

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 Ministry of Science and Technology received a new lease of life with the decision that it would be directly monitored by the Hon'ble Prime Minister. The decision was consistent with the importance that Prime Minister's Office has assigned to Science, Technology, and Innovation all along as the keys for the development of the Nation.

Dr. Jitendra Singh, took over as Hon'ble Minister of State with independent charge of the Ministry of S&T. The first visit of the Minister to the office of the Department of Science and Technology (DST) was an occasion for the footfalls of the first new Ideas. The Union Minister said that the DST should make efforts to set up the first-of-its-kind National Science and Technology Research University.

The entire scientific fraternity would look forward to the leadership to effectively empower S&T to create profound knowledge, as well as innovative solutions for local, national, and global priority challenges.

Public-private partnerships saw an escalation as SERB-DST partnered with Intel India to launch the first-of-its-kind initiative to advance deep tech-based research in India at the National scale.

Meanwhile, new technologies graduated fast with the likes of automated train toilet sewerage disposal systems, which could be a cost-effective alternative to bio-toilets. At the same time, scientists continued exploring the unknown world of appearing and disappearing stars and tracking behavior of intestinal bacteria in response to chemical stimuli as DST took science, technology, and innovation to new heights in its 50th year while navigating COVID 19 challenges.

—EDITOR-IN-CHIEF

COVER STORY



DR JITENDRA SINGH TAKES OVER AS MINISTER OF STATE (INDEPENDENT CHARGE) OF SCIENCE & TECHNOLOGY AND EARTH SCIENCES

Dr Jitendra Singh, has taken over as the Minister of State (Independent Charge) for Science and Technology and Earth Sciences as the Ministries were included under the charge of Office of the Prime Minister. He is a physician known for his work on diabetes and endocrinology.

He has been a professor, a consultant, clinical practitioner, author of eight books, and a newspaper columnist as also the ex-chairman for the National Scientific Committee Diabetes and the Research Society for the Study of Diabetes in India.

With an M.B.B.S. degree from Stanley Medical College, Chennai and M.D. from Government Medical College, Jammu, Dr Singh has authored several books including Monographs on Diabetes and World Book Fair best seller, "Diabetes Made Easy". He is also the author of chapters on diabetes in text books for Post Graduate Course (Medicine) and runs a syndicated weekly column "Tales of Travesty", popularly read and regularly published for three decades. He is Minister of State for Prime Minister's Office; Personnel, Public Grievances and Pensions; Department of Atomic Energy and Department of Space.

UNION MINISTER DR. JITENDRA SINGH ASKS DST TO SET UP A WORLD CLASS INDIA'S FIRST NATIONAL S&T RESEARCH UNIVERSITY

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▶ From Head Of DST MEDIA CELL
Cover Story

Popular Science Stories
COVID News Highlights

INSIDE THE E-NEWSLETTER

International Stories
New Initiatives

Meet the Scientist





Automated train toilet sewerage disposal system could be a cost-effective alternative to bio-toilets

An automated technology for collection of toilet waste which is easy to maintain and 7 times cheaper alternative to the bio-toilets, developed by an Indian scientist, can be used to maintain the toilet system of the Indian Railways.

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SERB-DST partners with Intel India to launch first-of-its-kind initiative to advance deep tech-based research in India

The Indian research community will soon be able to pursue industry-relevant research opportunities in the areas of deep technologies that are novel, transformative, and can have a ground-breaking impact on a national scale.

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Astronomers find a group of appearing and disappearing stars

An international collaboration of astronomers has identified a curious occurrence of nine stars like objects that appeared and vanished in a small region within half an hour in an old photographic plate.

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Scientists track behavior of intestinal bacteria in response to chemical stimuli

The mystery of how does the bacterial resident of the human intestine, the E-coli move towards or away from chemicals---a phenomenon called chemotaxis, has intrigued scientists for a long time. E.coli bacteria show chemotaxis in response to different chemicals present in human gastrointestinal tract.

