 2019.

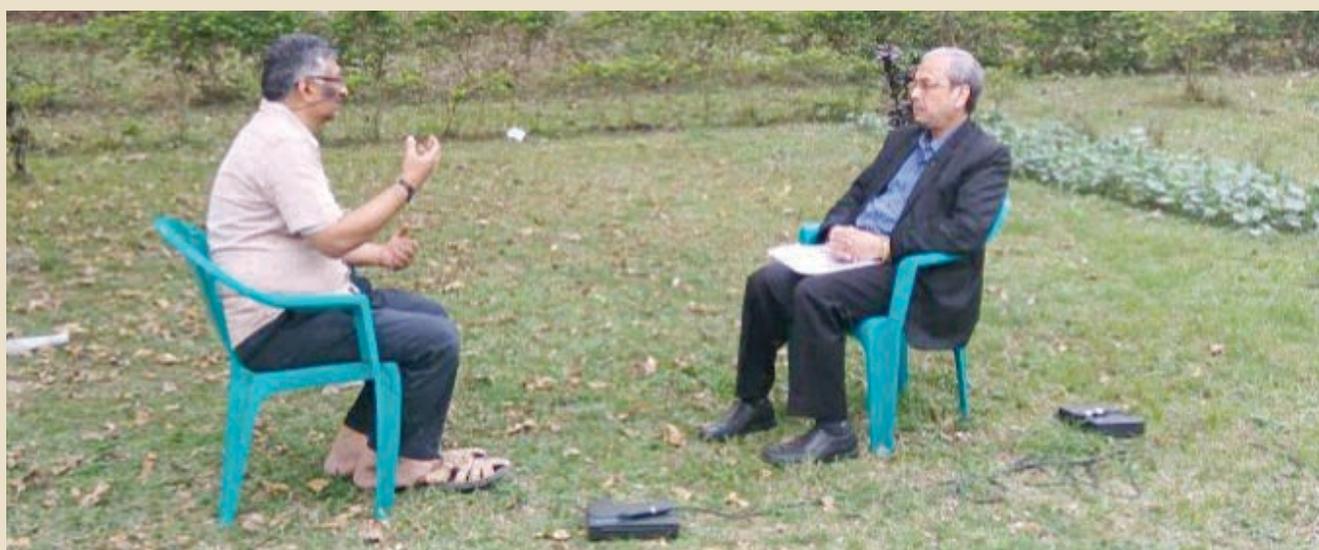
Memorandum of Understanding



MoU Exchange Ceremony between IIT Guwahati and Tomas Bata University in Zlín, Czech Republic during ASP 17



MoU Exchange Ceremony between IIT Guwahati and Ming Chi University of Technology, Taiwan during ASP 17



Prof. Gautan Biswas, Director, IIT Guwahati interacting with Shri T. V. Venkateswaran from Rajya Sabha TV. The details of the interview can be viewed at <https://www.youtube.com/watch?v=x91-hcGzxLO>.

Indo-Japan Bilateral Symposium on Future Perspectives of Bio-resource Utilization in North-East India

North-east India is home to abundant bio-resources. Ranging from medicinal plants, agri-horticultural produce and bio-resources are variegated and their customized utilization for the mankind is an inter-disciplinary research area that requires the amalgamation of concepts associated to science, technology, finance, administration and policy. Needless to convey, bio-resource utilization is a key theme to propel the accelerated growth of North-east India and particularly Assam, the gate way of the North-east.

To systematize and customize fruitful conversion of north-east bio-resources into valuable and value added products by overcoming scientific, technological and administrative challenges, IIT Guwahati hosted the Indo-Japan Bilateral symposium on Future Perspectives of Bio-resource Utilization in North-east India from 01 – 04 February 2018. The symposium is organized by IIT Guwahati and Gifu University, Japan and attempts to serve as a unique platform to enhance deliberations between regional, national and international stakeholders in academia, industry and administration. The event is generously supported by apex International (Japan Society for the Promotion of Science (JSPS), Japan) and apex National and Regional organizations/institutions (Department of Science and Technology (DST), New Delhi; Federation of Industrial & Commerce of North Eastern Region (FINER), Guwahati; North Eastern Regional Agricultural Marketing Cooperation Limited, (NERAMAC), Guwahati and Council of Scientific and Industrial Research (CSIR), New Delhi).

The international event of repute was attended by Professors/Scientists from reputed Japanese academic/research institutions (Gifu University, Kazusa DNA Research Institute, Kyoto University, University of Tsukuba, Research Institute for Humanity and Nature), scientists/professors from Indian research/academic institutions of North-east India and rest of the country, industry experts from Japanese and Indian bio-resource industry (Mitsubishi Chemical-Foods Corporation Limited, Japan; Oriental Yeast India Pvt Ltd., Director, Ibidem

India; Aashray Concept Foods, Guwahati; Global Entrade;) and apex administrative bodies of Government of Assam (FINER, NERAMAC, Biotech Park). Apart from scintillating academic sessions that demonstrate translational bio-resource research and development activities in North-east India, rest of India and Japan, the four day symposium of international repute attempted to foster the need to have relevant reforms in policy research associated to the accelerated knowledge economy of North-east India in the field of bio-resources. Dedicated sessions have been hosted with NERAMAC and FINER officials are part of the deliberations of the symposium. These sessions had deliberations from industry and policy/administrative research perspectives.

In addition, IJBS 17 also hosted many Oral and Poster presentations, which was deliberated by the budding scientists in the vast field of bio-resources. A dedicated session had been conducted towards integrating the views of experts/scientists/Professors of the North-east India followed with deliberations for envisioning a white paper resolution for accelerated twinning and co-operation activities in bio-resource R&D within the North-east India. An interesting feature of IJBS 17 is with respect to the integrated deliberations of Japan-Assam delegation during Advantage Assam event which has been a showcase project of the Government of Assam to encourage regional, national and global outreach. In summary, IJBS 17 attempted to consolidate the efforts of bio-resource community in the North-east India, rest of India and the world to envision upon a bright and prosperous bio-resource R&D activity in the near future.

Indian Co-ordinators of IJBS-17 namely Prof. Ramgopal Uppaluri, Prof. Vimal Katiyar and Prof. Lingaraj Sahoo have agreed to take lead role in furthering the white paper resolution to enhance bio-resource utilization in North-east India and rapid industrialization of bio-resource industries in North-east India.



Workshop on Wildlife Ecology and Seri-bioresources

BIOCONVERSE 2018

Workshop on Wildlife Ecology and Seri-bioresources (BIOCONVERSE) 2018 was organized as a part of BIODIVERSE 2018 at Manas National Park from 30th January to 1st February, 2018. The program included field visit to sericulture farms at Panbari, Chirang District of Assam, popular lecture and conservation awareness program at Bansbari, Manas National Park, Assam. BIOCONVERSE 2018 aimed to bring experts of various fields, general public and students for effective sharing of knowledge, practices and technologies which will provide a better foundation for conservation and sustainable use of biodiversity.



BIODIVERSE 2018

REFRESH-2018 Report

A capacity building workshop on “River Ecosystems and Fresh Water Biodiversity Research” (REFRESH 2018) was organized on 2nd February 2018 by the Centre for the Environment, IIT Guwahati. It was supported by the Department of Science and Technology- Science and Engineering Research Board (DST-SERB), and Department of Biotechnology (DBT), Government of India. The event had three technical sessions on River, Freshwater & Wetland ecosystems; Aquatic biodiversity and Informatics for ecological systems. Prominent speakers like T.V. Ramachandra, IISc Bangalore; Prakash Nautiyal, HNB Garhwal University; Sudip Mitra, IIT Guwahati; Dinesh Kumar, Indian Council of Agricultural Research-Indian Agricultural Statistics Research Institute, Pusa amongst others graced the occasion. Sixty-six participants including college students, research scholars and scientists attended the event. REFRESH also organized a “Brainstorming session-cum-panel discussion” on problems and prospects of the relevant areas of river biodiversity and ecosystem.



Few moments of REFRESH 2018

ICSSR-Sponsored Two-Week Capacity Building Programme for Faculty Members in Social Sciences CB 2018

7-18 March 2018

The Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati organized a two-week Capacity Building Programme for Faculty Members in Social Sciences (CB 2018) at the Conference Centre of IIT Guwahati during 7-18 March 2018. The CB 2018 was sponsored by the Indian Council of Social Science Research (ICSSR), New Delhi. 33 faculty members drawn from different academic institutions across the country participated in CB 2018. There were 40 technical sessions over 12 days out of which one day was devoted to the field trip to Deepor Beel in Guwahati. The participants made presentations on the field trip in three paper clinic sessions. Dr. S. Mallick was the Course Director and Dr. N. Kipgen was the Co-Course Director of CB 2018.



