

## CSIR-North East Institute of Science & Technology, Jorhat

*Connecting Science & Technology for a Brighter Tomorrow*

### CSIR-NEIST organized Innovators cum Entrepreneurs Meet



Padma Shri Prof Anil K Gupta, lighting the inaugural lamp of the Meet joined by Dr G Narahari Sastry, Director, CSIR-NEIST and other dignitaries.

CSIR-NEIST organized 'Innovators cum Entrepreneurs Meet' during 8-10 May 2019 at its premise. The main objective of the programme was to understand the needs and aspirations of the innovators & entrepreneurs and encourage young people towards entrepreneurship. The meet was also aimed to initiate business start-ups for potential entrepreneurs & innovators and to create a congenial atmosphere for innovators and entrepreneurs within the framework of the ongoing 'Science and Technological Intervention in NER (STINER)' programme. The 3-day meet was inaugurated by Padma Shri Prof Anil K Gupta, Visiting Faculty, IIM-Ahmedabad and Founder, Honey Bee Network, SRISTI, GIAN & National Innovation Foundation who graced the inaugural session as Chief Guest. Prof Gupta talked about the importance of affordable healthcare and mentioned how institutions like CSIR-NEIST can implement a decentralized system to dispense products based on its herbal technologies through local entrepreneurs. He urged the scientists to walk through villages and interact with grass root innovators, farmers and the people which will help in exploring local talents. He also encouraged the entrepreneurs to become a convergent point and take up multi-franchising for promoting products of other entrepreneurs and innovators for a win-win situation. In his welcome address, Dr G Narahari Sastry said that CSIR-NEIST

is the S&T Face in North East Region for CSIR and the Institute has taken the responsibility to become the major hub for promoting & nurturing entrepreneurship in the region. Dr Sastry strongly emphasized on knowledge for empowerment and mentioned the importance to empower youth, empower women and empower the people by helping them to acquire various skills and knowledge that provides them avenues to become self reliant/sufficient and thereby improve their standard of living with sustainability. The three-day event covered several technical sessions wherein various theme discussions on innovation, entrepreneurship development and start-up creation in the NE region had taken place. Eminent personalities like Padma Bhushan Dr T Ramasami, Former Secretary, DST, Govt. of India; Padma Shri Prof. V Prakash, Former DG CSIR & Former Director CSIR-CFTRI; Padma Shri Dr Anil K Gupta, Visiting Faculty, IIMA & IITB; Padma Shri Dr. Uddhab Bharali, Renowned Innovator; Dr. Anil Koul, Director, CSIR-IMTECH; Dr Rakesh K Mishra, CSIR-CCMB; Dr. Madhu Dikshit, National Chair, THSTI; Prof. Vibha Tandon, Jawaharlal Nehru University; Dr A Chakraborty, Chief Scientist & Head, DGTC, CSIR; Dr VM Tiwari, Director, CSIR-NGRI; Dr. Sunil R Parekh, Chief-Strategy and Corporate Affairs, Zydus Cadila, Ahmedabad; Dr. Viswajanani Sattigerri, Scientist H, TKDL Unit; Dr. N. Krishnamurti, Former Head, Organic Coating and polymer, CSIR-IICT, Consultant, Pidilite, J&J and RCI; Dr. Hemchandra Goswami, Innovator Majuli Mask Craft; Dr. H. Purushotham, CMD, NRDC and Prof. Tapas K. Kundu, Director, CSIR-CDRI delivered technical lectures. The event also covered two special sessions with lectures from some innovators & entrepreneurs of the region like Amity Fibre & Allied Products, Dimapur; Meghali Food, Assam; Kamen Industries, Majuli, etc. and micro-financing institutions like NEDFi. One of the highlights of the programme was "Food for Thought" where 9 themes viz., Entrepreneurship in Educational Institutes, Start-ups—Prospects and Con-strains, Traditional Knowledge based Entrepreneurship, Women Entrepreneurship, Waste to Wealth, Nature Inspire Healthcare, Knowledge for Empowerment, Agri-

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Padma Shri Prof V Prakash delivering special lecture on, 'Challenges in Food Value Chain in Agri Food Processing in North east- Solutions through Sustainable Microentrepreneurship from Farm to Fork'.

Entrepreneurship (Organic, GM & non-GM crops) and Data Science for Sustainable Development were thoroughly discussed on 8 May. The programme of 10 May was sponsored by NRDC, New Delhi which was concluded with an inspiring lecture delivered by Padma Shri Prof V Prakash about challenges in food value chain in agri food processing in NE and solutions through sustainable micro-entrepreneurship from farm to folk. A total of 127 entrepreneurs and innovators from all the states of North East had attended the programme.