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Indian stem cell & developmental biologist part of WHO advisory committee on human genome editing

Indian stem cell and developmental biologist Prof. Maneesha S Inamdar has been part of the WHO Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing, which released two new companion reports providing the first global recommendations to help ensure that human genome editing is used for public health, with an emphasis on safety, effectiveness, and ethics.

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National hackathon organised by IIT Madras & Sony India encourages citizens to come up with solutions using IoT Sensor Board

Citizens across the country can now participate in solving India-specific problems of societal interest using IoT Sensor Board through a National hackathon called 'SAMVEDAN 2021 - Sensing Solutions for Bharat'.

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▶ Rare superluminous supernova shining with borrowed energy source spotted with the 3.6m DOT facility

▶ Inspire faculty fellow's study on metabolic reprogramming and psychosocial stress correlative with breast cancer-related fatigue

▶ INST steering ahead with nanoscience and technology-based breakthroughs

▶ DST INSPIRE fellow developing biomaterials for bone tissue regeneration

▶ Wealth from Waste: Spent catalyst from industry can be an efficient catalyst for batteries

▶ Supervised mindfulness meditation benefits patients with Mild Cognitive Impairment & early Alzheimers disease

▶ Excess irrigation over northern India shifting monsoons towards northwest risking agriculture

▶ Role of women in leading scientific research increasing

▶ Role of data in preserving the Himalayan Natural Resource highlighted at WIHG 54th Foundation day celebration

▶ Rebel behaviour of highest energy afterglow of a Gamma-Ray Burst detected in space may help probe stellar evolution

▶ Black carbon could lead to premature mortality: study

▶ Study indicates association of cloud bursts with forest fires

▶ Electrically configured nanochannels eliminating unwanted energy can revolutionize on-chip data communication and processing in

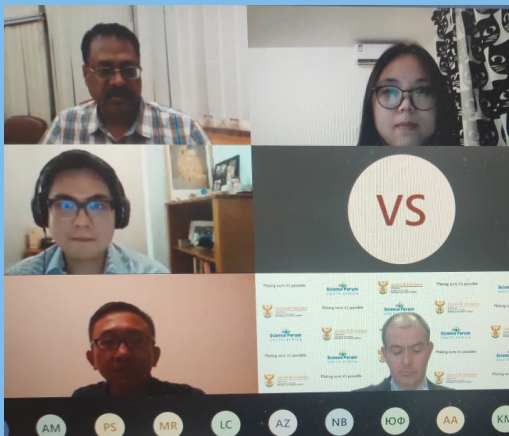
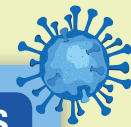
▶ More than 40 percent of Kumaun Himalaya is susceptible to permanent displacement in case of major earthquake

▶ Cost-effective, bio-compatible nanogenerators can harvest electricity from vibrations for optoelectronics, self-powered devices

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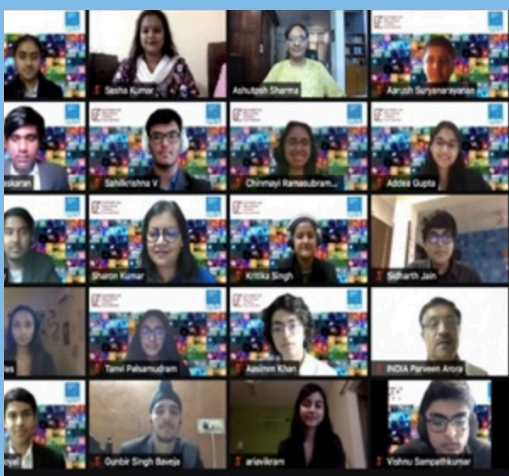
INTERNATIONAL STORIES



BRICS countries agree to STI led BRICS Innovation Cooperation Action Plan proposed by India

All BRICS countries have agreed to the STI-led BRICS Innovation Cooperation Action Plan (2021-24) proposed by India during 12th Meeting of BRICS S&T Steering Committee. Indian had proposed the plan to facilitate sharing of experiences of each other's innovation ecosystem and networking of innovators and entrepreneurs.

