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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*

Indian Researchers Developed Sustainable Method for Making Bricks Out of Martian Soil

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Researchers at the Indian Institute of Science (IISc), in collaboration with the Indian Space Research Organisation (ISRO) developed sustainable method for making bricks out of Martian soil, by using bacteria and urea. Scientists further added that “space bricks” could be used to construct building like structures on Mars that could facilitate human settlement on Mars. Further, scientists plans to investigate the effect of Mars’ atmosphere and low gravity on the strength of the space bricks as the Martian atmosphere is 100 times thinner than Earth’s atmosphere, and contains over 95% carbon dioxide, which may significantly affect bacterial growth. Researchers also constructed a device MARS (Martian Atmosphere Simulator), which consists of a chamber that reproduces atmospheric conditions found on Mars in the lab.

IIT Madras Developed Skill Training Tools for Healthcare Workers

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Indian Institute of Technology (IIT) Madras in partnership with National Health Mission (NHM), Tamil Nadu developed skill training tools ‘SmartNRP’ to reduce Neonatal Mortality Rate (NMR) and Maternal Mortality Rate. The SmartNRP tool would be used for training the PHC health workers in Tamil Nadu by using Virtual Reality (VR), Gaming Technologies, cloud, Artificial Intelligence (AI) and Machine Learning (ML). The tool would scaled subsequently to other states in India.

IISc Identified an Alternative Technique to Produce Metal Powders

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Researchers at the Indian Institute of Science (IISc), identified an alternative technique to produce metal powders which has interesting implications for Additive Manufacturing (AM), processes including areas such as the manufacture of biomedical implants. Additive manufacturing (AM), also known as metal 3D printing, creates objects by addition of material, layer by layer and a major source material for AM is metal powder, which is predominantly produced using a technique called atomisation, in which a molten metal stream is broken up into fine droplets using air or water jets. Since, atomisation returns poor yield, is expensive, and is inflexible in the types of materials it could handle, therefore researchers at IISc with the identified alternative technique would side-steps these problems.

Indian Start-up Developed Waterless Bath Solution & Toothpaste

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In collaboration with Indian Institute of Technology (IIT) Delhi, Gurugram-based startup Clensta Technologies developed waterless bath solution and a waterless toothpaste, which consists of a body wash and shampoo in two separate packs, requires no rinsing with water and easily rubs off skin or hair after use. The start-up further claims that a user needs no more than a 20 ml spray of the product, and the product has been improved by adding mosquito repellents and other anti-microbial properties to it. The product is useful for soldiers & patients with injuries and also for doctors who need to wash their hands several times a day. IIT-D has small equity stake in Clensta Technologies.

Special Update: IIT Madras Researchers Launched India's First Indigenously Developed Polycentric Prosthetic Knee

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Researchers at Indian Institute of Technology (IIT) Madras launched India's first indigenously developed Polycentric Prosthetic Knee, called as ‘Kadam’. The Polycentric Prosthetic Knee 'Made in India' product is a polycentric knee for Above Knee Prosthesis developed in association with Society for Biomedical Technology (SBMT) and Mobility India. ‘Kadam’ has advantages over a hinge joint because of the multiple axes of rotation, which provide the user greater control over the prosthesis while walking and maximum knee flexion of 160 degrees. Further, Kadam is affordable & complying with ISO 10328 standards including 30 lakh cycles of fatigue testing and also its patented geometry is specifically optimized for use on uneven terrains.