**Glimpses of Food For Thought Programme held under the Meet**



**CSIR-NEIST celebrated National Technology Day 2019**



Padma Bhushan Dr T Ramasami delivering the National Technology Day Lecture on the topic, 'Role of Non Strategic R&D: In shaping Future of India' at CSIR-NEIST.

CSIR-NEIST celebrated National Technology Day on 11 May 2019 with a special programme at Dr J N Baruah Auditorium. Padma Bhushan Dr T Ramasami, Former Secretary, DST, Govt. of India graced the occasion as Chief Guest and delivered Technology Day Lecture on the topic, 'Role of Non Strategic R&D: In shaping Future of India'. Dr Ramasami reiterated the significance of Technology Day in India and touched upon many important aspects of how the Non Strategic R&D sector can play a vital role in bringing Sustainable Developmental Goals (SDGs) while emphasizing that non strategic R&D is the need of today's time. He said that CSIR is the custodian of non strategic R&D in India and must strive for collaborative excellence along with competitive excellence. Dr Ramasami elaborated about the evolutionary paths of R&D from early human history, post industrial revolution to 20<sup>th</sup> century ground truth to 21<sup>st</sup> century realities. From the 1<sup>st</sup> Industrial Revolution to the current 4<sup>th</sup> Industrial Revolution, he said that 4<sup>th</sup> Industrial Revolution is about non-strategic sector and stressed that the technologies of the 4<sup>th</sup> Industrial revolution must ensure that they are equitable for the society, bearable for the planet and viable for

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Inauguration of CSIR-NEIST Rural Women Technology Park by Dr T Ramasami on 10 May 2019 in presence of Dr G Narahari Sastry, Director, CSIR-NEIST and other staff members.

the economy. Dr Ramasami also highlighted the future demands @ 2030 such as delivery of millennium SGDs for zero hunger, employment creation matching population growth rate and ability to create innovation for 2/3 of global population. As a person who has immense love and concern for the NE region, Dr Ramasami further spoke about the challenges and opportunities for the non strategic R&D in NER setting. He said that more thrust needs to be given for reaching the R&D solutions to the unreached and development of new technologies for the underserved or un-served areas. Dr G Narahari Sastry, Director, CSIR-NEIST in his remarks also mentioned about the significance of the day. He said that we need to take a path to re-define ourselves and work towards strengthening of MSME sector in the region through S&T means. He also strongly emphasized that the Institute has an endeavour to become the major S&T hub of the region with an aim to create knowledge for empowerment. The programme concluded with vote of thanks by Er S C Kalita, Chief Scientist & Head-Engineering Sciences & Technology Division, CSIR-NEIST. It is worthwhile mentioning that Dr Ramasami inaugurated 'Rural Women Technology Park' on 10 May established at CSIR-NEIST with the support of DST, Govt. of India wherein technologies suitable for rural women entrepreneurs will be disseminated for providing livelihood and source of income.

## CSIR-NEIST organized Conference on Recent Advances in Bioinformatics



Lighting of inaugural lamp by Prof T P Singh (left) and Dr G Narahari Sastry, Director, CSIR-NEIST (right) joined by other dignitaries.

A four-day Conference on 'Recent Advances in Bioinformatics' was organized by CSIR-NEIST during 23-26 May 2019. Prof T P Singh, INSA Senior Scientist, AIIMS, New Delhi graced the inaugural session as Chief Guest and delivered a Keynote Lecture on the topic, 'Structure and Function Studies of Innate Immunity Proteins and their applications as Protein Anti-biotics'. Prof T P Singh explained the mechanism & role of innate immune system in fighting human pathogens and the developments that have taken place in the world from Pre-Antibiotics era. He highlighted the contributions of scientists like Gopinath Kartha and G N Ramachandran in structural protein studies which he said have played key role in the field of protein structure research. Prof Singh said that bioinformatics is very much relevant to the present 21<sup>st</sup> century and this technique should be used in exploiting the huge database available for drug discovery, therapeutic protein research and understanding many biological phenomena. He also mentioned about Protein Data Bank and the huge contribution of India in the repository. Dr G Narahari Sastry, Director, CSIR-NEIST in his presidential address emphasized the importance of Data Science, Informatics and related tools in basic and applied research for better computation, analysis

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Prof T P Singh inaugurating the "Passion" and "Excellence" wings of Kids' World of Science in presence of Dr G Narahari Sastry, Director, CSIR-NEIST; dignitaries and CSIR-NEIST staff members.

