



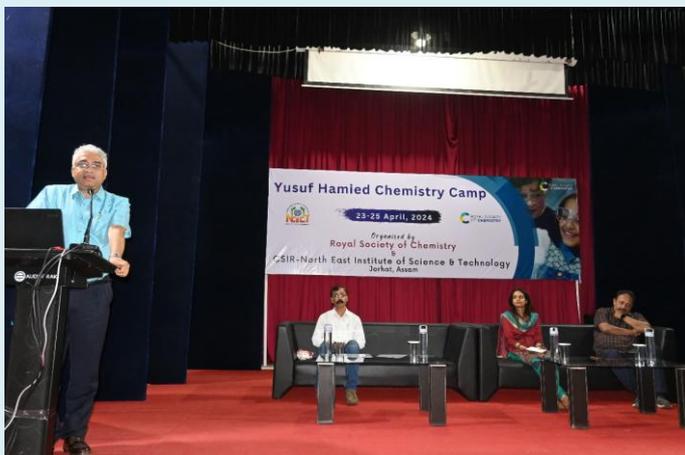
सीएसआईआर-उत्तर पूर्व विज्ञान तथा प्रौद्योगिकी संस्थान, जोरहाट
CSIR-North East Institute of Science and Technology, Jorhat



INFOWATCH

An In-house Monthly Communication (April, 2024)

CSIR-NEIST organized Yusuf Hamied Chemistry Camp for School Students



Dr Virendra M Tiwari, Director, CSIR-NEIST addressing the students during inaugural session.



Student participants of Yusuf Hamied Chemistry Camp along with Dr Virendra M Tiwari, Director, CSIR-NEIST and other officials.

CSIR-NEIST along with Royal Chemistry India Foundation (RCIF), India organized the Yusuf Hamied Residential Chemistry Camp for class IX school students under Dr Yusuf Hamied's Inspirational Science Programme at CSIR-NEIST from 23-25 April, 2024. A total of 76 students of class IX from Government and Govt. aided schools from in and around Jorhat participated in this 3-day residential camp. The 3-day residential camp kicked off with an inaugural session on 23 April, 2024. Dr Jatin Kalita, Sr Principal Scientist & Coordinator of the programme welcomed the participants and spoke about CSIR-NEIST and its various ongoing research activities. Ms. Melissa Mendoza,

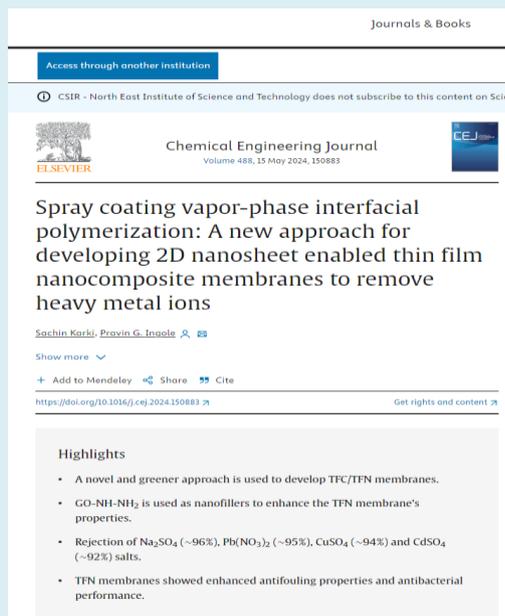
Programme Executive, Royal Society of Chemistry, Bangaluru briefed about the programme and this is a unique programme designed for students to inspire them towards the exciting world of science particularly in the field of chemistry. Dr Virendra M Tiwari, Director, CSIR-NEIST in his inaugural address emphasized that learning in vernacular language is always better and further informed that the programme will certainly help the students in demystifying science to develop both awareness and interest in science subjects. He also informed that besides the chemistry camp, CSIR-NEIST is regularly organizing student-scientist connect programme and other science motivational programme for students. Dr Mantu Bhuyan, Sr Principal Scientist in his address encouraged the students to inculcate the habit of book reading. The 3-day camp covered various activities such as scientific lectures, hands-on practical experiments and face-to-face interaction with scientists.