4th National Workshop on NEMS/ MEMS and Theranostic Devices NWNTD-2018

The 4th National Workshop on NEMS/MEMS and Theranostic Devices NWNTD-2018, was organized by Centre for Excellence in Research and Development of Nanoelectronics Theranostic Devices under the aegis of Centre for Nanotechnology at the Indian Institute of Technology Guwahati from February 26 – 28, 2018. The workshop was targeted to improve the academic awareness on the micro/ nanoelectronic fabrication and characterization in the NE region of the country. About 200 participants, comprising senior research scholars and faculty members from Eastern and North-eastern India, attended the workshop.

The scientific program included Invited Talks, Panel Discussion, Lab Session and Hands-on session on sophisticated equipment such as Confocal Microscope; Atomic Force Microscope; Electron Beam Lithography; RF Sputtering; Electrospinning; TEM and FESEM followed by Group Discussion with the experts on relevant research problems and Poster presentation on the following themes:

- Health Care Products
- Micro/Nano Electronic Devices.

There were three sessions, Session-I: Inauguration; Session-II: Product development/Start-up/Fabrication and Characterisation and Session-III: Theranostic Devices/Fabrication and Characterisation followed by Keynote Lecture, Invited Lecture and Panel discussion by distinguished researchers from academia and industry such as Prof. Gautam Biswas, Director, IIT Guwahati; Prof. Arun Chattopadhyay, IIT Guwahati; Prof. Navakanta Bhat, IISc Bangalore; Dr. Satadal Saha, JSV Innovations; Mr. Sohom Banerjee; Dr. Jitendar Sharma, MD & CEO, AMTZ; Prof. Ashok Kumar Ganguli, IIT Delhi; Prof. Suman Chakraborty, IIT Kharagpur; Dr. Ankur Verma, IIT BHU; Dr. Kingshuk Poddar, Assistant Director, KIHT; Mr. Sahil Jagnani, Director, Forus Electric Pvt. Ltd.; Prof. Sirshendu De, IIT Kharagpur; Prof. M. Ghanashyam Krishna, University of Hyderabad and Dr. Sandip Patil, Director, E-Spin Nanotech.



Research Conclave' 18



Padma Shri Jadav Payeng gracing the occasion with his presence

and Image J) with participants coming from across the country. One of the major attractions for the event was the lecture by the famous physicist Professor H.C. Verma who enlightened the audience with his wisdom. Professor Sumon K. Sinha's (former Professor of University of Mississippi) demonstration of fixed wing UAV (Unmanned Aerial Vehicle) and Mr. Dinesh Lahoti's (Founder of Edugenie) "Wow Maths and Science Show" were among other additional captivating events of the day.

Second day, the campus was enthralled with the pleasant visit of Padma Shri Jadhav Payeng 'The Forest Man of India', who led the mega plantation drive which was in collaboration with the Engineering section of IIT Guwahati. The day followed with talks from eminent personalities like that of Padma Shri A. S. Kiran Kumar (Former Chairman,



ISRO) and Prof. Yuji Iwahori (Chubu University, Japan). The day also hosted a motivational lecture by Prof. Arun Chattopadhyay (Department of Chemistry IITG) several other workshops along with Oral and Poster presentations.

The highlight of the third day were presentations of participants coming from specific departments. The event was followed by Three Minute Thesis presentation, Model exhibition, General Quiz and other workshops (Internet of Things and Advanced Origin). Dr. Prabuddha Ganguly (CEO Vision IPR) and Dr. Raksh Vir Jasra (Senior Vice President, Reliance

Industries) enlightened the campus on 'Patent writing and Copyright' and 'Opportunities in Chemical sciences' respectively. Interestingly, for the very first time a knowledge booth on 'Birds of IIT Guwahati' was put up to educate the audience on the importance of biodiversity and the migration of birds taking place in campus. The photography exhibition 'Chitra' was an add on to the series of non-technical events during Research Conclave'18. The event concluded with sustainability as its closing remark with providing plant saplings as a token of memory to all the invited speakers and judges, hoping for the world to go greener day by day.



New Joining



Mr. Bidyut Bikash Boruah
Assistant Security Officer



Dr. Nesmita Das
Students' Counsellor



Ms. Khurshida Yasmin
Jr. Technician



Mr. Deepjyoti Saikia
Technical Officer Gr.-II

8th National Science Film Festival of India 2018

8th edition of India's biggest science film festival - 8th National Science Film Festival of India 2018, was held from 20 to 24 February 2018 at Gauhati University, Guwahati, Assam, India.

The NSFFI aimed to foster, strengthen and create scientific temper through popular science films; recognize the initiative and output of science film makers on the specific aspects of science, technology, environment, health and related issues; create a platform to interact with film makers, scientists and enthusiasts to create a better understanding of the universe; encourage citizen science and public participation & promote appreciation of science films.

On 20 February after the inauguration of the festival, Prof. Gautam Biswas along with Prof. P. K. Iyer, Prof. A. Chattopadhyay, Prof. Chandan Mahanta, Prof. P. Poullose, Prof. V. Katiyar, Prof. P. K. Das and Prof. A. Kalamdhad of IIT Guwahati participated in a panel discussion on 'Emerging Areas for Science Film Making'.

On 22 February, Ms Lovita J R Morang, Film Maker and Dr. Biman B. Mandal of IITG Guwahati discussed about the pre-production process of a film in making about Discovery of protein from silkworm for affordable treatment - My Mulberry heart: Silk for life.



Seen in the picture is Prof. Gautam Biswas, Director, IIT Guwahati interacting with media personnel.

New Research Projects

Title: Identification of novel and conserved microRNAs involved in drought stress regulation in mungbean.

Funding Agency: SERB.

Principal Investigator: Dr. Sanjeev Kumar;

Mentor: Dr. Lingaraj Sahoo.

Title: Placental oxidative stress in gestational diabetes Mellitus.

Funding Agency: ICMR.

Principal Investigator: Dr. A.B. Kunnumakkara.

Title: Bioengineered 3D constructs for cartilage repair, osteochondral regeneration and high throughput drug screening towards osteoarthritis management.

Funding Agency: SERB.

Principal Investigator: Dr. Biman B. Mandal.

Title: Structural and functional investigation of mammalian cell entry (MCE) proteins from human pathogens: development of structure-based lead molecules.

Funding Agency: SERB.

Principal Investigator: Dr. Shankar Prasad Kanaujia.

Title: Seedless plant production and mass scale propagation of musa balbisiana (Bhimkol Banana) of NER using in-vitro approaches.

Funding Agency: DBT.

Principal Investigator: Dr. Rakhi Chaturvedi.

Title: Functional collagen nanoparticle impregnated silk nano-ceramic composite 3D matrices for flat bone regeneration.

Funding Agency: DBT.

Principal Investigator: Dr. Biman B. Mandal.

Title: Fabrication of Biocompatible Scaffolds for Delivery of Stem Cells in Myocardial Infarct Model: In Search of an Ideal Cardiac Patch.

Funding Agency: DBT.

Principal Investigator: Dr. Biman B. Mandal.

Title: To impart quality education to girls in realm of science and engineering to inculcate scientific temperament.

Funding Agency: DST.

Principal Investigator: Dr. Rakhi Chaturvedi.

Title: Design of a virtual collaborative platform for creative problem solving emphasizing on.....multiple formats of display.

Funding Agency: IITG.

Principal Investigator: Dr. Debayan Dhar.

Title: Detecting semantic attacks in Cyber-Physical Systems

Funding Agency: IITG.

Principal Investigator: Dr. Ashok Singh Sairam.

Title: Complexation on the surface of metal halide perovskite nanocrystals for application as energy materials.

Funding Agency: DST.

Principal Investigator: Dr. Satyapriya Bhandari; **Mentor:** Dr. Arun Chattopadhyay.

Title: Biophysical characterization of extracellular vesicles (EVs) using single molecule detection (SMD) methods: a potential non-invasive diagnostic tool.

Funding Agency: DST.

Principal Investigator: Dr. Tatini Rakshit;

Mentor: Dr. Arun Chattopadhyay.

Title: Nano-Engineered magnetic mesoporous catalyst coupled with hybrid sonoelectro system as advanced water treatment technology.

Funding Agency: DST.

Principal Investigator: Dr. Binota Thokchom;

Mentor: Dr. P.K. Iyer.

Title: Bioremediation and Bioconversion of waste with complex photosynthetic organisms and heterotrophs under aerobic and anaerobic condition with generation of bioenergy.

