

STRIDES

Science, Technology, Research, Innovation & DEvelopmentS

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

EDITORIAL

Jammu and Kashmir (J&K), the paradise on earth aspires to be the paradise for startups. The vast biodiversity resource of the Union Territory gives it a rich potential to become India's hub for agri-tech startups. To provide a boost to this potential, the Department of Science and Technology (DST) organised the first startup expo in the valley. It saw an enthusiastic participation from a large number of young entrepreneurs and startups from the region.

At the inauguration of the event at Srinagar this month, Union Minister of State (I/C) Science & Technology; Minister of State (I/C) Earth Sciences Dr. Jitendra Singh highlighted the major sectors like agriculture, biomedical engineering, telemedicine that can be the prime focus areas for startups in J&K. The month also saw the G-20 Research Ministers meeting in which major themes and topics of the Research Innovation Initiative Gathering (RIIG) during India's presidency starting from 1st December 2022 were discussed.

Important findings on new materials showed the path towards stable LEDs, new technology for retrofitting non-earthquake-resistant buildings brought hope for earthquake prone areas and implementation of Swachhata Special Campaign presented a new dimension on cleanliness and efficiency, all of which find place in this month's newsletter. The month's newsletter also features the achievements of the Karnataka State S&T Council.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF

COVER STORY



J&K can become the hub of agri-tech startups & benefit from its immense biodiversity: Dr. Jitendra Singh

Jammu and Kashmir has a huge potential of becoming the hub of agri-tech startups

and technology can value add to the products from the region with its immense biodiversity said Union Minister Dr. Jitendra Singh.

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Major themes of the Research Innovation Initiative Gathering (RIIG) during India's presidency highlighted at G-20 Research Ministers

meeting

Dr. Srivari Chandrasekhar, Secretary DST, highlighted that materials for sustainable energy, scientific challenges & opportunities to achieving a sustainable blue economy, biodiversity, and economy would be the major themes and topics of RIIG during India's presidency starting from 1st December 2022.

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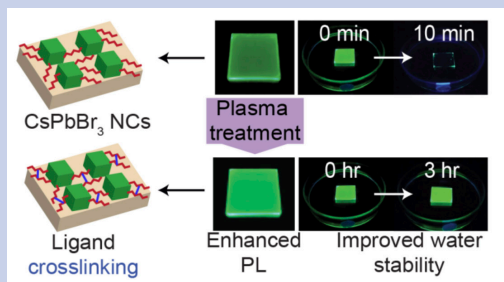
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Cover Story

Popular Science Stories
New Initiatives

INSIDE THE E-NEWSLETTER

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New materials developed can help move towards stable LEDs emitting bright light

Plasma treatment of some inorganic nano-materials has shown the way towards bright, stable and affordable light-emitting diodes (LEDs) which can be sources of lighting for the future.

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DST implements multiple initiatives for Swachhata Special Campaign

DST, in association with its subordinate offices and Autonomous Institutions (AIs) has been vigorously implementing the Special Campaign for Swachhata and disposal of pending matters during the period 2nd October, 2022 to 31st October, 2022.

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New technology for retrofitting non-earthquake-resistant buildings can prevent major damage in old settlements

Researchers have found a solution for retrofitting old non-earthquake-resistant buildings with a technology that can prevent

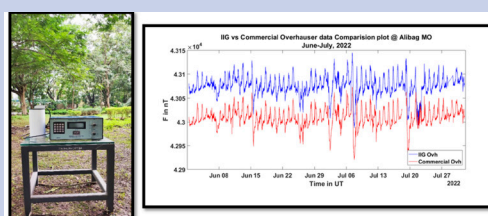
major damage to such buildings from earthquakes without compromising on their strength.

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CRISPR gene-editing possible in temperature sensitive organisms, plants & crop varieties

Indian scientists have demonstrated for the first time that the associated Cas9 enzyme, which acts as molecular scissors to cut DNA at a location specified by a guide RNA, can bind to and cut the target DNA at very low temperatures.

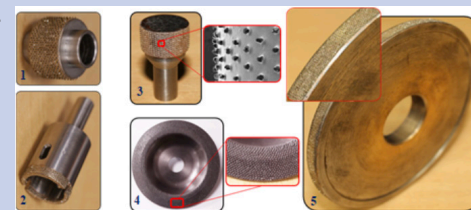
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India's first indigenous Overhauser Magnetometer may show the way towards reducing costs of sensing experiments essential for geomagnetic sampling

Indian scientists have developed an Overhauser Magnetometer, one of the most accurate magnetometers extensively used by all magnetic observatories around the world, making way for reducing the cost of sampling and sensing experiments essential for geomagnetic sampling.

