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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*

IIT Jodhpur developed a Series of Catalysts Capable of Efficiently Producing Hydrogen

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Researchers at Indian Institute of Technology (IIT) Jodhpur, developed a series of catalysts capable of efficiently producing hydrogen under ambient conditions. Researchers also informed that the end application of this research lies in the industries, automobile, and energy sectors. The research team screened over 100 catalyst combinations to develop five sets of catalysts that gave high hydrogen production under sunlight. The catalysts work for wastewater, saline water and brackish water and are recyclable and could be used multiple times. Lanthanide-based catalytic systems gave the best results and were found effective in continuous pure hydrogen production for 7.5 hours. Finally, researchers aims to develop a prototype followed by a scale-up for large-scale hydrogen production for end-user applications.

IIT Mandi Developed New method to Assess Seismic Vulnerabilities of Buildings

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Researchers at Indian Institute of Technology – Mandi (IIT-Mandi) developed a method to assess the ability of buildings in the Himalayan region to withstand earthquakes. The methodology developed for screening buildings is a simple single-page RVS form that does not require much expertise to fill and considers the various vulnerability attributes unique to the buildings in the case study region. Researchers made calculations using observations which produced a seismic vulnerability score and allowed better decision-making for maintenance and repair.

IIT-Mandi Developed New Method to Harness Energy from Household LED

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Researchers at the Indian Institute of Technology (IIT), Mandi, developed a new photovoltaic material that could generate power when irradiated with light produced in household light sources like LED or CFL. Light-induced power generators are viable alternatives to batteries for powering the Internet of Things (IoT) devices, increasingly used in mobile phones, smart homes, and other applications that require various real-time data. Researchers synthesized a photoactive quasi-cubic structured perovskite material by incorporating Formamidinium (FA⁺) cation in Methylammonium Lead Iodide (MAPbI₃) perovskite material. Indoor light-induced power generation would be increasingly sought in the near future due to the exponential growth in the use of smart devices in applications such as wellness and health monitoring, smart homes, logistics, smart manufacturing, etc

IIT Madras Unveiled an Electric Racing Car

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Indian Institute of Technology Madras (IIT Madras) students launched the first electric formula racing car to come from the institute during an event in the campus. The electric racing car is built completely by students Team Raftar, the formula car 'RF23' is the result of a one-year-long process in which the team undertook the Design, Manufacturing, and Testing. As a Formula Student Team, Raftar specializes in designing, building, and racing a high-performance race car every year to compete in Formula Student competitions against top engineering institutions across the world. The team would be participating in the Formula Bharat event, scheduled to be held in January 2023 at the Kari Motor Speedway in Coimbatore.

Special Update: India's SARAS Radio Telescope Provides Astronomers Clues to Universe's First Stars & Galaxies

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Researchers from the Raman Research Institute (RRI), Bengaluru in collaboration with other researchers estimated the energy output, luminosity, and masses of the first generation of galaxies that are bright in radio wavelengths with the help of 'Shaped Antenna measurement of the background Radio Spectrum 3 (SARAS) telescope', which is indigenously designed and built at Raman Research Institute and was deployed over Dandiganahalli Lake and Sharavati backwaters. Further, Scientists also determined properties of radio luminous galaxies formed just 200 million years post the Big Bang, and thus provides an insight to the properties of the earliest radio loud galaxies that are usually powered by super massive black holes.