

STRIDES

Science, Technology, Research, Innovation & DEvelopments

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

EDITORIAL

FROM HEAD OF DST MEDIA CELL

The Department of Science and Technology kick-started the festive season with the celebration of science. Vigyan Utsav, an initiative by the Department of Science and Technology (DST), Ministry of Science and Technology was initiated in September 2021 as a yearlong 'One Month One Theme' programme to celebrate Azadi Ka Amrit Mahotsav. Science was also celebrated in the awards given to school students from remote corners of India for their innovative ideas for day to day problems they encountered. Around 3.92 lakh children from schools across India participated in this competitive MANAK (Million Minds Augmenting National Aspiration and Knowledge) awards.

Science was also celebrated as India researchers scored in scientific excellence in the success stories like the high-quality transparent ceramics for the first time which can be used in thermal imaging and personal protection equipment, developing analysis method that can keep the data volume of Aditya L1, India first solar mission low as also mimicked bee hives to develop noise control sheet absorber. Besides, India rising by two ranks to reach to the 46th rank in the global innovation index also ample cause for ushering in the festive mood.

DST also welcomed a bright new team of Policy Fellows to pick up the baton of formulating policies for the future of Science, Technology and Innovation. This batch will be assigned responsibility to work with various divisions of DST and take up Inter-ministerial and Centre-State coordination on STI. As the festive spirit uplifts us we will depend on the enthusiasm of the youth tuned by the experience of the old to graduate and surge ahead in the new normal.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF

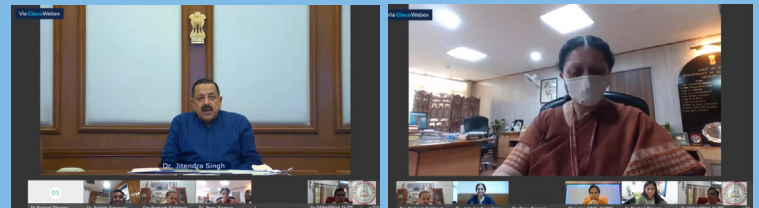
COVER STORY



DR. SINGH EMPHASISES ON ENCOURAGING INNOVATIVE APTITUDE IN SCHOOL CHILDREN AT INSPIRE AWARDS MANAK AWARDS

Union Minister Dr. Jitendra Singh stressed on encouraging the innovative aptitude in school children for scientific progress of New India and for realizing the Prime Minister's vision of Atmanirbhar Bharat.

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CENTRE-STATE CO-ORDINATION NEEDED TO IDENTIFY SCIENTIFIC TALENTS & START-UPS FOR WORKING TOWARDS ATMANIRBHAR BHARAT: DR JITENDRA SINGH

Union Minister Dr Jitendra Singh emphasized on the need to reach out to masses and identify young researchers and women scientists with potential along with entrepreneurs and startups that can bring new ideas to realization, through continued co-ordination between centre and states to achieve Prime Minister Narendra Modi's dream of "Atmanirbhar Bharat".

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From Head Of DST MEDIA CELL
Cover Story

Popular Science Stories
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INSIDE THE E-NEWSLETTER

International Stories
New Initiatives





High-quality transparent ceramics developed for the first time in India can be used in thermal imaging and personal protection equipment

Indian researchers have developed transparent ceramics, reaching theoretical transparency through a technique called colloidal processing followed by simultaneous application of temperature and pressure, for the first time in India.

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Low carbon bricks developed using construction and demolition waste for energy-efficient walling envelopes

Researchers have developed a technology to produce energy-efficient walling materials using construction and demolition (C&D) waste and alkali-activated binders. These are called low-C bricks, do not require high-temperature firing, and avoid the use of high-energy materials such as Portland cement.