Funding Agency: DST.

Principal Investigator: Dr. Lepakshi Barbora.

Title: Synthesis and MR Image Investigation on MRI Contrast Agent-Entrapped Mesoporous Silica Nanoparticles.

Funding Agency: DBT.

Principal Investigator: Dr. Chandan Mukherjee.

Title: User cooperation in green communication networks.

Funding Agency: IITG.

Principal Investigator: Dr. Satyam Agarwal.

Title: Analysis and design of wireless powered communication network using massive number of antennas at the base station.

Funding Agency: IITG.

Principal Investigator: Dr. Salil Kashyap.

Title: Assessment of variation in microbial communities driven by soil pH and isolation of culturable phosphate solubilizing actinobacteria

Funding Agency: SERB.

Principal Investigator: Dr. Jintu Dutta;

Mentor: Dr. Utpal Bora.

Title: The development and implementation of sensors and treatment technologies for freshwater systems in India.

Funding Agency: DST.

Principal Investigator: Dr. Kannan Pakshirajan.

Title: A Historical study of Civil-Military Relationship in north-eastern India: 1930-1950.

Funding Agency: IITG.

Principal Investigator: Dr. Vipul Dutta.

Title: Theoretical studies of quantum phase transitions of dipolar bosons in frustrated and flatband lattices.

Funding Agency: SERB.

Principal Investigator: Dr. Tapan Mishra.

Title: Laser cooling and trapping of Rubidium atom, and superflash of light using the narrow $5S_{1/2} \rightarrow 6P_{3/2}$ transition at 420 nm.

Funding Agency: SERB.

Principal Investigator: Dr. Kanhaiya Pandey.

Title: Programme support for research in Biological Sciences and Healthcare Engineering in North East Region.

Funding Agency: DBT.

Principal Investigator: DoRND.

Title: Development of Microbial Fuel Cells and theoretical modeling on the multiple effect of flow-materials in waste water bio-energy reactor.

Funding Agency: DST.

Principal Investigator: Dr. Amaresh Dalal.

Patents

Inventor: Gaurav Kumar, Karuna Kalita, Kari Martti Juhani Tammi, Wee Keong Khoo, Seamus Dominic Garvey.

Title: Generation of Desired Frequency Force in Bridge Configured Electrical Machines for Bearingless Applications.

Inventor: Uday Shanker Dixit, Arun Chandra Borsaikia, Amit Raj.

Title: Bonding mechanism in autoclaved aerated concrete (AAC) block unit for enhancement of lateral strength in masonry wall system and process for its manufacturing.

Inventor: Manash Kamal Bhuyan, Banajit Ghosh.

Title: Automatic method for detection of defects in Printed Circuit Board.

Inventor: Bhubaneswar Mandal, Tanmay Mandal

Title: Carboxylate Based Functional Mimics of α -Secretase for Drug Design against Amyloidoses.

Inventor: Mitradip Bhattacharjee, Prasfutura Paul, Dipankar Bandyopadhyay.

Title: A magneto-heating therapeutic (MHT) pad to streamline arterial blood flow to reduce hypertension

or high blood pressure and facilitate oxygenation-deoxygenation of blood and thereof.

Inventor: Mitradip Bhattacharjee, Dipankar Bandyopadhyay.

Title: A method of measuring distance and angle of view by harnessing the concept of observed speed or velocity with applications in point-of-care testing of diseases associated with tunnel vision.

Inventor: Hrishikesh Sharma, Suman Kumar.

Title: Design for use of Bamboo for Construction of Frangible Security Watch Tower.

Inventor: Uttam Manna, Adil N. Rather.

Title: A Method for Producing Superhydrophobic Coating on Fibrous Material and A Product Thereof.

Inventor: Sachin Kumar, Rakesh Kumar, Vishnu Kumar.

Title: Use of recombinant Newcastle disease virus expressed E2 and Erns proteins of classical swine fever virus for its use as a vaccine and diagnostics in pigs.

Inventor: Dr. Hrishikesh Sharma (CE), Mr. Suman Kumar (RS)

Title: Development of BHISM for Blast and Impact Resistant Design and Testing of Products

Inventor: Dr. Debasish Das (BSBE), Dr. Gargi Goswami, Ankan Sinha, Ratan Kumar, B.C. Dutta, Harender Singh

Title: Process engineering strategy for high density cultivation of microalgal biomass with improved productivity coupling growth kinetic driven nutrient feeding recipe and dynamic increase in illumination

Inventor: Dr. Praveen Kumar (EEE), Gautam Rituraj (RS)

Title: Coil Arrangements for Improved Coupling and Low Electromagnetic Emissions in Wireless Power Transfer Systems

Inventor: Dr. Bhubaneswar Mandal (CHM), Tanmay Mandal (CHM, Student)

Title: Novel Taurine-Peptide Conjugates for Drug Design against Alzheimer's Disease and Related Disorders

Inventor: Dr. Senthilkumar Sivaprakasam (BSBE), Ganesh Nehru (RS), Subbi Rami Reddy Tadi

Title: Process for the production of heparosan in *Bacillus megaterium*

Inventor: Dr. P. K. Iyer (CHM), Niranjan Meher (RS)

Title: An Organic Probe for the Ultradetection of Hydrazine via Simple Cost effective and Portable Platform

Inventor: Dr. P. K. Iyer (CHM), Akhtar Hussain, Anamika Kalita

Title: Method for the Development of Well Preserved Substrate Versatile Latent Fingerprints and its Visualization Utilizing Aggregation Induced Enhanced Emission Active Conjugated Polyelectrolyte

Inventor: Dr. P. K. Iyer (CHM), Nehal Zehra

Title: Method for the Ultradetection of Nerve Gas Vapors Using Amine Functionalized Conjugated Polymer Based Electrical Sensor

Inventor: Dr. Sisir Kumar Nayal (EEE), Dr. Niranjan Sahoo (ME) Mrutyunjay Maharana

Title: Nonedible vegetable oil based dielectric liquid and use thereof in power and distribution transformer

Inventor: Dr. Vimal Katiyar (CLE), Narendren Soundararajan

Title: Membrane Filter for Cellulose Purification

Inventor: Dr. Vimal Katiyar (CLE), Narendren Soundararajan

Title: Polymer Composite Membrane for Water Purification

Research Publications (Journals)

BSBE

N. Sreekumar, A. J. Chennattusery, 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; 2018; DoI 10.1007/s13762-017-1491-z.

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; 2018; Doi: 10.1128/AEM.02360-17.

Khushwant Singh, Ankit Gangrade, Sourav Bhowmick, Achintya Jana, Biman B. Mandal, Neeladri Das; Self-Assembly of a [1+1] Ionic Hexagonal Macrocyclic and its Antiproliferative Activity; Frontiers in Chemistry; 2018; 6; 87-93.

Jadi Praveen Kumar; Rocktotpal Konwarh; Manishekhar Kumar; Ankit Gangrade; Biman B. Mandal; Potential nanomedicine applications of multifunctional carbon nanoparticles developed using green technology; ACS Sustainable Chemistry & Engineering; 2018; 6; 1235-1245.

Dimple Chouhan, Janani Guru, Bijayashree Chakraborty, Samit Nandi and Biman B Mandal; Functionalized PVA-Silk blended nanofibrous mats promote diabetic wound healing via regulation of extracellular matrix and tissue remodelling; Journal of Tissue Engineering and Regenerative Medicine; 2018; 12; e1559-1570.

Janani Guru, Samit Nandi and Biman B Mandal; Functional hepatocyte clusters on bioactive blend silk matrices towards generating bioartificial liver constructs; Acta Biomaterialia; 2018; 67; 167-182.

Bibhas K. Bhunia, David Kaplan and Biman B Mandal; Silk-Based Multilayered Angle-Ply Annulus Fibrosus Construct to Recapitulate Form and Function of the Intervertebral Disc; PNAS; 2018; 115; 477-482.

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; 2018; 249; 767-776.

N. Meher, S. Panda, S. Kumar and P. K. Iyer; Aldehyde group driven aggregation-induced enhanced emission in naphthalimides and its application for ultradetection of hydrazine on multiple platforms; Chemical Science; 2018; 9(15), 3978-3985.

S. Basak, L. Rangan; New record of nuclear DNA amounts of some Zingiberaceae species from North east India; Data in Brief; 2018; 17; 66-70.

P. Borah, P. Singh, L. Rangan, T. Karak, S. Mitra; Speciation and risk assessment of cadmium and chromium in soils: Can paper mill wastes intensify soil contamination and environmental risks?; Groundwater for Sustainable Development; 2018; 6; 188-189.

