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INDIA SCIENCE AND INNOVATION WEEKLY

Ask the right questions, and nature will open the door to her secrets.

- Dr. C.V. Raman, The Nobel Prize in Physics 1930

Geological fault line outside of Vishakapatnam

University of Hyderabad (UoH), in collaboration with National Institute of Oceanography and Oil & Natural Gas Corporation Ltd, have uncovered an active fracture line that may turn out to cause a major coastal hazardous event associated with seismicity and tsunami in and around Visakhapatnam region. Researchers analyzed seismic reflection data in order to address a cause-effect relationship between the sediment load and response of underneath rocks in the Bay of Bengal.

Turmeric to potentially improve outcome of cancer therapies

Researchers from Indian Institute of Technology (IIT) Madras have shown that the active principle from turmeric that is curcumin can enhance cancer cell death caused by a protein called 'TNF-Related Apoptosis-Inducing Ligand' (TRAIL). Treating leukaemia (blood/bone-marrow cancer) cells with curcumin sensitises the cells to TRAIL and results in more efficient cell death.

Low-cost COVID-19 test kit

Indian Institute of Technology (IIT) Delhi has launched a low-cost COVID-19 testing kit, whose testing methods are probe-free, which reduces the testing cost while maintaining accuracy of the result. The institute gave non-exclusive open licence to companies for commercialising the test for INR 500 per kit.

Biofuel from non-edible waste seeds

Indian Institute of Technology (IIT) Guwahati researchers have developed methods, that eliminate competition between food and fuel, to produce biofuels from non-edible seeds, in order to overcome future oil shortages in the world. The team has also derived bio-oil from a mixture of waste plastics and waste biomass as well as found uses of the biofuel in industrial applications.

'Science, Technology and Innovation Policy' (STIP)

The Department of Science and Technology (DST), along with the Principal Scientific Advisor (PSA) to the Government of India recently started a new initiative to draft a new 'Science, Technology and Innovation Policy' (STIP), scheduled to be released in 2020. The new STI policy should strive towards maximally utilising this human effort, and making sure that frontline workers in the R&D ecosystem spend most of their time on scientific endeavours and not other, administrative tasks. The policy would deal with some of the following issues: reduce paperwork; release funds, timely; provide feedback on proposals; provide mentoring; incorporate feedback from early-career researchers; separate research & paperwork-related responsibilities, etc.

L&T builds cryostat for a nuclear fusion reactor in France

Larsen and Toubro (L&T), India's leading engineering, construction, technology, manufacturing and financial services conglomerate, has started the most complex and final assembly of cryostat, the largest stainless-steel, high-vacuum pressure chamber in the world. The cryostat is a key part of the world's largest nuclear fusion reactor being built in France. L&T was chosen in 2012 by ITER-India to manufacture and install cryostat, made of 3,850 tonnes of stainless steel. The cryostat assembly weighing 650 tonne is to be installed with other cryostat segments for ITER (International Thermonuclear Experimental Reactor) in a reactor pit in southern France. The company has used innovative and digital manufacturing techniques to ensure uninterrupted supply of high-precision assemblies to ITER.

Drug Discovery Hackathon 2020

Drug Discovery Hackathon 2020 (DDH2020) is a joint initiative of AICTE, CSIR and supported by Office of Principal Scientific Advisor, Govt. of India, NIC and MyGov. DDH2020 vision and mission is to establish 'Open innovation Model' for in silico drug discovery against Covid-19 virus and will cover the various processes in drug discovery, including but not limited to, in silico screening of molecules, lead optimization and identification of drug-able non-toxic targets. The targets/tools/lead molecules identified through the process of DDH2020 will be further taken forward for synthesis followed by subsequent steps in routine drug discovery program. The last date for submitting a proposal is 30 September 2020.

Special Update: National Council for Science & Technology Communication (NCSTC)

The National Council for Science and Technology Communication (NCSTC) is mandated to communicate Science and Technology to masses, stimulate scientific and technological temper and coordinate and orchestrate such efforts throughout the country. The programmes of NCSTC aims at building capacity for informed decision making in the community and promote scientific thinking. It is devoted towards societal upliftment through the dissemination of scientific knowledge in an informed manner and builds programmes with the help of different media which percolate down to every nook and corner of the society.

Further details can be found at: <https://dst.gov.in/>