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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

Brain waves to assess sharpness of workers

Researchers at the Indian Institute of Technology Madras (IIT Madras) have shown that Electroencephalogram (EEG) can also be used to measure brainwaves in industrial workers, to assess their mental sharpness, especially during times of crisis. Their results showed that the amount of Theta Waves could identify any mismatch between the worker's mental model of the process, and the actual plant behaviour during abnormal situations.

Cannister bag to hold respiratory secretion

Health professions from Sri Chitra Institute of Medical Sciences in Thiruvanthapuram have developed a cannister bag named AcryoSorb, which is lined with super-absorbent material and allows easy-spill-proof disposal of the biomedical waste. The product has been tested as per international design and the know-how transferred to Romsons Scientific and Surgical Private Limited Uttar Pradesh.

Indigenous algorithm to develop digital data

Team of researchers from the Indian Institute of Technology, Guwahati (IIT Guwahati), in collaboration with scientists from the University of Pardubice, Czech Republic, is working towards developing indigenous algorithms that can protect digital data from cyber-attacks by advanced computers. This need has given rise to a new field of research, called Post-Quantum Cryptography (PQC).

DBT-ILS develop treatment for breast cancer

Department of Biotechnology's Institute of Life Sciences (DBT-ILS), through a study, has demonstrated that restoration of a protein in the body called Estrogen-related receptor beta (ERR β), in breast cancer patients, with the help of a molecule called MLN4924, promotes the production of two important tumor suppressors p21 and E-cadherin.

APIIC signs MoU with CSIR-IICT to establish a bulk drug park

Andhra Pradesh Industrial Infrastructure Corporation Ltd (APIIC) signed a Memorandum of Understanding (MoU) with Council of Scientific and Industrial Research – Indian Institute of Chemical Technology (CSIR-IICT) to establish a bulk drug park in the state. CSIR-IICT is the knowledge partner and will offer needed technical backing to make the proposal which will be submitted by the Andhra Pradesh Government to the Department of Pharmaceuticals to seek financial assistance from the Centre. Government of India has recently launched a scheme for the development of three bulk drugs and four medical device parks with grants-in-aid to states with a maximum limit of INR 1,000 crore (approx. USD 133.3 million).

Chandrayaan-1 orbiter discovers traces of rust on Moon

Through data collected by the India Space Research Organisation's Chandrayaan-1 orbiter, traces of rust have been detected on the moon. The detection of haematite (Fe₂O₃), which is an oxidised form of iron, that requires the presence of air and water, on the lunar surface, has been found on the side of the moon that is always facing earth. Hematite at craters of different ages may have preserved the oxygen isotopes of Earth's atmosphere in the past billions of years. Future oxygen isotope measurements can test the hypothesis and may help reveal the evolution of Earth's atmosphere.

Pune Research Institutes are building India's first atomic clocks

Two Pune-based premier research institutes, Inter-University Centre for Astronomy and Astrophysics (IUCAA) and Indian Institute of Science Education and Research (IISER) are joining hands to build India's first two optical atomic clocks. Optical atomic clocks are considered to be the next step in the evolution of atomic clocks and are likely to replace caesium atomic clocks as the world's time standard in future. IUCAA and IISER teams are using optical and electromagnetic 'traps' to make sure the atoms don't combine to form molecules, bump into each other and/or don't react with the container's walls. The Ytterbium-ion clock will be built by IUCAA in four to five years and the strontium-atom clock will be built by IISER in two years or less.

Special Update: Central Power Research Institute (CPRI)

Central Power Research Institute is the power house of the Indian electrical industry. Set up in 1960 by the Government of India, it functions as a centre for applied research in electrical power engineering assisting the electrical industry in product development and quality assurance.

CPRI also serves as an independent authority for testing and certification of power equipment. With its state-of-the art infrastructure and expertise, CPRI has made significant contributions to the power sector in the country for improved planning, operation and control of power systems. Besides in-house R&D, CPRI also undertakes sponsored research projects from manufacturers and other agencies in different areas of specialization.

Further details can be found at:
<https://www.cpri.in/>