Above: Glimpses of students taking part in hands-on scientific experiments under the camp.

CSIR-NEIST's research delivers new approach for development of TFC/TFN membranes with enhanced properties

A new approach for developing 2D nanosheet enabled thin film nanocomposite membranes to remove heavy metal ions has been demonstrated in the recent work led by CSIR-NEIST team. The method essentially involved spray coating vapor phase interfacial polymerization (VPIP) which is unique and has been done for the first time in the history of membrane science. This innovative approach significantly reduces reagent consumption and eliminates the need for organic solvent (n-hexane). The membranes demonstrated excellent performance with ~96% rejection of CdSO_4 , ~95% rejection of $\text{Pb}(\text{NO}_3)_2$, ~94% rejection of CuSO_4 and ~92% rejection of CdSO_4 salt with highest pure water flux. Furthermore, the prepared membranes exhibited enhanced anti-bacterial performance after incorporating these nanosheets. This work has been published recently in Chemical Engineering Journal with Impact Factor 15.1.



Societal Activities

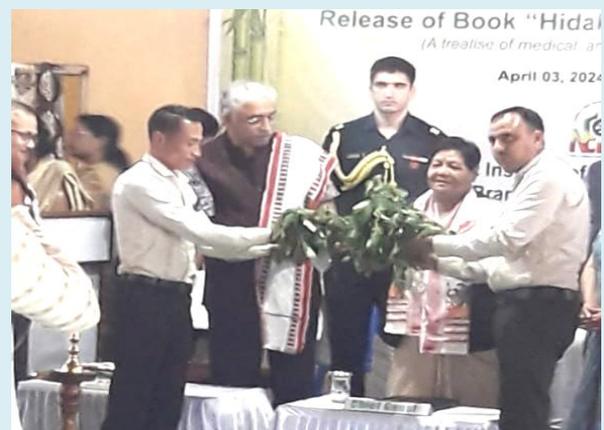
Activities under CSIR Aroma and Floriculture Mission

CSIR-NEIST branch lab, Imphal organized a meet with farmers and agri-entrepreneurs on 3 April, 2024 at its premise. The main objective of the programme was to facilitate the distribution of Honey-bee boxes and quality planting materials of aromatic & medicinal plants to the farmers and entrepreneurs. Miss Anusuiya Uikey, Hon'ble Governor of Manipur graced the

occasion as Chief Guest and distributed the Honey-bee boxes and planting materials. A book entitled, "Hidak Kanaraba Pambish (A treatise of medicinal, aromatic and economic plants)" written by Dr H B Singh, Chief Scientist & Scientist-in-charge, branch lab was also released on the occasion. Dr Virendra M Tiwari, Director, CSIR-NEIST in his address briefed about Aroma and Floriculture Mission Programmes of CSIR and how it has been impacting the lives of farmers. The event was attended by Dr Sridevi Annapurna Singh, Director, CSIR-CFTRI and other officials from branch lab and CSIR-NEIST besides local farmers and entrepreneurs.



Miss Anusuiya Uikey, Hon'ble Governor of Manipur releasing the book on "Hidak Kanaraba Pambish" in presence of Director, CSIR-NEIST, Dr Virendra M Tiwari, Director, CSIR-CFTRI, Dr Sridevi Annapurna Singh and other dignitaries.



Miss Anusuiya Uikey, Hon'ble Governor of Manipur releasing distributing quality planting materials to the farmers and entrepreneurs.

CSIR-NEIST organized awareness cum training programme



Participants attending the training programme at Amguri.

