DST

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STRIDES

Science, Technology, Research, Innovation & DEvelopmentS

BRINGS NEWS ON S&T DEVELOPMENT FROM DST SUPPORT AND BEYOND

EDITORIAL

The career path of women is usually full of challenges – prejudices against them, lack of mentors, societal challenges, and family responsibilities. Yet, this gender which occupies 50 % of the population, is a repository of talents that can take science to a different level if harnessed in the right manner.

In order to harness this potential, the Ministry of Science and Technology has devised several schemes which can help women overcome many of these challenges and produce scientific outcomes while balancing their family responsibilities. The month of March with International Women's Day is an occasion to celebrate these schemes and highlight the achievements of women in science as well as in other related fields. This year, three new programmes were announced under the Women in Science & Engineering (WISE)-KIRAN Scheme on the occasion.

The month also saw several significant S&T outcomes like new technology that can autonomously repair & restore high-value components such as moulds, turbine blades & aerospace components, gold nanorods that can help detecting food contamination, touchless touch screen technology that can restrain viruses spreading through contact as well as interesting climate change and astronomy-related research.

The March newsletter also features Dr. Neena Gupta, a woman scientist who received the prestigious international Ramanujam Prize in mathematics, a field with a limited representation of women.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF

COVER STORY

Dr Jitendra Singh announces several programmes to increase the participation of women in science

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today said that Women Empowerment is key to achieve Prime Minister's vision of 5 trillion Dollar Economy by 2025-26.

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Foundation stone of School of Advanced Materials (SAMat) unveiled at JNCASR

The foundation stone of the School of Advanced Materials (SAMat) was unveiled to bring together all the materials research activity of the JNCASR – a centre that has emerged as one of the frontier areas of materials research in the country and worldwide over the last 30 years.

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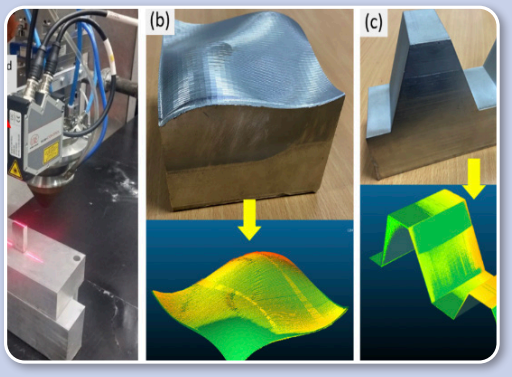
POPULAR SCIENCE STORIES



New technology can autonomously repair & restore high-value components such as moulds, turbine blades & aerospace components

An Indian Scientist has developed a completely autonomous technology for the repair and restoration of high-value components such as moulds, turbine blades, and other aerospace components that require minimal human intervention.

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Tuning of properties of Gold-nanorods using DC electric field paves way for more efficient way of detecting food contamination

In a recent study, Indian researchers have found that properties of Gold-nanorods can be tuned by applying external forces for devising sensors that can detect trace amounts of molecules, paving the way for more efficient way of detecting food contamination.

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Climate change likely to favor soil-borne plant pathogens for diseases like dry root rot of chickpea in future

Indian Scientists have identified that high-temperature drought conditions and low soil moisture content are favorable conditions for dry root rot (DRR), a disease that damages the roots or girdles the trunk in chickpea.

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Touchless touchscreen technology developed can restrain viruses spreading through contact

Indian Scientists have provided an affordable solution to develop a low-cost touch-cum-proximity sensor popularly called touchless touch sensor through a printing technique.

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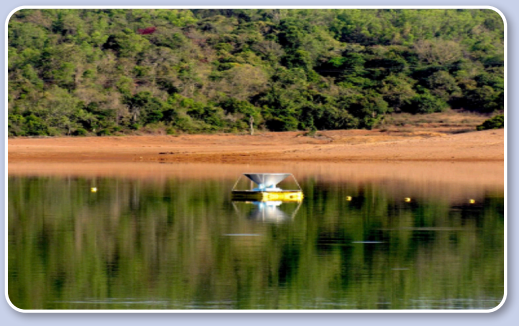

SARAS 3 radio telescope refutes recent claim of the discovery of a radio wave signal from cosmic dawn

Indian researchers have conclusively refuted a recent claim of the discovery of a radio wave signal from cosmic dawn, the time in the infancy of our Universe when the first stars and galaxies came into existence.

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Novel strategy to synthesize solid adsorbents for CO_2 capture and utilization discovered

Professor Rahul Banerjee's group at IISER-Kolkata, with support from Department of Science & Technology, Govt. of India under Mission Innovation program, has demonstrated a strategy to synthesize novel solid adsorbents, especially for CO_2 capture and CO_2 utilization.

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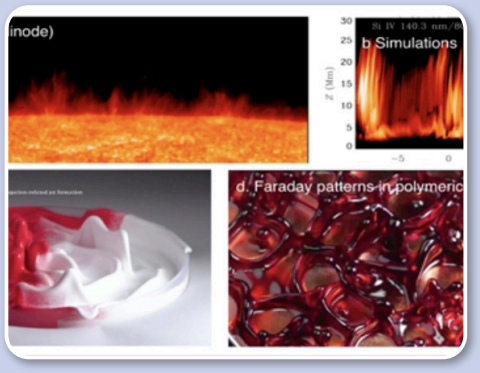

Science behind jets of plasma occurring all over Suns chromosphere unravelled

Scientists have unravelled the science behind the jets of plasma - the fourth state of matter consisting of electrically charged particles that occur just about everywhere in the sun's chromosphere, which is the atmospheric layer just above the Sun's visible surface.