and interpretation. CSIR-NEIST will lead the integration of Bioinformatics with Data Science in several interdisciplinary activities, he said. He informed that CSIR-NEIST will be taking a lead role in the region for using these tools to harness knowledge which have huge potential in Drug Discovery, Healthcare, Agriculture, Oil, etc. He expressed hope that the conference will be a learning platform for the participants to get deeper idea on the use of these tools. The four-day Conference was planned to cover Lecture sessions and Hands-on sessions by various experts from Academia, Corporate and Research Organizations like Dr G Madhavi Sastry, Schrodinger, LLC; Dr V Subramanian, Chief Scientist, CSIR-CLRI, Chennai; Dr Shandar Ahmad, *Professor and Dean*, School of Computational and Integrative Sciences & *Chief Coordinator*, Communications and Information Services, JNU, New Delhi; Dr S Ramachandran, Sr Principal Scientist, CSIR-IGIB, New Delhi; Dr Sucheta Tipathy, Pr Scientist, CSIR – IICB, Kolkata; Dr Anupam Nath Jha, Asst. Professor, Dept. of Molecular Biology & Biotechnology, Tezpur University; Dr U C Jaleel, Open Source Pharma Foundation, Bangalore; Dr. Vinod Scaria, Sr Scientist, CSIR - IGIB, New Delhi; Dr Amit Kumar Yadav, Scientist, THISTI, Faridabad; Dr M K Modi, Professor, Dept. of Agricultural Biotechnology, AAU, Jorhat and Dr R Parthasarathi,

Scientist Fellow, CSIR-IITR, Lucknow. The workshop was attended by the scientists and researchers of CSIR-NEIST. It is worthwhile to mention that Prof T P Singh also inaugurated the "Passion" and "Excellence" wings of Kids' World of Science at CSIR-NEIST on 23 May.

### Glimpses of the Conference held



### Swachhta Pakhwada observed at CSIR-NEIST

Under Swachh Bharat Mission of the Govt. of India launched in the year 2016, CSIR-NEIST observed Swachhta Pakhwada at its premise during 1-15 May 2019 with an aim to bring collective focus and participation of all in raising awareness on the importance of Swachhta. A pledge taking ceremony was held on 2 May 2019 by the staff and students led by Er S C Kalita, Scientist-in-charge, CSIR-NEIST at Dr J N Baruah auditorium. The two-week long programme included diverse activities such as Swachhta awareness campaigns in and around office premises, Promotion of Swachhta message through digital display boards, banners, posters, hoardings, etc., Distribution of brooms and dustbins, Tree plantation drive, Cleaning drive in residential colonies & hostels and Competitions like Quiz and Slogan wherein the staff & students ac-

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tively participated. In his address at the concluding ceremony on 15 May 2019, Dr G Narahari Sastry, Director, CSIR-NEIST encouraged all to take responsibility in raising awareness on the importance of cleanliness and support the movement by setting examples. He called upon everyone to keep the campus and surroundings clean and see that it becomes the most desirable campus in terms of cleanliness and swachhta. He appreciated everyone for taking part in all the activities held under the programme and further appealed that the cause does not start or end with a certain date but needs to be taken up as a continuous process. Earlier, Mr J L Khongsai, Administrative Officer, CSIR-NEIST summarized about the drive and the activities held at the Institute during 1-15 May.

**Glimpses of Swachhta Pakhwada held at CSIR-NEIST**



**JIGYASA programme conducted at CSIR-NEIST Branch Lab, Imphal**



Inauguration session of the programme.

Student-Scientist interactive programme under JIGYASA was organized by CSIR-NEIST branch lab, Imphal on 04 May 2019 at its premise. 45 students and 3 teachers of the Kendriya Vidyalaya, Leimakhong, Manipur visited the branch lab and attended the programme. Several products/processes/technologies developed by CSIR-NEIST and facilities including Essential oil distillation plant, Banana fibre extraction, Vermicomposting were demonstrated and explained under the programme. Study of rich biodiversity focusing medicinally important plants and aromatic plants in the experimental field were also conducted.



Dr H B Singh-Scientist-in-charge, Branch Lab, Imphal demonstrating the different medicinal & aromatic plants maintained in the experimental field of branch lab.

