



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

India's Deep Sea Mission

Indian Space Research Organization (ISRO) has developed a design for the crew module, a sphere shaped capsule, which will be used in making a manned submersible. The design will be sent to an international agency for certification. ISRO is developing the design while the National Institute of Ocean Technology is developing the basic structure, its electronics, and life saving systems.

ICAR researchers shorten time for coconut-palm production

Researchers from ICAR-Central Plantation Crops Research Institute (CPCRI) at Kayamkulam in Kerala have developed tissue culture plants of coconut palm. CPCRI researchers used tissues from immature inflorescence.

AI-horticulture Startup raises USD 1.6 million seed funding

Bengaluru-based Fasal, an AI-powered IoT-SaaS platform for horticulture has raised USD 1.6 million in seed funding. The startup uses field sensor array to help farmers reduce input costs by optimising crop protection, irrigation, and crop nutrition.

Biocon; one of top Biotech employers

Bengaluru-based bio-pharmaceuticals company Biocon has moved up to sixth spot in the Top 10 Global Biotech Employers ranking for 2019. It continues to be the only company from Asia to feature on the prestigious US-based 'Science' magazine's annual 'Science Careers Top 20 Employers' list, since its debut in 2012.

IIT Madras delve deeper into AI

Indian Institute of Technology, Madras said its researchers have developed algorithms that enable novel applications for AI, machine learning and deep learning to solve engineering problems.

Professor BV Sreekantan passes away

Cosmic ray physicist Prof. B.V. Sreekantan, a former Director of the Tata Institute of Fundamental Research (TIFR), passed away at the age of 94 on 27 October 2019. The Professor was a protege of Dr. Homi Jehangir Bhabha, father of the Indian nuclear program. He is widely credited with establishing field stations of TIFR which subsequently became independent research centers. With support from Dr. Bhabha and his successor, Professor MGK Menon, Professor Sreekantan built a research group to study the characteristics of high energy cosmic rays. Under his leadership, TIFR also decided to join high energy physics research at the accelerator facilities of CERN.

Genome sequencing in India

Council of Scientific and Industrial Research (CSIR) announced conclusion of a six-month pilot project of conducting a 'whole-genome sequence' of 1,008 Indians sequencing genomes of Indians for healthcare and biomedical use. The project is part of a programme called 'IndiGen'. The driving motive of the project is to understand the extent of genetic variation in Indians, and learn why some genes - linked to certain diseases based on publications in international literature - do not always translate into disease. Once such knowledge is established, the CSIR expects to tie up with several pathology laboratories who can offer commercial gene testing services. Anyone looking for a free mapping of their entire genome can sign up for "IndiGen". Those who get their genes mapped will get a card and access to an app which will allow them and doctors to access information on whether they harbour gene variants that are reliably known to correlate with genomes with diseases. However, there is no guarantee of a slot, as the scientists involved in the exercise say there is already a backlog.

Special Update: National Institute of Ocean Technology

The National Institute of Ocean Technology (NIOT) was established in November 1993 as an autonomous society under the Ministry of Earth Sciences, Government of India. NIOT is managed by a Governing Council and the Director is the head of the Institute. Major aim of starting NIOT under the Ministry of Earth Sciences, is to develop reliable indigenous technologies to solve the various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ), which is about two-thirds of the land area of India.

The *Silver Jubilee celebration* of NIOT took place on **3 November 2019** during which the "Coastal flood warning system App" was launched by the Hon'ble Vice President of India Shri .M.Venkiah Naidu.

NIOT will be the Nodal Institution for Implementing the proposed Deep Ocean Mission, which encompasses all the areas of Ocean Technology like development of Manned Submersible, Offshore large scale desalination, Ocean Thermal Energy Conversion (OTEC), extensive survey of the oceans, acquisition of new ships etc. NIOT has demonstrated several technologies for societal applications such as Desalination plants, Data and Tsunami Buoy Network in Indian waters for collecting real time oceanic data, sea cage culturing in open sea, shore protection. NIOT has developed niche technologies to mine manganese nodules from deep sea, and has developed several deep sea systems like remotely operable vehicles, etc.

Further details can be found at:
<https://www.niot.res.in/niot1/index.php>