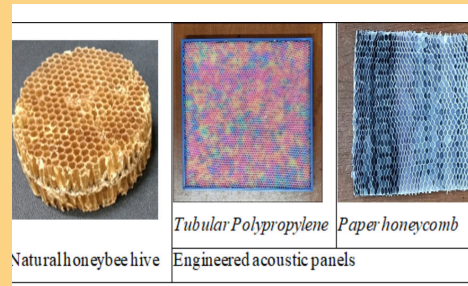
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New analysis method keeps the data volume of Aditya L1, India

first solar mission, low

A team of Indian Scientists and engineers found a unique way to keep the data volume of Aditya L1, India's first spacecraft mission to study the Sun low while also allowing the astronomers to derive the full Stokes polarisation measurements accurately.

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Noise Control Sheet Absorber developed by mimicking bee hives

An Indian researcher has fabricated paper honeycomb and stronger polymer honeycomb structure as sound-absorbing panels that dissipate acoustic energy to low-frequency ranges. The technology can be used in building acoustics and also as environmental noise control solution.

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Importance of sustainable use of resources from megastore of Himalaya stressed on Himalaya Diwas

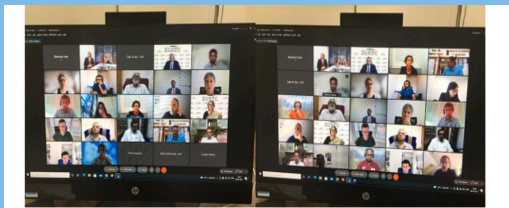
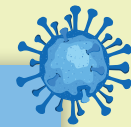
Senior scientists deliberated on various aspects of the Himalaya, its resources, hazards, and its importance in lectures organised on the occasion of the annual celebrations of 'Himalaya Diwas'.

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- ▶ Scientists peek into the Sun by estimating magnetic fields using radio observations
- ▶ Improved water management system developed can treat toxic textile effluents facilitating its reuse in households and industry
- ▶ Three new heatwave hotspots in India put large population at immediate health risk
- ▶ Chandigarh's first Pollen Calendar can help identify potential allergy triggers and guard sensitive people from exposure
- ▶ NATMO, the pioneer in thematic mapping services helps liberalize of geospatial data through Geo-portal Manchitran
- ▶ New high rate biomethanation technology for integrated treatment of sewage & organic solid waste useful for decentralized applications
- ▶ Impact of aerosols and clouds on solar energy generation leading to financial loss
- ▶ Experts discuss future local action needed to combat climate change
- ▶ Blue straggler - bigger and bluer star formed when one star eats up another
- ▶ DST Secretary Professor Ashutosh Sharma emphasised on promoting youth to leadership positions in his outgoing speechpai
- ▶ New low-cost sustainable technology can convert textile waste to plant probiotics
- ▶ Researchers discover three supermassive black holes merging together in our nearby universe
- ▶ New advanced oxidation technology can enhance waste water reuse at lower cost
- ▶ Manipur climate change media fellows encouraged to trigger local changes

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Pictures of the Inaugural session of the joint virtual workshop on artificial intelligence (AI) organized by Indo German Science and Technology Centre (IGSTC) together with the German Federal Ministry of Education and Research (BMBF) and the Department of Science and Technology (DST), India.

Scientific experts discuss artificial intelligence (AI) and its implementation at Indo German Workshop

Indian and German Scientific experts discussed five selected thematic areas of mutual interest related to artificial intelligence (AI) and its implementation at a joint virtual workshop.

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A Ladakh-based engineer has become the only Indian Honorary Member of the International Astronomical Union, along with ten others from around the world, joining a select list of 20 international experts.

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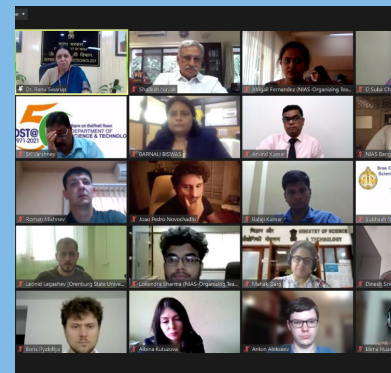
Winner building designs from U.S. and India Solar Decathlons using net-zero-energy-water showcased at virtual meeting

Best Practices from the Solar Design Challenges in the US and India were shared at a virtual meeting to recognize the efforts of students and industry in innovating climate change solutions in the building sector with building designs which utilised net-zero-energy-water-waste that are innovative, affordable, and climate-resilient.