S. Basak, H. Krishnamurty, L. Rangan; Genome size variation among 3 selected genera of Zingiberoideae; Meta Gene; 2018; 15; 42-49.

E. R. Rene, N. Sergienko, T. Goswami, M. E. López, G. Kumar, G. D. Saratale, P. Venkatachalam, K. Pakshirajan and T. Swaminathan; Effects of concentration and gas flow rate on the removal of gas-phase toluene and xylene mixture in a compost biofilter; Bioresource technology; 2018; 248; 28-35.

N. Gupta, N.A. Manikandan, and K. Pakshirajan; Real-time lipid production and dairy wastewater treatment using *Rhodococcus opacus* in a bioreactor under fed-batch, continuous and continuous cell recycling modes for potential biodiesel application; Biofuels; 2018; 9; 2; 239-245.

Ranbhor Ranjit, Anil Kumar, Kirti Patel, Vibin Ramakrishnan, and Susheel Durani; Peptidomimetic Approach evolution of stereo-chemically randomized protein foldamers; Physical biology; 2018; doi:10.1088/1478-3975/aaac9a.

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- Prerana Gogoi P and Shankar Prasad Kanaujia; A presumed homologue of the regulatory subunits of eIF2B functions as ribose-1,5-bisphosphate isomerase in *Pyrococcus horikoshii* OT3; *Scientific Reports*; 2018; 8; 1891-1905.
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- Kartikeya Tiwari and Vikash Kumar Dubey; Fresh insights into the pyrimidine metabolism in the trypanosomatids. *Parasit Vectors*; *Parasites and Vectors*; 2018; 11; 1; 87.
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- Prachi Bhalla, Dr. Sabera Sultana, Adarsh Kumar Chiranjivi, Anil Kumar Saikia, Vikash Kumar Dubey; Synthesis and Evaluation of Methyl 4-(7-Hydroxy-4, 4, 8-Trimethyl-3-Oxabicyclo [3.3.1] Nonan-2-yl) Benzoate as an Antileishmanial Agent and Its Synergistic Effect with Miltefosine; *Antimicrobial Agents and Chemotherapy*; 2018; 62; 2; e01810-17- E01817.
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Students Awards and Honours

BSBE

Ishani Chakrabarty received the 1st prize in Oral presentation at the Indo-Japan Bilateral Symposium for Future Perspectives of Bioresource Utilization in North East India (IJBS'17) held at IIT Guwahati held on 4 February 2018.

Angshu Dutta received the Best Poster Award at Research Conclave – 2018 held at IIT Guwahati on 8-11 March 2018.

Devivasha Bordoloi received the Best Oral Presentation Award at International Conference on Trends in Biochemical and Biomedical Research, Varanasi held on 13-15 February 2018.

Ganesan Padmavathi received the Best Poster Presentation Award at 7th International Conference on Translational Cancer Research, Chennai held on 8-11 February 2018.

Devivasha Bordoloi received the Best Oral Presentation Award at 5th AIST International Imaging Workshop held at Biomedical Research Institute, Tsukuba Science city, Japan held on 21-30 January 2018.

K. N. R. Yoganand received the Best Oral Presentation at Research Conclave 2018 held at IIT Guwahati on 8-11 March 2018.

G. Janani received the Fulbright Nehru Doctoral Research Fellowship. G. Janani will be visiting USA for

09 months (starting July 2018) and pursued research work at McGowan Institute, Pittsburg University with Prof. Stephen Badylak on “Bioartificial Liver”.

Christy Noche K received the Best Poster Presentation Award held at IIT Guwahati on 8-11 March 2018.

Darshana Baruah received the Best Poster Presentation Award held at IIT Guwahati on 8-11 March 2018.

CHEMICAL

Prodyut Dhar, a student of Chemical Engineering Department was awarded with prestigious JSPS postdoctoral fellowship, Japan for carrying out his research at Kyoto University, Japan.

DESIGN

Deepshikha received the Design Challenge ‘Design Enabled Digital Technology for Social Impact’ at Delhi Design Festival for designing a conceptual mobile application “CHAKRA” to empower handloom weavers of India through digital retail held from 23-28 February 2018.

ELECTRONICS

Amit Kumar Baghel, Research Scholar and Shashak S. Kulkarni, Project Staff, Dept. of EEE received the Gandhian Young Technological Innovation (GYTI) 2018 award from the Honorable President of India at Rashtrapati Bhawan, New Delhi for the paper titled “Feasibility Study of Wireless Power Transfer using Metamaterial” on 19 March, 2018.

Shaik Affijulla Dept. of EEE received the Power System Operation Corporation – 2018 (POSOCO- 2018) award from the Power System Operation Corporation for the paper titled “Power System Protection using Estimated Dynamic Phasors”.

HUMANITIES

Namrata Borkotoky received the Best Oral Presentation award at IITG Research Conclave 2018 for the paper titled “Environmental History” held on 11 February 2018.

Manali Karmakar received the Best Oral Presentation award at IITG Research Conclave 2018 for the paper titled “Bioethics, disposable bodies, and literary studies” held on 11 February 2018.

Abhinav Sharm was Awarded for the 2018-19 LAMP Fellowship by Institute for Policy Research Studies, New Delhi for the paper title “Legislative Assistants to Members of Parliament”.

MECHANICAL

M. Ravi Sankar received the 3rd Prize for Oral presentation award at ASP-2018 Conference for the paper titled “PLA/Nano HAp Based Resorbable Composites: Devise to Fix Podiatry fixations” on 11 January 2018.

ENERGY

Shubhangi Bhardwaj; Young Scientist award; “Advances in Spectroscopic Techniques and Materials”, held at IIT (ISM)-Dhanbad; “Influence of process pressure

on structural and optical properties of TiO₂ thin films deposited using RF sputtering”, Citation & memento; 16 March 2018.

Philip Bernstein Saynik; Best poster award; “2nd International Conference on Waste Management: Recycle 2018” held at IIT Guwahati; “A comparative study on the chemical storage characteristics of bio-oil obtained by the pyrolysis of invasive weeds *Prosopis juliflora* and *Arundo donax*”, Citation and a gift voucher of Euro 150; 24 February 2018.

Mriganka Saha; SRISTI-BIRAC Appreciation Award; Winter school program organized by SRISTI Ahmedabad; Cash prize of Rs. 1,00,000/-; 26 February 2018.

Asha Yadav; First prize in poster presentation; “Research Conclave-2018”, held at IIT Guwahati; “Quantum size effects and tunable visible photoluminescence in a-Si:H/nc-Si:H superlattices”, Citation & cash prize; 11 March 2018.

Pilik Basumatary; Second prize in poster presentation; Research Conclave-2018”, held at IIT Guwahati; “Large area uniform MAPbI₃ thin films for perovskite solar cells using two step technique”, Citation & cash prize; 11 March 2018.

Shubhangi Bhardwaj; Third prize in poster presentation; “Research Conclave-2018”, held at IIT Guwahati; “Influence of substrate temperature on structural and optical properties of TiO₂ thin films deposited using RF sputtering”, Citation; 11 March 2018.

Shashank S. Kulkarni, MS(R) graduate of Centre for Energy in 2017-18, (currently project staff of EEE dept.) and Mr. Amit Kumar Baghel (Research Scholar of Department of EEE dept.) have jointly received the Gandhian Young Technological Innovation (GYTI) 2018 award for the project titled “Feasibility Study of Wireless Power Transfer using Metamaterial” from Honourable President of India in Rashtrapati Bhawan, New Delhi on March 19, 2018. The project work was carried out under the supervision of Dr. Sisir Kumar Nayak (Dept. of EEE) and Mr. D. Senthil Kumar (MTRDC, Bangalore).

Book / Book Chapters

BSBE

Ajaikumar B Kunnumakkara Devivasha Bordoloi, Javadi Monisha; "Cancer Cell Chemoresistance and Chemosensitization"; World Scientific; 2018; Total pages: 684; 978-981-3208-56-8.

Pradeep Kumar, Jayanta Kumar Patra, Pranjal Chandra; "Advances in Microbial Biotechnology: Current Trends and Future Prospects"; CRC Press, USA; 2018; Total pages: 650; 9781351248914.

D. Bordoloi, B. L. Sailo, N. Manteghi, G. Padmavathi and A. B. Kunnumakkara; "Introduction and Basic Concepts of Cancer" in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 1-14; 978-981-3208-56-8.

