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*Ask the right questions, and nature will open the door to her secrets
- Dr. C.V. Raman, The Nobel Prize in Physics 1930*

Researchers Developed Site-Specific Map for Fertilizer Applications

Researchers from University of Agricultural Sciences, Bengaluru; National Institute of Abiotic Stress Management, Pune; and the Indian Council for Agricultural Research-Indian Institute of Seed Science, Bengaluru developed site-specific map for fertilizer applications. Researchers considered two important crops, paddy and maize, grown mainly with a wide range of fertilizers and have different nutrient use efficiency. Using fertilizer adjustment equations, the study team proposed a fertilizer recommendation map and a nitrogen, phosphorus, and potassium recommendation map for paddy and maize. The results of the study have significant implications for site-specific agriculture/farming by using remote sensing, Global Positioning System (GPS), and Geographical Information System (GIS).

NIBMG Kalyani, West Bengal Explored the Possibilities for Targeting Drug-Tolerant Cancer Stem Cells (CSCs)

Researchers at National Institute of Biomedical Genomics (NIBMG), Kalyani, West Bengal, have explored the possibilities for targeting drug-tolerant Cancer Stem Cells (CSCs) to discover new avenues for treating oral cancer. Scientists evolved a strategy to target the mechanism of drug resistance in oral cancer cells. Further, the study aimed to identify possible targets against cellular plasticity and drug-refractory mechanisms in oral cancer cells.

MeitY Transfers Cost Effective Li-ion Battery Recycling Technology to Recycling Industries & Start-Ups

Ministry of Electronics and Information Technology (MeitY) transferred cost effective Li-ion battery recycling technology to nine recycling industries and start-ups today as part of Mission LiFE under "Promote circularity campaign". MeitY developed this technology under the "Centre of Excellence on E-waste management" set up at Centre for Material for Electronics Technology (C-MET), Hyderabad in collaboration with Government of Telangana along with industry partner, Greenko Energies Pvt. Ltd., Hyderabad. The novelty of the indigenously developed technology could process assorted types of discarded Li-ion batteries, recovering more than 95% Lithium (Li), Cobalt (Co), Manganese (Mn) and Nickel (Ni) contents in the form of their corresponding oxides/carbonates of about 98% purity.

IIT Madras Launch of 15 Centres of Excellence

As part of 'Institute of Eminence' (IoE) Research Initiatives, Indian Institute of Technology Madras (IIT Madras) launched 15 Centres of Excellence (CoE). These Centres would be undertaking cutting-edge research to develop next-generation technologies and create a significant impact not just in India but internationally as well. The IoE Scheme was launched by the Government of India to empower Higher Educational Institutions to become world-class teaching and research institutions. IIT Madras, was chosen in 2019 and until today it had identified 68 research initiatives across 21 technology clusters in diverse fields in Phase I. Through an extensive and rigorous review process, the Institute shortlisted 15 Centres of Excellence within the IIT Madras system alongside 23 Research Centres and 10 Research Projects in Phase II.

Special Update: Indian Scientists Developed Model Cosmic Dust Particles

To mimic the unusual polarisation of interstellar comet 2I/Borisov, Scientists from the Indian Institute of Astrophysics (IIA), Bangalore, an autonomous institute of the Department of Science & Technology (DST), Government of India, developed a visually realistic cosmic dust model using a set of numerical algorithms/software called REST (Rough Ellipsoid Structure Tools). State of the art visually realistic cosmic dust model created by scientists to replicate the unusual polarisation properties of the first observed interstellar comet (not gravitationally bound to a star), 2I/Borisov, could reproduce experimental as well as observational data of light scattered by dust. The particles would be useful to determine the physical properties of dust present in different regions of space. The research has been accepted for publication in The Astrophysical Journal.