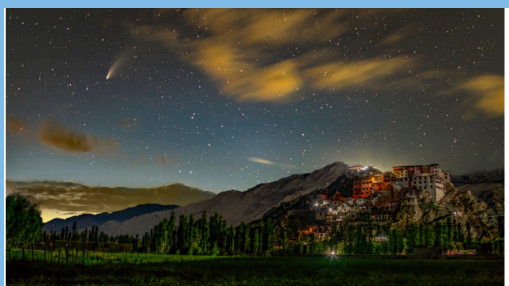
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and DBT, highlighted the importance of cooperation, collaboration and connections for science to move forward, at the BRICS Young Scientists Forum.

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The Himalayan Chandra Telescope and the GROWTH telescope in Hanle framed against the Milky Way and the planets Jupiter and Saturn. Credits: Dorje Angchuk



Comet NEOWISE over the Spituk monastery in Ladakh (July 2020). Credits: Dorje Angchuk

Ladakh based engineer first Indian to be inducted as Honorary Member of the International Astronomical Union

Importance of cooperation, collaboration & connections in science highlighted at BRICS Young Scientists Forum

Dr Renu Swarup, Secretary DST

NEW INITIATIVES

- ▶ Call for proposals under DST's Make in India aligned AMT program

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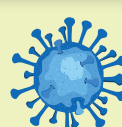
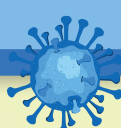
National Award for Science & Technology Communication 2021

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5th BRICS Call 2021 is now open.

Deadline 14 October 2021

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DST-STI-Policy Fellowship Programme

Department of Science and Technology (DST) is mandated to deliver public policy support for the promotion of Science, Technology & Innovation (STI) in the country. DST has been implementing a Policy Research Programme to build and strengthen an institutional mechanism for a robust evidence-driven STI policy system in India. Creating critical mass of policy professional (research scholars as well as practitioners) is one of the foremost important steps towards promoting the STI policy process and in this regards, DST has launched a

DST-STI-Policy Fellowship Programme during 2016. DST-STI-PFP provides scientists, engineers and policy enthusiasts, an opportunity to gain exposure from the close quarters of policy making and contribute their knowledge and analytical skills in the STI policy realm. These initiatives started delivering results in various forms of impactful engagements. During the last few years, the initiative has seen expansion in terms of a) number of fellows involved, b) research footprint/ topics covered, c) national and international engagement, and d) events and capacity building

initiatives. This resulted in providing knowledge support to DST and other policy making bodies in India and abroad also. Under this programme, the fellowship is offered in three different categories: Senior Policy Fellows (SPF), Postdoctoral Fellows (PDF) and Young Policy Professionals (YPP).

The 5th Cohort of DST-STI-PFP was launched during January 2021 inviting applications from potential candidates followed by the different steps of selection process. Finally 12 candidates have joined this flagship fellowship programme. The details are as under:

SENIOR POLICY FELLOWS



Dr. Saumya Pathak



Dr. Perminder Jit Kaur



Dr. Nidhi Singh

POST-DOCTORAL POLICY FELLOWS



Dr. Gautam Sharma



Dr. Hiren H L



Dr. Debanjana Dey



Dr. Avinash Kumar

YOUNG POLICY FELLOWS



Saikat Batabyal



Rohan Malhotra



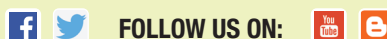
Ansel Elias Stanley



Arthita Batabyal



Rahul Bhimrao Patil



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This e-newsletter created by the DST communication team at Vigyan Prasar brings you brief information on scientific achievements and activities supported by DST. Each brief, links to detailed information on DST website. If there is any DST supported popular science event which requires wider outreach please share it with us. We also welcome your feedback/suggestions at

mediacell.dst@gmail.com

Editor-in-Chief: Dr Akhilesh Gupta

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