



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

Gaganyaan Mission

The Indian Air Force, on 6 September, completed the first level of selecting astronauts for the ambitious Gaganyaan mission from its pool of test pilots. The Gaganyaan programme, an indigenous mission that would take Indian astronauts to space, was announced by PM Modi during the Independence day speech in 2018. Mission Gaganyaan aims to send humans to space by 2022.

Biocatalyst for processing leather

The Central Leather Research Institute (CSIR-CLRI), Chennai has developed an amylase-based biocatalyst, which makes leather processing environment friendly. The biocatalyst leads to reduced Chromium discharge into the environment. New chemistry was introduced in the amylase enzyme using genetic code engineering. The Tyrosine amino acid was computationally modified with extra groups such as amino, hydroxyl, fluorine and chlorine.

Unicellular to multicellular Journey

Institute of Stem Cell Science and Regenerative medicine (inStem), in collaboration with National Center for Biological Sciences has shown that simple biochemical processes drive single-celled organisms to differentiate and become varied communities of cells having different metabolism. Mass spectrometry was used to differentiate between the different types of cells. The study has been published in the journal eLife.

Myelin Foundry raises seed money

Myelin Foundry, a Bengaluru based deep technology startup develops AI-based products. The startup raised a seed funding round of \$1 million on 4 September. Myelin asserts to transform human experiences and industry outcomes by deploying artificial intelligence (AI) algorithms on complex unstructured data at the edge.

National Centre for Clean Coal Research and Development (NCCCRD)

Hon'ble Union Minister of Science & Technology, Dr. Harsh Vardhan, inaugurated the National Centre for Clean Coal Research and Development (NCCCRD) on September 16 at Indian Institute of Sciences Bengaluru. The primary goal of NCCCRD is to address several critical R&D challenges towards the development of clean coal technologies, in tandem with developing supercritical power plant technologies, both at the materials and system level. Interdisciplinary Center for Energy Research (ICER) which is India's first of its kind center equipped with state-of-the-art facilities for conducting wide spectrum of energy research was also dedicated to the nation.

IIFPT Thanjavur research on 3D-Printed foods

Researchers from the Indian Institute of Food Processing Technology (IIFPT), Thanjavur, have printed a nutritious snack using millets, green gram, fried gram and ajwain seeds. The printer is approximately the size of a mixie, weighing below 8 kg and can be carried around. It was indigenously developed and completely fabricated in India. This brings down the cost to less than Rs.75,000[US\$ 1072] while most printers in the market are expensive and cannot be conveniently used for multi-material food printing applications. This method may help print food at the International Space Station or any such environment. Instead of increasing the shelf life, printing food when and where needed appears to be a better option.

IISc, Bengaluru research on brain study

Researchers at the Indian Institute of Science (IISc), Bengaluru have identified a key mid-brain region, called the Superior Colliculus (SC), which plays a vital role in attention in humans, using advanced imaging and modeling techniques. Understanding how attention works in the brain and how it controls behavior can help scientists understand disorders such as Attention-Deficit Hyperactivity Disorder (ADHD). The findings were published their findings in the Proceedings of the National Academy of Sciences. In the future, the team plans to study the activity of SC using a different imaging technique called functional MRI (fMRI) that can identify increased blood oxygen levels in areas of the brain that are activated during tasks.

Special Update: The Forest Research Institute

Forest Research Institute (FRI), Dehra Dun made a humble beginning as Forest School established in 1878. Initially named as Imperial Forest Research Institute, FRI came into being in 1906. Later renamed as Forest Research Institute and Colleges, with a number of centres located at different places all over the country administering research as well as training of Forest Officers and Forest Rangers. After reorganization of Forestry Research in the country and creation of Indian Council of Forestry Research and Education (ICFRE) in 1988, the training and research centres were given an independent status of institutes. Forest Research Institute, now one of the institutes under ICFRE, was conferred the status of Deemed University in December 1991 on the recommendations of the UGC, Ministry of Human Resource Development, Government of India.

Further details can be found at: <http://fridu.edu.in/>