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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

AIIMS study sheds light on possible cure for eye diseases

Researchers from All India Institute of Medical Science (AIIMS), New Delhi have modified monocytes, which are white blood cells, into stem-cell like cells, in a unique media and then exposed it to biochemicals, involved in the natural process of retinal differentiation, which could acquire retinal neuron-like properties. This proof-of-concept study has shown that monocytes can be used as potential candidates for cell therapy-based interventions and disease modeling for ocular diseases.

DBT researchers find cure for tonsil cancer

Scientists from Department of Biotechnology (DBT), New Delhi have conducted a study on the whole genome methylation process for Oropharyngeal cancer of the north eastern Indian population and identified early changes in cancer Deoxyribonucleic acid (DNA), which can lead to better diagnosis and treatment.

IITians develop eco-friendly packaging from cucumber peels

Researchers from Indian Institute of Technology (IIT), Kharagpur have demonstrated that cellulose nanocrystals derived from cucumber peels, possess the highest cellulose content (18.22%), which makes the material a strong nano-filler reinforcement as bio-nano composite and thus can be used as an alternative to petroleum-based plastics for food packaging.

CCMB Researchers shed light on genome sequencing of wasps

Researchers from Center for Cellular and Molecular Biology, Hyderabad (CCMB) have unfolded the genome sequencing of wasp to understand the biological interaction between the parasite *Leptopilina* wasp and *Drosophila* fly host in order to understand the immune response system in insects.

DRDO successfully test-fires QRSAM

In second flight test on 17 November from the Integrated Test Range, Chandipur (off the coast of Odisha), the Quick Reaction Surface to Air Missile (QRSAM) System tracked the target accurately and successfully neutralised the airborne target. The test was carried out against the high performance Jet Unmanned Aerial Target called Banshee, which simulates an aircraft. The Radars acquired the target from a long range and tracked it till the mission computer automatically launched the missile. Continuous guidance was provided through Radar data link. Missile entered the terminal active homing guidance and reached the target close enough for proximity operation of warhead activation. The first in the series test of QRSAM took place on 13 November 2020 achieving the milestone of a direct hit.

Scientists discover oldest known human-made nanostructure in India

Scientists have discovered the oldest known human-made nanomaterials in the “unique black coatings” of ancient pottery shards, dated to 600 BC, unearthed from an archaeological site in Keeladi, Tamil Nadu. The research, published recently in the journal *Scientific Reports*, revealed that these coatings are made of carbon nanotubes (CNTs) which have enabled the layer to last more than 2,600 years. The people at the time are supposed to have covered the pot with vegetable or fluid extract, which may have led to the formation of CNTs during high temperature processing by subjecting the pots to 1100-1400 degree Celsius high-temperature fire treatment.

India to launch INR 4000 crore Deep Ocean mission

India will launch an ambitious ‘Deep Ocean Mission’ that envisages exploration of minerals, energy and marine diversity of the underwater world. The Mission, which is expected to cost over INR 4,000 crore (approx. CHF 533 million), will give a boost to efforts to explore India’s vast Exclusive Economic Zone and Continental Shelf. The multi-disciplinary work will be piloted by the Ministry of Earth Sciences (MoES) and other Government Departments like the Defence Research and Development Organisation (DRDO), Department of Biotechnology (DBT), Indian Space Research Organisation (ISRO) and Council for Scientific and Industrial Research (CSIR). One of the main aspects of the Mission will be design and demonstration of human submersibles.

Special Update: Bose Institute, Kolkata

Sir Jagadish Chandra Bose founded the Bose Institute in 1917 with an intention for the advancement of science and diffusion of knowledge. The Institute is in the service of the nation for the last 75 years through its pursuit of advancement of knowledge in science and technology and by producing efficient and skilled scientific manpower that the country needs for its development. The institute caters to this need through six departments (Physics, Chemistry, Botany, Microbiology, Biochemistry and Biophysics), two sections (Plant Molecular Cellular Genetics and Animal Physiology), and through other service centers like RSIC, DIC, Library, Workshop etc. There are also experimental field stations at four different locations in West Bengal (Darjeeling, Falta, Madhyamgram and Shyamnagar) mainly concentrating in applied research. The institute is at present funded by the Department of Science and Technology, Govt. of India. Further details can be found at: <http://www.jcbose.ac.in/>