J. Monisha, A. Jaiswal, K. Banik, C. Harsha, A. K. Singh, D. Bordoloi and A. B. Kunnumakkara; "Cancer Cell Chemoresistance: A Prime Obstacle in Cancer Therapy" in Cancer cell chemoresistance and chemosensitization; World Scientific; 2018; 15-50; 978-981-3208-56-8.

N. K. Roy, A. Sharma, A. K. Singh, D. Bordoloi, B. L. Sailo, J. Monisha and A. B. Kunnumakkara; Bladder Cancer: Chemoresistance and Chemosensitization, in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 81-106; 978-981-3208-56-8.

G. Padmavathi, D. Bordoloi, K. Banik, J. Monisha, A. K. Singh and A. B. Kunnumakkara; Mechanism of Chemoresistance in Bone Cancer and Different Chemosensitization Approaches in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 107-128; 978-981-3208-56-8.

A. D. Khwairakpam, J. Monisha, K. Banik, C. Harsha, A. Sharma, D. Bordoloi and A. B. Kunnumakkara; Chemoresistance in Brain Cancer and Different Chemosensitization Approaches in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 163-180; 978-981-3208-56-8.

K. Banik, B. L. Sailo, K. K. Thakur, A. Jaiswal, J. Monisha, D. Bordoloi and A. B. Kunnumakkara; Potential of Different Chemosensitizers to Overcome Chemoresistance in Cervical Cancer in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 227-240; 978-981-3208-56-8.

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D. Bordoloi, K. Banik, A. D. Khwairakpam, A. Sharma, B. L. Sailo, J. Monisha and A. B. Kunnumakkara; Different Approaches to Overcome Chemoresistance in Esophageal Cancer in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 373-398; 978-981-3208-56-8.

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A. K. Singh, N. K. Roy, A. Anip, K. Banik, J. Monisha, D. Bordoloi and A. B. Kunnumakkara; Different Methods to Inhibit Chemoresistance in Hepatocellular Carcinoma in "Cancer cell chemoresistance and chemosensitization"; World Scientific; 2018; 479-528; 978-981-3208-56-8.

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S. Ojha, D. Singh, A. Sett, H. Chetia, D. Kabiraj and U. Bora; “Nanotechnology in Crop Protection” in “Nanomaterials in Plants, Algae and Micro-organism: Concepts and Controversies”; Academic Press; 2018; 1; 345-390; 0128116463, 9780128116463.

Nandana Bhardwaj, Dimple Chouhan, Biman B Mandal; “3D functional scaffolds for skin tissue engineering” in “Functional 3D tissue engineering scaffolds”; Woodhead Publisher (Elsevier), USA; 2018; 345-365; 9780081009796.

P. Bhattacharjee, P. Gupta, M. J. Christakiran, S. K. Nandi, Biman B. Mandal; “Silk-based matrices for bone tissue engineering applications” in “Functional 3D tissue engineering scaffolds”; Elsevier, USA; 2018; 439-472; 9780128136652.

Ritesh S. Malani, Sohan Singh, Arun Goyal and Vijayanand S. Moholkar; Ultrasound-assisted biodiesel production using KI-impregnated zinc oxide (ZnO) as heterogeneous catalyst: a mechanistic approach in “Recent Advances in Bioenergy Research”; Springer; 2018; 67-81.

Kuldeep Mahato, Suveen Kumar, Ananya Srivastava, Pawan K Maurya, Renu Singh, Pranjal Chandra; Electrochemical Immunosensors: Fundamentals and Applications in Clinical Diagnostics in “Handbook of Immunoassay Technologies”; Academic Press; 359-414; 9780128117941.

Kuldeep Mahato, Anupriya Baranwal, Ananya Srivastava, Pawan Kumar Maurya, Pranjal Chandra; Smart Materials for Biosensing Applications in “Techno-Societal 2016, International Conference on Advanced Technologies for Societal Applications”; Springer, Cham; 2018; 421-431; 978-3-319-53556-2.

Anupriya Baranwal, Ananya Srivastava, Pranjal Chandra; A Systematic Study on Phytosynthesized Silver Nanoparticles and Their Antimicrobial Mode of Action in “Advances in Microbial Biotechnology Current Trends and Future Prospects”; CRC Press, USA; 2018; 9781351248914.

DESIGN

I. Verma, S. Nath and S. Karmakar; “Research in Driver-Vehicle Interaction: Indian Scenario”; 353 – 361; ISBN 978-981-10-4980-4; 2018.

A. Chowdhury, D. Chakrabarti and S. Karmakar; “Anthropomorphic Televisions Are More Attractive: The Effect of Novelty”; Springer, Singapore; 243- 249; ISBN 978-981-10-4980-4; 2018.

C. Mondal and S. Karmakar; “A Study Exploring the Facets of Visual Elements in Ethnic Products: Case Study of Sarees from West Bengal”; Springer, Singapore; 821- 831; ISBN 978-981-10-4980-4; 2018.

ELECTRONICS

Shubh Lakshmi, Sanjib Ganguly; “Sustainable Energy Technology and Policies: A Transformational Journey”; Springer-Verlag; 1; 87-117; Jan 2018.

HUMANITIES

Vishaka Gulati, Arundhuti Dekha, Safa Fanain, Sumit Vij and Anamika Barua; “Building Bridges through dialogue for the Brahmaputra River Basin”; Routledge; 2018; 1; 177-196; 9781138060654.

B. Som; “Language as a Part of a Human Cognitive Mechanism: The View from Cognitive Linguistics”; Cambridge Scholar Publishing; 2018; 17-44; 978-1-5275-0766-1.

S. Kaur and B. Som; “Context Effects in Bilingual Language Processing”; IGI Global; 2018; DOI: 10.4018/978-1-5225-4009-0.ch008; 140-168; 9781522540090.

Deepankar Basu, Debarshi Das; “Managing Food: India’s Experience with the Public Distribution System”; Cambridge University Press; 2018; 215-235; 9781108236225.

K. Sarika and D. Hussain; “Inhibitors of the Information Technology Success: Insights from Qualitative Investigation”; Bloomsbury Publishing Private Ltd., New Delhi; 2018; 193-201; 9789386826855.

Nirmala Devi, Rajshree Bedamatta; “Factors Affecting Morbidity and Utilization of Healthcare Services: A Case Study of Nagaon District of Assam”; Springer Nature Singapore Pte Ltc; 2018; 425-444; 978-981-10-6103-5.

Vipul Dutta; “War and Indian military institutions: the emergence of the Indian Military Academy”; Routledge; 2018; 239-257; 978-1-138-106888.

Mrinal Kanti Dutta; “Irrigation in India: The Post-Green Revolution Experience, Challenges and Strategies”; Routledge London and New York; 2018; 96-111; 978-1-138-28629-0.

MECHANICAL

S. S. Pande and U. S. Dixit; “Precision Product-Process Design and Optimization: Select Papers from AIMTDR 2016”; Springer, Singapore; 2018; Total pages: 434; 9789811087677.

U. S. Dixit and R. Kant; “Simulations for Design and Manufacturing: Select Papers from AIMTDR 2016”; Springer, Singapore; 2018; Total pages: 292; 9789811085178.

H. M. Sathisha, A. Dalal; “An Unsteady Model to Study the Effects of Porosity and Temperature in All-Vanadium Redox Flow Battery with Mass Transfer and Ion Diffusion”; Springer; 2018; 2; 379-396; 978-981-10-8392-1.

N. K. Mishra, P. Muthukumar, Snehasish Panigrahy; “A Review on Clean Combustion Within Porous Media”; Springer Nature Singapore Pte Ltd; 2018; 209-224; 978-981-10-7184-3.

P. S. Robi, Sukhomay Pal, and Biswajit Parida; “Recent Trends and Advances in Friction Stir Welding and Friction Stir Processing of Metals”; CRC Press; 2018; 715-751; 9781138099265.

Devarshi Kashyap, Charan Mukundan and S. Kanagaraj; “Manufacturing and characterization of shape memory polymers and composites”; CRC press; 2018; 43-73; 9781498799300.

Kishor Kumar Gajrani, Mamilla Ravi Sankar; “Encyclopedia of Renewable and Sustainable Materials”; Elsevier; 2018.

Achinta Sarkar, Maryom Dabi and Ujjwal K. Saha; “Supplementing the energy need of diesel engines in Indian transport and power sectors”; Springer; 2018; 26; 978-981-10-7508-7.

ENERGY

Pankaj Kalita and Debarshi Baruah; “Investigation of Biomass Gasifier Product Gas Composition and its Characterization” in Coal and Biomass Gasification; Springer, Singapore; 2018; 115-149 (35 pages); 978-981-10-7334-2.