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An indigenous technology from IIT Madras can now produce new-generation superabrasive tools

A newly developed technology can now produce new-generation multi-point/single-layer superabrasive tools for advanced grinding applications to meet high productivity and energy-efficient material removal requirements

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Certain mangrove species in east coast and west coast of India is likely to reduce and shift landward

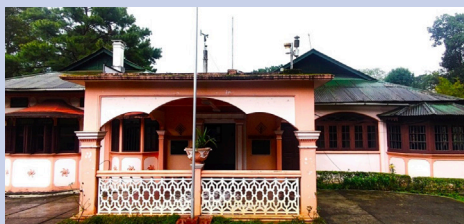
Certain mangrove species in Chilika and Sundarbans along the east coast and Dwarka and Porbandar along the west coast of India is likely to reduce and shift landward by 2070 due to decline in suitable habitats in response to precipitation and sea level changes, said a study based on a prediction model.

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New Geophysical Research Laboratory can improve earthquake occurrence



POPULAR SCIENCE STORIES



assessment & related hazards in NE

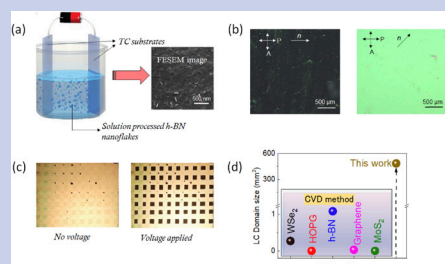
The North-East Geophysical Research Laboratory (NEGRL) has been established in Shillong for tracking earthquakes through a multidisciplinary approach by carrying out pre- and co-seismic signatures in North-East India using a variety of observational/modelling techniques.

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New technique for efficient fabrication of liquid crystal display devices with lowered cost

A team of scientists from CeNS, Bengaluru, an autonomous institute of DST conceptualized and implemented a novel way of employing a 2D materials to overcome the drawbacks of current methods.

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DST's green measures in new buildings of Technology Bhawan Campus take forward Special Swachhata Campaign 2.0

The new buildings constructed in the Department of Science and Technology campus have substantially reduced water and energy consumption from day one of occupancy.

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Cleanliness drive, revamped record room create a vibrant spacious DST campus

Swachhata drive was carried out at several sites by DST, its subordinate offices, and Autonomous Institutions under the cleanliness campaign during the Special Campaign 2.0 from 2nd October, 2022 to 31st October, 2022

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Young researchers selected for support under SERB-N-PDF to work in frontier areas of science and engineering

A total of 301 young researchers have been selected for support

under SERB-National Post-Doctoral Fellowship (N-PDF), to work for 2 years in frontier areas of science and engineering.

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Uttarakhand Governor felicitates astronomers, encourages young scientists at commemoration of 50 years of telescope

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Tree plantation for Special Campaign 2.0 at DST campus targets swachhata goals like prevention of air pollution, soil erosion & groundwater depletion

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NEW INITIATIVES

- ▶ Call for Proposals under Accelerated Development of Particularly Vulnerable Tribal Groups (PVTGs)

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INTERNATIONAL



1st ASEAN-India Start-up Festival 2022 bolstered ASEAN-India cooperation

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Indo-German Week of the Young Researchers 2022 inaugurated to foster collaboration among researchers

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First 11 awardees of WISER programme to promote participation of women in international R&D and industry projects facilitated

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KSCST implements S&T-based solutions to locale needs

The Karnataka State Council for Science and Technology (KSCST) has been pro-actively engaging itself to identify, propose and implement S&T-based solutions to locale-specific needs and problems through S&T interventions in education, water, energy, housing, geospatial technologies, and natural resource management.

Established in 1975 to utilize the scientific and technical expertise in the state to improve the living standards of people and to provide solutions through S&T interventions, the recent major initiatives of KSCST for societal benefits include geospatial action plan for informed decision-making, rainwater harvesting, rejuvenation of traditional water harvesting systems and Karnataka Geoportal, village mapping. They also include a faculty project program, patent cell, watershed management and digital mapping of heritage sites, renewable energy-related activities, implementation of a virtual classroom in high schools, and S & T outreach activities.

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