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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

Use of AI to study supply chain network of biofuels

Researchers at the Indian Institute of Technology (IIT) Hyderabad are using computational methods to understand the factors and impediments in incorporating biofuels from non-food sources such as agricultural straw, hay, wood etc. into the fuel sector in India. The team has considered multiple technologies available for bioenergy generation across several zones in the country and performed a thorough feasibility study using data of suppliers, transport, storage and production.

IIT Roorkee develops disinfection box

Researchers at IIT Roorkee have developed a disinfection box that can be used to sterilize personal belongings, medical equipment, PPE, apparels among others, against coronavirus. Termed as the "Unisaviour" box, it comprises a metal coated with specially- designed highly reflective geometry to allow the calibrated passage of UVC light to disinfect personal belongings.

New genus of fish discovered in Manipur

A team of scientists from Maharashtra and Kerala has discovered a new species of freshwater fish, called *Waikhomia hira*, found in the Western Ghats. The team has discovered around 100 freshwater fish species since the discovery of *Puntius jayaremi* locally known as Heikak Nga in 1986, and added over 200 fish species in Manipur alone.

ISRO's Mangalyaan captures images of Phobos

The Mars Colour Camera (MCC) onboard Indian Space Research Organisation's (ISRO) Mars Orbiter Mission has captured the image of Phobos, the closest and biggest moon of Mars. ISRO launched the spacecraft on its nine-month-long odyssey on a homegrown PSLV (Polar Satellite Launch Vehicle) rocket from Sriharikota in Andhra Pradesh in 2013, after which point, the orbiter escaped the earth's gravitational field.

'Make in India' device for global project to study nuclear fusion

Engineering and construction giant Larsen & Toubro said it has achieved a major milestone under 'Make in India' initiative by building a cryostat for the USD 20 billion global fusion project. The final assembly or top lid sectors of the cryostat, a key part of the world's largest nuclear fusion reactor being built in France, were dispatched from the company's Hazira manufacturing complex in Surat district in Gujarat. Larsen & Toubro (L&T) in 2012 chosen by ITER-India to manufacture and install cryostat - a vacuum pressure vessel made of 3,850 tonnes of stainless steel. L&T has already delivered the base section, the lower cylinder and the upper cylinder for the cryostat. The cryostat's function is to provide cooling to the fusion reactor and to keep very high temperatures at its core under control.

NBRI establishes advanced virology lab for COVID testing

The National Botanical Research Institute (NBRI), Lucknow, has established an "Advanced Virology Lab" for testing COVID-19. The facility has been developed based on the guidelines of Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare, and World Health Organisation (WHO). It is a Bio Safety Level (BSL) 3 facility. This advanced version has a "Negative Pressure", which means it has a suction facility that can suck any aerosol and pass it through filters. It can filter virus or bacteria to make it a safe COVID-19 testing facility. It reduces the possibilities of infections at culturing facilities. A team from Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, will also join NBRI team for the testing of COVID samples.

Stevioside found to increase efficiency of cancer therapy

Researchers at the Institute of Nano Science & Technology (INST), Punjab, an autonomous institute of Department of Science and Technology, Government of India in their recent study have found that *Stevioside*, a natural plant-based glycoside found in leaves of Honey yerba ('*Stevia rebaudiana* Bertoni') when coated on nanoparticles can increase the efficiency of Magnetic Hyperthermia-mediated Cancer Therapy (MHCT). MHCT method of cancer therapy is based on heating the tumor tissues using magnetic nanoparticles and is based on the generation of localized heat at the tumour site on exposure to AMF (alternating magnetic field) in the presence of magnetic nanoparticles. *Stevioside* stands out for being antihyperglycemic, immunomodulatory and sports antitumor action.

Special Update: National Centre for Radio Astrophysics of the Tata Institute of Fundamental Research (NCRA-TIFR)

The National Centre for Radio Astrophysics of the Tata Institute of Fundamental Research (NCRA-TIFR) is the premier institute for radio astronomy in India, and one of the best in this field in the world. Research activities at NCRA-TIFR are centered on low frequency radio astronomy, with faculty members carrying out research in a wide range of areas, including solar physics, pulsars, active galactic nuclei, the interstellar medium, supernova remnants, the Galactic Centre, nearby galaxies, high-redshift galaxies, fundamental constant evolution, and the epoch of reionization. NCRA-TIFR has built and operates the largest steerable radio telescope in the world, the Giant Metrewave Radio Telescope, as well as the Ooty Radio Telescope, and offers challenging opportunities to work at the frontiers of astronomy and astrophysics, as well as in instrumentation development.

Further details can be found at: <http://www.ncra.tifr.res.in/>