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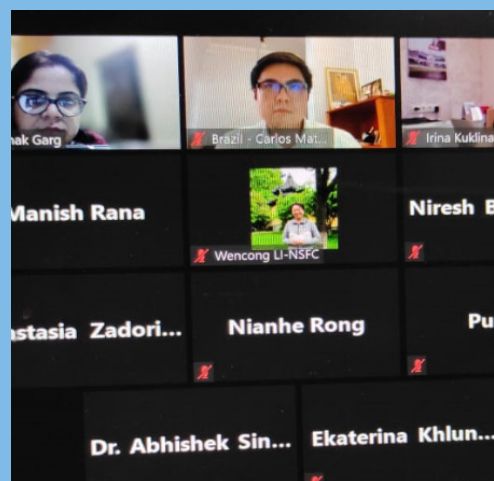


Team India 2021 wins 9 Grand

Awards and 8 Special Awards at Regeneron International Science and Engineering Fair (ISEF)

Team India 2021 won 9 Grand Awards and 8 Special Awards at Regeneron International Science and Engineering Fair (ISEF) for innovations ranging from identification of genes responsible that resist abiotic stress in species to augmented reality smart stethoscope that allows non-medicals to perform accurate pulmonary screening. These innovations were by young students who received the awards and brought accolades home.

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BRICS STI Funding focuses on Interdisciplinary Research R&D'

Government funding agencies from BRICS countries discussed the areas they would focus their support in the next round of invitations for proposals.

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COVID NEWS HIGHLIGHTS



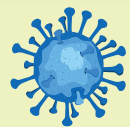
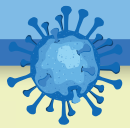
Robust, mobile OxyJani can cater to acute & chronic oxygen needs at grassroots level

Indian researchers have designed a robust, mobile group oxygen concentrator that can be used in rural settings and also be rapidly deployed in emergencies in any location.

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▶ NEW INITIATIVES

- ▶ WTI Call 2021 on Desalination Technologies [Read More](#)
- ▶ DST-JSPS joint call for proposals [Read More](#)
- ▶ BRICS Young Scientist Conclave 2021 India [Read More](#)



MEET THE SCIENTIST

DR. AKHILESH GUPTA



New buildings of the Department of Science & Technology

Senior Advisor, DST

Dr Akhilesh Gupta, the first Senior Adviser in the Department of Science and Technology (DST), Ministry of Science and Technology, GoI, is one of the leading experts in tropical cyclone prediction, weather forecasting, location-specific weather forecasts, including those for the mountainous regions and climate change. He is the key contributor of India's new Science, Technology and Innovation Policy 2021, which will be released shortly and is also known for his contributions in the higher education sector.

Having led the forecasting team at the National Centre for Medium-Range Weather Forecasting (NCMRWF), Dr Gupta is best known for exceptionally high accuracy in weather forecasts for the Mount Everest region, for which he received appreciation of Hon'ble President of India in the year 2003.

An MSc of Lucknow University and Doctorate in Atmospheric Sciences from IIT, Delhi, he worked in the India Meteorological Department and the NCMRWF, both then under the DST and was also the Secretary to University Grants Commission (UGC). He became Adviser / Scientist-G in 2006.

Dr Gupta heads the Policy Coordination and Programme Management Division and has been the head of Climate Change Programme at DST, coordinating two National Missions on Climate Change. He has worked as Adviser to the Union Minister for Science and Technology and Earth Sciences and has been a member of National Coordination Team, which drafted India's National Action Plan on Climate Change.

A Fellow of Indian National Academy of Engineering (FNAE), Indian Meteorological Society (FIMS) and an Honorary Professor of Amity University Rajasthan, he received D.Lit (Honoris Causa) from Jagatguru Rambhadracharya handicapped University, Chitrakut. He has been making significant contributions to the S&T evolution of the country through years of administering it under various capacities.



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