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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*

IISc-Bengaluru Ranked Top Research Varsity: QS World University Rankings

As per the Quacquarelli Symonds (QS) University Ranking, Indian Institute of Science (IISc) Bengaluru ranked as the 'fastest-rising' South Asian university, having ranked 155. With 12 of the 41 Indian universities improved their positions in the latest global rankings, IISc (155) has raced ahead of IIT Bombay (172), which was last year's India leader at 177. India story is led by government-run institutions with the Institution of Eminence (IoE) tag as five of the top 10 in the India list. While IIT-Bombay has risen five places, IIT-Delhi (India's third) has risen 11 places. Among the public IoEs, five attained a higher rank than in the previous edition.

INST Mohali Found Novel Way to Treat Drug-Resistant Bacterial Infections

Researchers at the Institute of Nanoscience and Technology (INST), Mohali, have found a novel way based on Nanotechnology approach to treat drug-resistant bacterial infections: by inducing self-destruction in the bacteria. This new treatment method stemmed from a discovery as researchers found that some highly infectious bacteria synthesise magnetic nanoparticles in their cells & taking advantage of this property, researchers agitated the nanoparticles with an alternating magnetic field to generate hyperthermia (excess heat) in the bacteria. The study results indicated that the induced heat destroyed 70-80% of the bacteria, reducing the infection. INST Mohali Researchers published the results in the journal Nanoscale.

IIT Roorkee Developed Novel Multi-Model Nanobiotic Platform to Combat Bacterial Pathogens

Researchers at Indian Institute of Technology (IIT) Roorkee developed novel multi-model nanobiotic platform that combats bacterial pathogens. Researcher further added that the nano platform leverages the synergistic antibacterial activity of a food-grade peptide (an antimicrobial peptide from Generally Recognized As Safe- GRAS category bacterium, *Pediococcus pentosaceus*) to mitigate multidrug-resistant bacterial pathogens. The technology platform has been shown to have applications in the health sector and food packaging. The novel multi-model nanobiotic platform would open up new avenues for combating a wide range of pathogens in the health or food sector."

IIT Roorkee Developed Cement-Free Wall Tiles from Waste Polythene

Researchers at Indian Institute of Technology (IIT) Roorkee in collaboration with a Roorkee based engineering service unit 'YB Scientific R&D Solutions', developed cement-free wall tiles from waste polythene. Researchers added that the tiles developed in an eco-friendly manner would cost less than regular tiles but have the same tensile strength. The waste plastics are used as a binder and waste stone dust as additives along with some dyeing chemicals. These products have a better interlocking, aesthetic look, long lifetime & are non-breakable. As per research team, around 250 gm of waste plastics is used and to cover one sq-ft surface area around 1.5 kg of waste plastics would be needed, with production cost of INR 45 per sq-ft which is highly competitive.

Special Update: IIT Madras' Robot to Clean Septic Tanks without Human Intervention

A Robot 'HomoSEP' developed to eliminate manual scavenging in India was developed by the researchers at Indian Institute of Technology (IIT) Madras together with IIT Madras-incubated start-up Solinas Integrity Private Limited. The Robot 'HomoSEP' is all set for field deployment to clean septic tanks without human interventions. IIT Madras further announced that a total of ten units are planned to be deployed across Tamil Nadu with the Researchers already in touch with Sanitation Workers to identify locations. Locations in Gujarat and Maharashtra are also being considered. The HomoSEP Robot could homogenize the hard sludge in septic tanks through a custom-developed rotary blade mechanism and pump the tanking slurry using an integrated suction mechanism & Sanitation Workers would be able to operate the HomoSEP on their own.