Under CSIR Floriculture Mission, CSIR-NEIST organized two awareness cum training programme on “Orchid cultivation and propagation” at Amguri and Dikhowmukh, Sivasagar district on 9 April, 2024. About 5000 orchid saplings and 5000 marigold saplings were distributed to the local farmers in the programme. CSIR-NEIST Floriculture team along with District Agriculture officials interacted with the farmers and discussed different orchid propagation and multiplication techniques along with market potentialities.

Honour/Recognition

- Dr Virendra M Tiwari, Director, CSIR-NEIST was invited to grace the 1st convocation of Ravindra Nath Tagore University, Hojai, Assam as Chief Guest on 08 April, 2024 in presence of the Honourable Governor of Assam, Shri Gulab Ch. Kataria, Chancellor and Prof. Amalendu Chakrabarty, Vice-Chancellor of the University.

CSIR-NEIST scientist discusses effects of antimicrobial resistance on health, agriculture and environment on television

Dr Anil K Singh, Principal Scientist, Biological Sciences & Technology Division discussed the effects of antimicrobial resistance on health, agriculture and environment under DISHA: Science Communication Programme, on Naxatra News Television which was telecast on 25 April, 2024. The talk was repeat telecast on 26 April, 2024.

Papers published

In International Peer Reviewed Journals

1. **Title:** Impact of polyvinyl chloride (PVC) microplastic on growth, photosynthesis and nutrient uptake of *Solanum lycopersicum* L. (Tomato).
Authors: Nuamzanei, Udesna Changmai, Sahana Sk, Niraj Kumar, Babli Borah,

Channakeshavaiah Chikkaputtaiah, Ratul Saikia and Tridip Phukan.

Journal: *Environmental Pollution*, 2024, Vol. 349, pp: 123994,
<https://www.sciencedirect.com/science/article/abs/pii/S0269749124007085>, via%3Dihub
IF: 8.9 (Highest Impact Factor Paper)

2. **Title:** Production of bacterial nanocellulose as green adsorbent matrix using distillery wastes for dye removal: a combined approach for waste management and pollution mitigation.

Authors: Bendangtula Walling, Alimpia Borah, Swapnali Hazarika, Pranjal Bharali, D. Ramachandran, Viswanathan Kanagasabai, Nipu Dutta, Gobichettipalayam Balasubramaniam Maadurshni, Jeganathan Manivannan, Pronab Mudoj, Pranjal Kumar Kaman, Viphezolie Sorhie, Bhagyudoy Gogoi, Alemtoshi, Shiva Aley Acharjee, Vinita Vishwakarma and Palash Deb Nath.

Journal: *Biomass Conversion and Biorefinery*, 2024,
<https://link.springer.com/article/10.1007/s13399-024-05561-x>
IF: 4

3. **Title:** The functional and structural characterisation of the bZIP transcription factors from *Myristica fragrans* Houtt. associated to plant disease-resistant defence: An insight from transcriptomics and computational modelling.

Authors: Prasanna Sarmah, Bikas Das, Jitendra Singh Verma and Dipanwita Banik.

Journal: *International Journal of Biological Macromolecules*, 2024, pp: 131817,
<https://www.sciencedirect.com/science/article/abs/pii/S0141813024026229?via%3Dihub>.
IF: 8.2

4. **Title:** Site characterisation and probabilistic seismic hazard assessment in Tura City, Meghalaya.

Authors: Himanta Borgohain, Saurabh Baruah and Sangeeta Sharma.

Journal: *Journal of Earth System Science*, 2024, Vol.133, article number 84
<https://link.springer.com/article/10.1007/s12040-024-02291-6>
IF: 1.9

5. **Title:** A molecular-design approach for selective sulfate separation from competitive acidic and alkaline aqueous media.

Authors: Arghya Basu and Sandeep Kumar Dey.

Journal: *Molecular Systems Design & Engineering*, 2024,
<https://pubs.rsc.org/en/content/articlelanding/2024/me/d4me00031e>
IF: 3.6