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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

Modelling method to improve image quality

Indian Institute of Technology, Mandi (IIT Mandi) researchers are using mathematical modelling methods to eliminate speckles and to improve the quality of images captured by various imaging systems through telegraph-diffusion and wave equation. This model will be used in biomedical and synthetic aperture radar (SAR) image processing as well as cinematography and photography.

CSIR conducts survey in its labs to check for corona antibodies

Council of Scientific and Industrial Research (CSIR) is conducting a national sero-survey in its 38 laboratories and institutes across India to gauge the serological prevalence among its employees and also understand how long antibodies against COVID-19 remain active. With this method, the infections trends in parts of nation where CSIR labs are located, can be easily scoped out.

ITM help to understand the role of aerosols on weather

Researchers at Indian Institute of Tropical Meteorology (IITM), Pune have conducted a new study on aerosol variability, its formation and ageing in relation to different parameters in South-West India, which found out a proportional increase in Relative Humidity (RH) and mass concentration of aerosol components such as sulfate, nitrate and chloride.

Novel way to separate enantiomers

Researchers from IIT Guwahati and RIKEN, Japan have developed a novel and simple method to separate chiral enantiomers by chromatography with the use of supramolecular polymers. Development of such process, which has a huge commercial potential, may help in reducing the price of chiral active pharmaceutical ingredients (APIs) and finally that of the medical treatment itself.

Global team of scientists discover a galaxy using India's Astrosat

In a major breakthrough, a global team of researchers from India, Switzerland, France, Japan and Netherlands, led by scientists of the Inter University Centre for Astronomy and Astrophysics (IUCAA) in Pune, has discovered one of the earliest galaxies in extreme ultraviolet light. The team observed the galaxy, which is located in the Extreme Deep field, through AstroSat, which is India's first multi-wavelength satellite that has five unique X-ray and ultraviolet telescopes working in tandem. The telescope has detected extreme UV light from a galaxy called AUDFs01, 9.3 billion light-years away from Earth. Despite the AstroSat being a smaller ultra violet imaging telescope (UVIT) than NASA's Hubble Space Telescope (HST), Astrosat was still able to detect the UV light (with energy greater than 13.6 Electron Volt or eV), because the background noise in the UVIT detector on Astrosat is much less than the ones on HST.

Biofuel from algae to boost India's clean energy efforts

Indian scientists, under the Innovation in Science Pursuit for Inspired Research (INSPIRE) scheme of Ministry of Science and Technology, have developed low-cost biodiesel from microalgae. With India exploring and using different clean energy alternatives to lower its carbon footprints, biofuel from algae of marine origin could be one of the low-emission solutions in the country in near future. A team from National Institute of Technology, Tiruchirappalli, have isolated predominant strains of marine microalgal species from the coastal regions of Tamil Nadu for their potential in terms of total organic carbon content and Triacylglycerides (TAG) content for biodiesel production. The group will formulate a roadmap by which biodiesel can be produced commercially and can be put in an energy market sustainably

Special Update: Central Scientific Instruments Organisation

Central Scientific Instruments Organisation (CSIO), a constituent unit of Council of Scientific & Industrial Research (CSIR), is a premier national laboratory dedicated to research, design and development of scientific and industrial instruments. It is a multi-disciplinary and multi-dimensional apex industrial research & development organisation in the country to stimulate growth of Instrument Industry in India covering wide range and applications.

CSIO is a multi-disciplinary organization having well equipped laboratories manned by highly qualified and well trained staff with infrastructural facilities in the areas of Agrionics; Medical Instrumentation and Prosthetic Devices; Optics and Cockpit based Instrumentation; Fiber/Laser Optics based Sensors & Instrumentation; Analytical Instrumentation; Advanced Materials based Transducers etc. Large number of instruments ranging from simple to highly sophisticated ones, have been designed and developed by the Institute and their know-hows have been passed on to the industry for commercial exploitation. Having contributed substantially towards the growth of the scientific instruments industry in the country, CSIO enjoys high degree of credibility among the users of the instruments as well as the instrument industry.

Further details can be found at:
<https://www.csio.res.in/home.php>