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## Papers published

### In International Peer Reviewed Journals

- Das T, Saikia B K, Dekaboruah H P, Bordoloi M J, Neog Dipankar, Bora J J, Lahkar J, Bardwi N, Roy S, Ramaiah D: Blue-fluorescent and biocompatible carbon dots derived from abundant low quality coals, *Journal of Photochemistry Photobiology, B: Biology*, 2019, 195 p: 1-11
- Gogoi G, Hazarika S: Ionic liquid-mediated aqueous two-phase system to enhance the partitioning of lignin, *The Canadian Journal of Chemical Engineering*, 2019, 9999 p: 1-9
- Lal M, Dutta S, Munda S, Pandey S K: Identification and Registration of a High Essential Oil Yielding Variety (Jor Lab L-14) of Lemongrass (*Cymbopogon flexuosus* L.) through Mutation Breeding Technique, *Journal of Essential Oil-Bearing Plants*, 2019, 21(6), p: 1604-1611
- Begum T, Pandey S K, Borah A, Paw M, Lal M: Essential Oil Composition of Different Accessions of Ginger Collected from Northeast Region of India, *Journal of Essential Oil-Bearing Plants*, 2019, 21(6), p: 1475-1486
- Das P P, Huda Muhsina K, Saikia P J, Baruah S D: Study of the formation of biodegradable polycaprolactone particles using solvent evaporation method, *Journal of Macromolecular Science, Part A: Pure and Applied Chemistry*, 2019, 56(1), p: 69-75
- Munda S, Dutta S, Pandey S K, Sarma N, Lal M: Antimicrobial Activity of Essential Oils of Medicinal and Aromatic Plants of the North East India: A Biodiversity Hot Spot, *Journal of Essential Oil-Bearing Plants*, 2019, 22(1), p: 105-119
- Sarmah S, Saikia J, Phukan A, Goswamee R L: Adsorption of As(V) from Water over a Hydroxyl-Alumina Modified Paddy Husk Ash Surface and Its Sludge Immobilization, *Water, Air & Soil Pollution*, 2019, 230(2), p: 1-14
- Hazarika H, Neog K, Sharma A, Das B, Gogoi P: Three-Component Coupling Reactions of Aryne, DMSO, and Activated Alkyne: Stereoselective Synthesis of 2-[(o-Methylthio)aryloxy]-Substituted Dialkyl Maleates, *Journal of Organic Chemistry*, 2019, 84(9), p: 5846-5854
- Borthakur S, Baruah S, Sarma B, Gogoi S: Pd(II)-Catalyzed Synthesis of Alkylidene Phthalides via a Decarbonylative Annulation Reaction, *Organic Letters*, 2019, 21(8), p: 2768-2771
- Baig M I, Ingole P G, Jeon J D, Hong S U K, Choi W K, Lee H K: Water vapor transport properties of interfacially polymerized thin film nanocomposite membranes modified with graphene oxide and GO-TiO<sub>2</sub> nanofillers, *Chemical Engineering Journal*, 2019, 373 p: 1190-1202. **Highest Impact factor Paper (IF-6.735)**
- Islam N, Dihingia A, Manna P, Das T, Kalita J, Dekaboruah H P, Saikia B K: Environmental and toxicological assessment of nanodiamond-like materials derived from carbonaceous aerosols, *Science of the Total Environment*, 2019, 679 p: 209-220
- Sri S M, Polu P R, Deori S: numerical analysis of 3-D sandwich walls under blast loading, *International Journal of Recent Technology and Engineering (IJRTE)*, 2019, 7(6C2), p: 799-803

- Saikia S, Baruah S, Chopra S, Gogoi B, Singh U K, Bharali B: An appraisal of crustal structure of the Indo-Burmese subduction region, *Journal of Geodynamics*, 2019, 127 p: 16-30
- Dutta N Baruah, Sharma S, Chetry R L, Baisya G: A Green Protocol for the Synthesis of  $\alpha$ -Diazo- $\beta$ -hydroxyesters and One-Pot Conversion to  $\beta$ -Keto-Esters and Imidazo[1,2-a]pyridine-3-carboxylates, *Chemistry Select*, 2019, 4(19), p: 5817-5822
- Saikia J, Sarmah S, Bora J J, Das B, Goswami R L: Preparation and characterization of low cost flat ceramic membranes from easily available potters' clay for dye separation, *Bulletin of Materials Science*, 2019, 42 (3), p: 1-13

### Book chapter

- Raj J Leon: Waste Management Banks, In: "Waste Management Treatment Technologies and Methods", Publisher: Mahatma Gandhi National Council for Rural Education, Hyderabad, India; (First Edition).

### NEIST Science Forum Talk held

- **Speaker:** Dr Sanjib Gogoi, Sr Scientist, CSTD  
**Topic:** Ruthenium-catalyzed C-H activation and annulations reactions for the synthesis of important heterocycles.  
**Date:** 05 April 2019
- **Speaker:** Dr Santanu Baruah, Scientist, GSTD  
**Topic:** Seismology, a short overview.  
**Date:** 17 May 2019

- **Speaker:** Dr Manash R Das, Sr Scientist, MSTD

**Topic:** 2D nanocomposite materials with enzyme-like characteristics: Next generation artificial enzyme.

**Date:** 24 May 2019

- **Speaker:** Mr Abhishek Dasgupta, DSIR PRISM Innovator, BSTD

**Topic:** The art of entrepreneurship- the need of the hour.

**Date:** 31 May 2019

### Farewell

The following members of the staff have retired from Council's service on superannuation from CSIR-NEIST during April-May 2019.

1. Mr Rameswar Saikia, Sr Technician (2)
2. Mr Dineswar Saikia, Lab Assistant