



Embassy of India, Berne

INDIA SCIENCE AND INNOVATION WEEKLY

14 March 2022

Ask the right questions, and nature will open the door to her secrets

- Dr. C.V. Raman, The Nobel Prize in Physics 1930

Indian Scientists discovered Novel Strategy to Synthesize Solid Adsorbents for CO₂ Capture & Utilization

Scientists at Indian Institute of Science Education and Research (IISER)-Kolkata with support from Department of Science & Technology, Govt. of India under Mission Innovation program discovered a strategy to synthesize novel solid adsorbents especially for CO₂ capture and CO₂ utilization. Under the novel strategy researchers discovered special types of nanoparticles or microparticles which can capture CO₂ in their micro and mesoporous voids. Scientists further added that Carbon capture and utilization are growing fields of research focusing on reducing CO emissions.

Inauguration of North India's First-ever Space Center in Jammu

Department of Space, Govt. of India reported that India's first-ever Space Center in Jammu 'Satish Dhawan Centre for Space Sciences' at Central University of Jammu was inaugurated with the aim and focus towards Space Training Institutes in Jammu & Kashmir and space technology would open new vistas for start-ups and innovation in Jammu region. Space Center in Jammu would further contribute towards space economy as India is already receiving revenue worth millions of European Euros and US Dollars through the launching of foreign satellites and also contributions towards SAARC satellite which caters to needs of most of the neighbouring countries including Bangladesh, Bhutan, Sri Lanka, Nepal, etc.

Indian Scientists Developed Energy-Efficient Hydrogen Production

Indian Scientists at Centre for Nano and Soft Matter Sciences (CeNS), an autonomous institute of the Department of Science & Technology, Govt. of India designed and developed a Nickel oxide (NiO) based system for energy-efficient hydrogen production by urea electrolysis. The urea electrolysis is helpful towards urea-based waste treatment with low-cost hydrogen production as India is one of the top countries by urea production, and it produced 244.55 LMT of urea during 2019-20. The nitrogenous fertilizer industries generate a high concentration of ammonia and urea as effluent, which could be utilized for energy production towards country's benefits.

C-CAMP Bengaluru Developed New Tech to Aid Screening & Monitoring of Lung Diseases

Centre for Cellular and Molecular Platforms, (C-CAMP), Bengaluru developed an AI-based mobile app technology that promises to offer a rapid, affordable, easy-to-use, and point of care solution. According to a release from C-CAMP, the development, validation & pilot deployment of this technology has been extremely promising, with triaging results showing more than 95% sensitivity under laboratory conditions for COVID-19. Further, there would be further testing at the field level, C-CAMP would continue to actively catalyse the commercialisation efforts through its national and international ecosystem which includes diverse stakeholders from industry, government, clinical, and the investor community.

Special Update: IISc Researchers developed a Paper-based Sensor for Detecting Hydrogen Peroxide

Researchers at the Indian Institute of Science (IISc) developed a paper-based sensor for detecting even tiny volumes of hydrogen peroxide as detecting hydrogen peroxide efficiently is crucial in other fields; peroxide-based explosives, for example, could be traced using hydrogen peroxide, which is sometimes used as a starting material. IISc researchers used a technique, which involved preparing a gel from a solution containing a specially designed molecule, treated with a liquid that has hydrogen peroxide, and air-drying them on a thin paper disc about 0.45 cm in diameter. The paper disc emits green light when placed under a UV lamp, only in the presence of hydrogen peroxide. The intensity of the light was found to be directly proportional to the concentration of hydrogen peroxide.