Faculty Awards and Honours

BSBE

Prof V K Dubey was Elected as FRSB (Fellow, Royal Society of Biology, United Kingdom).

Prof. Utpal Bora was selected as the Vice President for the “Association for Promotion of DNA Fingerprinting and other DNA Technologies (ADNAT).

Prof. Pranab Goswami was awarded for his Outstanding Contribution in Reviewing Awarded by the Editors of

Biosensors and Bioelectronics, Elsevier, Amsterdam, The Netherlands.

DESIGN

Dr. Avinash Shende received the Best Citizen of the year 2018 from the International Publishing House, New Delhi.

ELECTRONICS

M. K. Bhuyan, Dept. of EEE received the Best Poster Award at BIOIMAGING 2018 (PORTUGAL) for the poster titled “Dense 3D Reconstruction of Endoscopic Polyp”.

HUMANITIES

Dilwar Hussain received the Overall Best Paper Award to a research paper (with Sarika Kaushal) for the paper titled “Inhibitors of the Information Technology Success: Insights from Qualitative Investigation” at International Conference on Management Practices for the New Digital economy ICMAPRANE 2018 held on 9-10 February 2018.

ENVIRONMENT

Prof. Utpal Bora has been Elected as Vice President of ADNAT on 28 January 2018.

NANOTECHNOLOGY

Prof. P. K. Giri was awarded the Visiting Research Fellowship, 2018 by the University of Birmingham, UK.

Dr. Gayatri Natu, DST-Inspire Faculty was selected as Member, Indian National Chemistry Olympiad (INChO-2018) by the Indian National Chemistry Olympiad.

Visitors From Other Institutes / Universities / Organisations / Invited Lectures

Dr. Aswani K Kancherla, John Hopkins University School of Medicine, USA; “Understanding protein function via structure, dynamics and interactions: Cono-peptides to Non-Ribosomal Peptide Synthetases”; 23 January 2018.

Dr. Sonali Bhattacharjee, Cold Spring Harbor Laboratory, NY, USA; “Investigating the nexus between DNA repair pathways and genomic instability in cancer”; 25 January 2018.

Dr. Jothir Pichaandi, University of Toronto and Fluidigm, Canada; “Nanoparticle- Antibody Conjugates as High Sensitive Reagents for Mass Cytometry”; 14 February 2018.

Prof. K. V. Venkatesh, Dept. of Chemical Engineering, Dept. of Biosciences and Bioengineering, IIT Bombay; “Systems Engineering Perspective of Human Metabolism through a Multiscale Model for Disease Analysis : A Cell to Human Framework”; 9 March 2018.

CHEMICAL

Dr. S. Kanmani; Professor & Director, Centre for Environmental Studies, Anna University; “Invited Talks”; 22 February 2018.

Dr. Jothir Pichaandi ; Fluidigm Canada Inc;” Invited Talks”; 15 February 2018.

DESIGN

Prof. Carlo Vezzoli; Politecnico di Milano, Italy; For conducting Pilot Course 2 under the LeNSin Project and also gave an Institute Lecture; “Course – DD 521 System Design for Sustainability; Institute Lecture – Designing Sustainability for All”, 12 – 16 February.

Prof. A.G Rao; IDC School of Design, IIT Bombay; Masters and Research Students of Department of Design; “Design Research – Trends and Directions”, 28 March 2018.

Mr. Dilipan; Product Designer and Design Consultant; Masters and Research Students of Department of Design; “Product Design in Indian Industry”, 25 March 2018.

Prof. Carlo Vezzoli; Politecnico di Milano, Italy; Institute lecture; “Designing Sustainability for All - Institute lecture”, 12 March 2018.

ELECTRONICS

Prof. Biswa Nath Datta, Northern Illinois University, USA; "Numerical aspects of control systems Regards", 21 February 2018.

Prof. Yuji Iwahori, Chubu University, Japan; "Japanese Education System, Research Collaboration with IITG and Research in Computer Vision", 10 March 2018.

Prof. Carlo Vezzoli; Politecnico di Milano, Italy; "LeNSin pilot course 2 on - Sustainable Product Service System Design", 12-23 Mar 2018.

Prof. Brenda Garcia Parra; UAM Cuajimalpa; For conducting Pilot Course 2 under the LeNSin Project; "Course – DD 521 System Design for Sustainability", 12 – 22 February.

Prof. Alinne Sanchez Paredes Torres; UAM Azcapotzalco; For conducting Pilot Course 2 under the LeNSin Project; "Course – DD 521 System Design for Sustainability", 12 – 22 February.

HUMANITIES

Anwasha Chakrabarti, Doctoral Candidate, Department of Agricultural and Resource Economics, University of Connecticut; Investigating Consumer Preference and Willingness to Pay for Specialty Mushrooms: A Latent Class Approach; 09 January 2018.

Prof. Samir Kumar Das, Department of Political Science, Calcutta University; Democracy at the Margins: India's Northeast; 22 January 2018.

Prof. Sreemati Chakrabarti, Head of the Department and Professor in Chinese Studies at the Department of East Asian Studies at University of Delhi; Paradox of China's Transformation; 05 February 2018.

Joe Athialy, co-founder and Executive Director of Centre for Financial Accountability (CFA), New Delhi; Demystifying Development Finance; 12 February 2018.

Prof. Pranab Mukhopadhyay, Director of the Internal Quality Assurance Cell of Goa University, fellow of SANDEE, and current president of INSEE; Assessing Quality in Higher Education Institutions in India: An alternate framework; 16 February 2018.

Prof. Anupama Roy, Professor, Centre for Political Studies, School of Social Sciences, JNU; Law's Lives, Estrangement, and Archival Spaces; 22 March 2018.

MATHEMATICS

Dr. Sudhir Pujahari, Harish-Chandra Research Institute, Allahabad; "In the neighbourhood of Sato-Tate conjecture"; 4 January 2018.

Prof. Mrinal Kanti Ghosh, Indian Institute of Science, Bangalore; "Maximum Principle and Harnack's Inequality"; 17 January 2018.

Prof. G. P. Raja Sekhar, Indian Institute of Technology, Kharagpur; "The Journey of Lagrange and Applications of Euler-Lagrange Equations in Fluid Mechanics"; 25 January 2018.

Prof. Biswa Nath Datta, Northern Illinois University, USA; "Finite Element Model Updating : A Wonderful Inverse Eigenvalue Problem"; 20 February 2018.

Dr. Satyajit Pramanik, Nordic Institute for Theoretical Physics, Sweden; "Confinement and nonlocal elasticity effects in premelting dynamics"; 22 February 2018.

Prof. Michael Karow, Institute for Mathematics, TU Berlin, "Two Open Problems in Linear Algebra"; 6 March 2018.

Prof. Kalyan B. Sinha, SERB Distinguished Associate, Theoretical Sciences Unit, JNCASR and NMI Distinguished Associate, IISc; "Spectral Approximation for Self-adjoint Operators, by Truncation"; 22 March 2018.

MECHANICAL

Dr. Sumon K Sinha; SinhaTech, USA; "Utilizing flow unsteadiness for maximizing efficiency in real life"; 15 March 2018.

ENERGY

Prof. Akhil Garg; Shantou University, China; Research Collaboration; "SoH Estimation of Li-ion battery"; 12 Jan 2018.

Prof. Xiongbin Peng; "Shantou University, China; Research Collaboration; Thermodynamic management of battery pack used in electric vehicle"; 12 Jan 2018.

Invited Lectures of IIT Guwahati Faculty in India and Abroad

BSBE

Dr. Ajaikumar B. Kunnumakkara; "Role of Solute Carrier Proteins in the Development of Oral Squamous Cell Carcinoma"; Guru Nanak Dev University, Amritsar, India; 22nd March, 2018.

Dr. Ajaikumar B. Kunnumakkara; "Role of Different Isoforms of Akt kinase Oral Squamous Cell Carcinoma"; Gujarat Cancer Research Institute, Ahmedabad, India; 16-17th March, 2018.

Dr. Ajaikumar B. Kunnumakkara; "Role of LCN2 in the Development of Oral Squamous Cell Carcinoma"; Trivandrum Medical College, Kerala, India; 9-10th March, 2018.

Dr. Ajaikumar B. Kunnumakkara; "Fusion genes: Highly Specific Biomarkers for Cancer Diagnosis and Therapy"; Tripura University, Agarthala, India; 27th February 2018.

Dr. Ajaikumar B. Kunnumakkara; Different Isoforms of Akt and its Role in Oral Cancer; Indian Institute of Toxicological Research, Lucknow, India; 21st February 2018.