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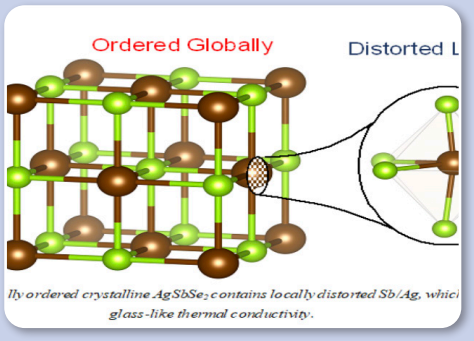
POPULAR SCIENCE STORIES



lly ordered crystalline $AgSbSe_2$ contains locally distorted Sb/Ag, whici glass-like thermal conductivity.

Ultra-low Thermal Conductivity in Crystalline Solid with promising thermoelectric applications trace to their Local Structural Distortion

In a recent study, Indian Scientists have cracked the origin of ultralow thermal conductivity in silver antimony selenide (AgSbSe2), a crystalline solid having promising thermoelectric applications.

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Experts suggest measures to revitalize industry-academia collaboration at Post Budget Webinar

A panel of experts from different sectors like Industry, Academia, and Government bodies suggested developing a technology roadmap for next 10 years that could help develop industry-ready projects and encourage translational research in the Indian academic system to promote product development at a breakaway session of a Post Budget Webinar on Promoting R&D, Human Resources in Emerging Areas inaugurated by the Prime Minister.

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Scientists develop energy-efficient hydrogen production by urea electrolysis

Indian Scientists have designed an electrocatalyst system for energy-efficient hydrogen production with the help of electrolysis of urea. The urea electrolysis is helpful towards urea-based waste treatment with low-cost hydrogen production.

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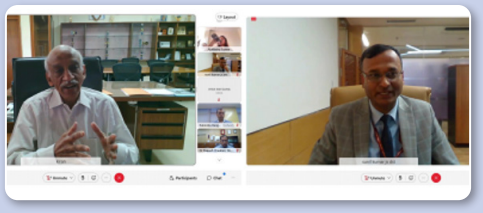

Experts discuss ways to transform India through Geospatial knowledge & infrastructure

Experts discussed ways for transforming India through geospatial knowledge and infrastructure with the help of national geospatial policy that can facilitate the accessibility of data, create effective human resources, encourage collaboration between government, industry, and academia as knowledge partners and increase the usability of the data, at a breakaway session of the post-budget webinar on Technology-Enabled Development inaugurated by the Prime Minister.

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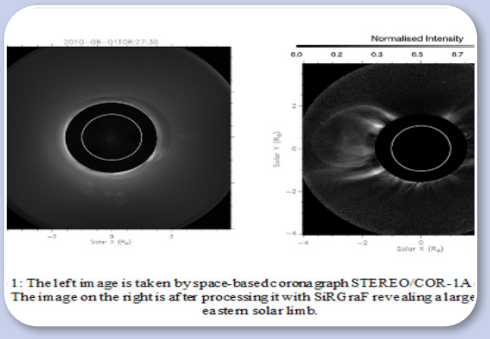

1: The left image is taken by space-based coronagraph STEREO/COR-1A. The image on the right is after processing it with SiRGraF revealing a large eastern solar limb.

A simple image-processing technique to unravel the dynamics of Solar Corona can help detect Coronal Mass Ejections better

A new method developed by Mr. Ritesh Patel, Dr. Vaibhav Pant, and Prof. Dipankar Banerjee from Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital, along with Satabdwa Majumdar from the Indian Institute of Astrophysics (IIA), Bengaluru, autonomous institutes under DST, Government of India, called the Simple Radial Gradient Filter (SiRGraF), is capable of separating the background revealing the dynamic corona.

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INTERNATIONAL

India and Oman agree upon programme of scientific and technological cooperation

India and Oman will work together in certain areas like sustainability scientific harnessing of resources under a Programme of Cooperation (POC) in the fields of Science and Technology was signed between them.

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Indo-German Science and Technology Centre (IGSTC) signs MoU with Tata Steel and LoI with BASF for Scientific cooperation & partnerships

The partnership has been established between bilateral GSTC through the MoU with Tata Steel Ltd will institute a joint collaborative Research & Innovation (R&I) framework to facilitate new technologies development, conduct thought leadership workshops, and support human capital development.

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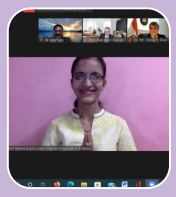
AWARD WINNING SCIENTIST



Professor Neena Gupta receives Ramanujan Prize for Young Mathematicians

The Ramanujan Prize for Young Mathematicians was awarded to Professor Neena Gupta, a mathematician of the Indian Statistical Institute in Kolkata, in a virtual ceremony. She received the award for the year 2021 for her outstanding work in affine algebraic geometry and commutative algebra.

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Editor-in-Chief: Dr Akhilesh Gupta

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