Dr. Ajaikumar B. Kunnumakkara; Role of NGAL in the Development of Oral Squamous Cell Carcinoma; TBBR, Banaras Hindu University, Varanasi, India; 15th February 2018.

Dr. Ajaikumar B. Kunnumakkara; Role of Different Isoforms of Akt kinase in the Development of Oral Squamous Cell Carcinoma; 7th International Conference on Translational Cancer Research, Chennai, India; 10th February, 2018.

Prof. Rakhi Chaturvedi; "In vitro anther culture and haploid plant production in Camellia species to generate homozygous plants with the possibilities of accumulation of bioactive metabolites"; Indo-Japan Bilateral Symposium, IIT Guwahati; 1 – 4 February 2018.

Prof. Kannan Pakshirajan; "Bioprocessing of biomass gasification wastes for production of biofuels and value added products"; Adhiyamaan College of Engineering, Chennai, Tamil Nadu; 6-7 March 2018.

Prof. Vikash Kumar Dubey; Plenary lecture during Recent Trends in Structural Bioinformatics

and Computer Aided Drug Design" [SBCADD'2018]; Alagappa University, Karaikudi; 21 February 2018.

Prof. Utpal Bora; "Biotechnology for a sustainable future"; Bajali College, Pathshala; 06 March 2018.

Prof. Utpal Bora; "Science and Technology for a sustainable future"; Guwahati University

Model School, Guwahati; 28 February 2018.

Prof. Utpal Bora; "Science and Technology for a sustainable future: Priorities for North East

India"; College of Veterinary Sciences, AAU, Khanapara; 28 February 2018.

Prof. Utpal Bora; "Diversity of insect mitochondrial genomes"; CMERTI, Lahdoigarh, Jorhat; 12-13 March 2018.

Dr. B. Anand; "CRISPR-Cas System: From Genome Defence to Tinkering Genome"; Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram; 9 March 2018.

Dr. Lalit Pandey; "Surface Modification/ Engineering In Biomedical Engineering"; North East Hill University, Shillong; 15-16 March 2018.

Prof. Pranab Goswami; "Biofuel cell"; NIT Raipur; 22 January 2018.

Prof. Pranab Goswami; "Advances in biosensor research"; Department of food engineering and technology, Tezpur University; 19th March 2018.

Prof. S. S. Ghosh; "Emergence of Cancer Nanotheranostics"; Emerging Trends on Drug Design and Development-2018' (ETDDD-2018); IIT(BHU); 18-20 January 2018.

Dr. Pranjal Chandra; "Nanosensing strategies for point-of-care biomedical diagnostics"; Expert Talk: North East Hill University, Shillong; 15-16 March 2018.

Dr. Debasish Das; "Microalgae: Cell Factories for production of Bulk Chemicals and High Value Compounds"; Himalaya Drug Company, Bengaluru; 11 January 2018.

Dr. Debasish Das; “Microalgal Biotechnology and Production of Bulk Chemicals”; String Bio Pvt. Ltd., Bengaluru; 12 January 2018.

CHEMICAL

Dr. Vimal Katiyar; “Biodegradable Polymeric Nanomaterials for commodity, Engineering and Biomedical Applications in Advances in Sustainable Polymer (ASP-17)”; IIT Guwahati; Guwahati, Assam; January 8-11, 2018.

Dr. Vimal Katiyar; “Biodegradable Plastics for Advance Applications, 63rd Annual Technical Session of Assam Science Society: 2018, (ASSET-2018)”; Central Institute of Technology Kokrajhar; Kokrajhar, Assam; March 9-11, 2018.

Dr. Vimal Katiyar; “Biodegradable Plastics for Commodity, Engineering and Biomedical Applications; NRC-2017 & ICEP 2018”; Guwahati; February 23-25, 2018.

Dr. Vimal Katiyar; “Biobased and Biodegradable plastics for stringent Food Packaging Applications during Second Indo-Japan Bilateral Symposium on Future Perspective of Bioresource Utilization in North East India”; IIT Guwahati; IIT Guwahati; February 1-4, 2018.

Dr. Vimal Katiyar; “Biodegradable Polymer Based Research & Development Activities at IIT Guwahati during 8th National Science Film Festival of India 2018”; IIT Guwahati; Guwahati; 20-24 February 2018.

Dr. Vimal Katiyar; “Compostable Plastics for Commodity, Engineering and Biomedical Applications, Second International Conference on waste Management (Recycle 2018)”; IIT Guwahati; IIT Guwahati; February 22-24, 2018.

DESIGN

Dr. Sougata Karmakar; “Ergonomics and Military Environment; Defence Institute of Physiology & Allied Sciences (DIPAS)”; DRDO, Delhi-54; Timarpur, Delhi-54; 9 March 2018.

Sharmistha Banerjee; “Sustainable Product-Service System Design; Reflux 2018”; IIT Guwahati; Guwahati; 18 Mar 2018.

Swati Pal; “Lectures on Environmental Ergonomics, e.g., Occupation health and safety and effect of dusts, heat and light, Design of Personal Protective Equipment.

Conduction of project (Design of Hand tool) on Applied Ergonomics in Product Design”; IIT Bombay; Mumbai; 5- 16 Feb 2018.

ELECTRONICS

Sonali Chouhan; “Networked Embedded Systems for Robotics”, IIT Delhi; New Delhi; 23 – 28 June, 2018.

Shaik Rafi Ahamed; “Efficient VLSI Architectures for Signal Processing Algorithms”, IEEE International conference on Signal Processing and Communication Engineering Systems (SPACES – 2018); Vaddeswaram, Andhra Pradesh; 5 Jan 2018.

Harshal B. Nemade; “(Colloquium) Surface acoustic wave devices and their applications”, Indira Gandhi Centre for Atomic Research (IGCAR); Kalpakkam, Tamilnadu; 25 Jan 2018.

Praveen Tripathy; “Wide Area Monitoring and its Application to Power Systems”, Tezpur University in the Department of Electrical Engineering; Tezpur; 29 Jan 2018.

M. K. Bhuyan; “Mathematical Approaches for Electrical Engg.”, Tezpur University; Tezpur, Assam; 30-31 Jan 2018.

Shabari Nath; “Power electronics for renewable energy systems”, Tezpur University; Tezpur, Assam; 1 Feb 2018.

Chitrallekha Mahanta; “Designing Robust Controllers for Uncertain Systems”, Tezpur University; Tezpur, Assam; 2 Feb 2018.

Kalpna Dhaka; “Device-to-Device Communication”, OWT 2018, MNIT Jaipur; Jaipur; 2 Feb 2018.

Kalpna Dhaka; “Heterogeneous Cellular Networks”, E & ICT FDP, MNIT Jaipur; Jaipur; 9 -14 Feb 2018.

M. K. Bhuyan; “Computer Vision and Its Applications”, Tezpur University; Tezpur, Assam; 12 Feb 2018.

Sonali Chouhan; “Wireless Sensor Networks”, SGSITS, Indore; Indore; 3 March 2018.

Prabin Kr. Bora; “Digital Image Forensics”, Tezpur University ; Tezpur; 15 Feb 2018.

Prabin Kr. Bora; “Linear Algebra and Probability for Signal Processing”, Jorhat Engineering College; Jorhat; 26 March 2018.

M. K. Bhuyan; “Signal Processing, Image Processing and Computer Vision, and Applications”, Jorhat Engineering College, Jorhat, Assam; Jorhat; 27 March 2018.

M. K. Bhuyan; “Deep Learning and Machine Learning”, Gauhati University; Guwahati; 19-20 March 2018.

Gaurav Trivedi; “Introduction to SPICE”, TEQIP Workshop at MTU, Imphal, Manipur; Imphal, Manipur; 22 March 2018.

Gaurav Trivedi; “Algorithms to VLSI”, NIT Arunachal Pradesh; Yupia, Arunachal Pradesh; 26 – 31 March 2018.

HUMANITIES

Bodhisattva Sengupta; “Probability Theory and Its Constituents”; Department of HSS, IIT Guwahati; 12 March 2018.

Sambit Mallick; “Civil Society in Changing India”; Digboi Mahila Mahavidyalaya, Digboi; 09-10 January 2018.

Sambit Mallick; “Science, Technology and Society”; University of Science and Technology, Meghalaya; 21 March 2018.

Saundarjya Borbora; “Poverty, Economic Growth and Human Development: Chain Relationship”; Gauhati University, Guwahati; 03 February 2018.

Saundarjya Borbora; “Governance and Institutional Reforms in Higher Education in India”; Directorate of Higher and Technical Education, Itanagar, Arunachal Pradesh; 06 February 2018.

Mrinal Kanti Dutta; “Regional Disparity and Regional Economic Development”; Dept. of Economics, Dibrugarh University; 19 March 2018.

Mrinal Kanti Dutta; “Economic Performance of the North-Eastern Region in the Post-Liberalization Period”; HRDC, Gauhati University; 03 February 2018.

Mrinal Kanti Dutta; “Social Dynamics of Poverty: Issues of Land Reforms and Livelihood”; HRDC, Gauhati University; 03 February 2018.

MECHANICAL

Amaresh Dalal; “Numerical Simulation of Droplet Hydrodynamics and Boiling”; NIT Arunachal Pradesh; 9 March 2018.

U. S. Dixit; “Manufacturing, Friction”; Institute of Engineering and Technology, Dibrugarh University; 27 March 2018.

Sukhomay Pal; “Sensor based weld defects detection system in friction stir welding”; 1st International

Conference on Emerging Trends on Engineering and Science (ETES:2018), Asansol, West Bengal; 24 March 2018.

S. Kanagaraj; “Synthesis and characterization of ceria based solid solution as a radical scavenger in cochlear implants”; Madras University; 16 March 2018.

Ujjwal K. Saha; “Understanding Aerospace Engineering (6 Lectures)”; Dibrugarh University; 26 March 2018.

Ujjwal K. Saha; “Aeronautics for Beginners (One-day Workshop)”; IIIT Bhagalpur, Bihar; 13 April 2018.

PHYSICS

Prof. Pratima Agarwal; “Advances in Solar cells: Materials and Technology”; NIT Silchar; 15 March 2018.

ENERGY

Pankaj Kalita; “Investigation of biomass gasifier product gas composition and its characterization”; Assam Science and Technology University; Jalukbari, Guwahati; 16 March 2018.

ENVIRONMENT

Prof. Utpal Bora; “Technological Intervention in Microbial Resource” (TIMR2018); Tezpur University; 04-05 February 2018.

Prof. Utpal Bora; “Science and Technology for Sustainable Future”; GU Model School, Jalukbari, Guwahati; 28 February 2018.

Prof. Utpal Bora; “Science and Technology for Sustainable Future: Priorities for North East India”; College of Veterinary Science, Khanapara, Guwahati; 28 February 2018.

Prof. Utpal Bora; “Diversity of Mitochondrial Genomics”; CMERTI, Lahdoigarh, Jorhat; 12 March 2018.

NANOTECHNOLOGY

Prof. S. S. Ghosh; “Emergence of Cancer Nanotheranostics”; Emerging Trends on Drug Design and Development-2018’ (ETDDD-2018), IIT(BHU); 18-20 January 2018.

Dr. D. Bandyopadhyay; “Microfluidics for Sensing, Reaction Engineering, Energy Harvesting, and Point-of-Care Testing”; IIT Roorkee; January 2018.



In order to facilitate a collaborative agreement with the Indian Navy, IIT Guwahati has signed an MoU with the Indian Naval Academy Ezhimala for academic collaboration. Prof. Gautam Biswas, Director, IIT Guwahati is seen here with Commodore Ravi Shankar, Registrar, Indian Naval Academy Ezhimala after the formal signing of the MoU between the two institutions. The scope of agreement includes academic and research collaboration in the areas of mutual interest; exchange of students, faculty and cooperative seminars, workshops and other academic meetings.

The Indo-Taiwan bilateral meet being held on the sidelines of the ASP Conference resulted in another major collaborative outreach for IIT Guwahati. Taiwan is known for its technology and product development and IIT Guwahati will now partner Ming Chi University of Technology, Taiwan to explore joint research collaborations. Ming Chi University of Technology, Taiwan is renowned for its industry connect and the present MoU will lay the foundation towards a robust collaboration between the two institutions.



A delegation from Shantou University, China visited IIT Guwahati, as part of the MoU for Academic and Research Collaboration which already exists between the two institutes and the visit was part of the collaborative effort. The delegation met with faculty members of various departments to explore avenues for joint projects and also had an interactive session with the students.



A meeting under the Chairpersonship of Hon'ble Minister of State for Human Resource Development, and Water Resources, River Development and Ganga Rejuvenation, Shri Satya Pal Singh was held to discuss the progress of Institutes of Higher learning in the North Eastern Region was held on 22/01/2018 in the Conference Room, Guest House, IIT Guwahati. Heads from 27 Institutions from the North East attended the meeting.



IIT Guwahati's attempt to actively engage with top universities in UK is having a visible effect. Following interactions & plans for collaborations with the University of Bath and York University, a delegation from Cardiff University led by the Pro-Vice Chancellor, Prof. Nora de Leeuw called on the Director of IIT Guwahati, Prof. Gautam Biswas. The delegation thereafter visited the different labs of the Department of Chemistry and interacted with the faculty members for enhanced research engagement through joint workshops, faculty visits, mentorship programmes, etc.

Republic Day Celebration 2018



The 68th Republic Day of India was celebrated on 26 January 2018 in the Institute campus. Prof. Gautam Biswas, Director of the Institute, hoisted the tricolour and addressed the gathering. This was followed by colourful cultural programmes presented by the students of the Institute, programmes presented by the students of the Institute, Akshara School and children of the campus.



Alcheringa

The theme for this 22nd edition of Alcheringa was 'Echoes of Innocence'. The idea of Echoes of Innocence is to take everyone to one of their favourite stages of life, Childhood. Echoes of Innocence is a small insight to each of ours' past, a short trip through our childhood; where there are no worries, we all feel safe, full of curiosity, filled with innocence and the feeling of absolute bliss.

This edition, Alcheringa hosted an exhibition of the North-East to showcase the cultures of the eight states of the North-East through performances of traditional dance and music. There were also be exhibitions of the handicrafts and hand-looms of various states during the duration of the festival. The North East Expo Stage showcased performances of AphiloKuwo – A dance form from Nagaland, LebangBhoomani Dance – A harvest dance form from Tripura and the Wari, Octaves Foundation presenting some Manipuri Folk Tales.

The 22nd edition of Alcheringa hosting four different professional nights of four entirely different genres. Indian classical music maestros and brothers Ganesh – Kumaresh as pre-headliners and the Legendary Padma Shree Awardee, Ustaaad Shahid Parvez Khan, pioneer of 'Hindustani Classical Music' performed on the Opening Night of Saaz- The Classical Night on the 1 February. Juggernaut was headlined by the rising Alternative Rock

band from Chennai, The F16's on 2 February. Crescendo featured the dynamic Bollywood duo Vishal – Shekhar on 3 February. Blitzkrieg, the surprise night with an opening act from the Portuguese House Producer Diego Miranda and one of the most entertaining live acts ever by the Australian House Producers Mashd N Kucherto end the show this edition.

Apart from this as a part of the world carnival, performers from three different countries, Corvo Nuno Flores, Portuguese Violinist, Limo rBallas, Singer from Israel and Christian, Brock Guitarist from Denmark graced Alcheringa 2018. Rock-o-phonix, Haute Couture, Mr. & Mrs. Alcheringa, Raga High, Unplugged, Electric Heels, Step Up, Theatrix, Live Sketching, Custom Brush, and many others events attracted participation in huge numbers.

Other interesting attractions in this edition of Alcheringa include the IITG Model United Nations – that emulates actual councils of the United Nations. For the first time this year a committee simulating the Lok Sabha. The North East Social Entrepreneurial Summit provided a platform for social entrepreneurs to share and discuss ideas that affect the North-Eastern states, and Parliamentary Debate – where participants enacted as MPs and debated on respective concerns.



International symposium on biodiversity and biobanking

BIOCONVERSE 2018

International Symposium on Biodiversity and Biobanking (BIODIVERSE) 2018 was organized by Indian Institute of Technology Guwahati jointly with Association for DNA finger printing and Associated DNA Technology (ADNAT) from January 27th to 29th, 2018 at IIT Guwahati. BIODIVERSE 2018 was attended by around 450 participants with keynote lectures under twelve different themes and twenty-one technical sessions chaired by experts around the globe in areas of biodiversity and biobanking. Some of the distinguished speakers were George van Driem, University of Bern; Toru Shimada, University of Tokyo; Olivier Hanotte, The University of Nottingham etc. The symposium also organized a brainstorming session on relevant areas and cultural evenings which showcased the famous Badongdoppa theatre group. A photography and short documentary film competition, Nature in Pixel, was also held as a part of BIODIVERSE 2018.



BIODIVERSE 2018



Indian Institute of Technology Guwahati
Guwahati – 781039, India

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