DST

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STRIDES

Science, Technology, Research, Innovation & DEvelopmentS

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

EDITORIAL

FROM VIGYAN PRASAR DIRECTOR'S DESK

The Festive Season has started in India. As Kolkata brings down its' curtain on the Durga Puja, it is dressing up once more for one of the largest carnivals of science – The India International Science Festival (IISF). It will bring together around 12000 people from different fields and 700 experts together to celebrate science. IISF brings you a bunch of myriad events related to science ranging from Global Indian scientists and Technocrats Meet, Young Scientists' Conference, Science Literature Festival 'Vaigyanika', Science Media Conclave, Women Scientists' and Entrepreneurs' Conclave to Students Science Village that brings school students from each Lok Sabha Constituency in India and much more.

In tune with this major science event, the October issue of E-Newsletter STRIDES also brings you a bunch of varied articles ranging from clean energy, farmer's techniques of protecting traditional rice varieties to model for energy conservation at airports and a feature on JNCASR, the Indian Institute that ranked seventh among worldwide academic institutions in 2019. It is perhaps the best time to recharge in science.

—NAKUL PASASHAR, EDITOR-IN-CHIEF

COVER STORY

INDIA HAS SIGNIFICANT CONTRIBUTIONS TO CERN: DG CERN AT VIGYAN SAMAGAM

The first women Director General of CERN, Dr. Fabiola Gianotti visited Vigyan Samagam at Visvesvaraya Industrial and Technological Museum, Bangalore. Her visit was looked upon as a great opportunity to boost India's collaborations with CERN.

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INSIDE THE E-NEWSLETTER

From Vigyan Prasar Director's Desk
Cover Story
Latest News Highlights
Forthcoming Events
Popular Science Stories
DST Overseas
Meet DST Secretary
Featured Institution

NEWS HIGHLIGHTS

IISF drives movement to celebrate science

IISF is a festival to celebrate India's scientific & technological advancements with students, innovators, craftsmen, farmers, scientists and technocrats from India and abroad. IISF 2019 expects to host a gathering of approximately 12,000 participants from India and abroad.

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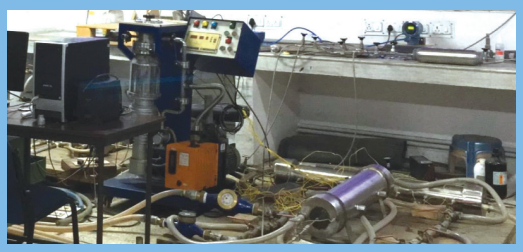

DST set up clean energy knowledge networks focusing renewable targets

DST is gearing up its forces towards India's target of adding 175 GW of renewable energy production by 2022, by harnessing state-of-art research led innovative and cost effective materials, technologies and processes for clean energy advancement in the country.

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National Centre for Clean Coal Research & Development inaugurated at IISc, Bengaluru

Government of India through Department of Science & Technology has set up the National Centre for Clean Coal Research and Development (NCCCR&D) as a national level consortium on clean coal R&D, led by the Indian Institute of Science (IISc)-Bengaluru.

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Farmers turn saviours of traditional rice varieties

Known for its rich variety of rice, Wayanad today is admired for its farming community who has worked for conserving traditional varieties of rice through Rice Seed Village programme of the Community Agro-biodiversity Centre (CAbC) of MS Swaminathan Research Foundation (MSSRF), Wayanad, Kerala.

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DST promotes better science teaching in multiple ways

Aware of the role teachers play in creation of human resources in science, DST is committed to improve the quality of science teaching in the country by exposing teachers at different levels to the best science facilities in the country and by encouraging innovative methods of teaching.

FORTHCOMING EVENTS

INDIA INTERNATIONAL SCIENCE FESTIVAL 2019

India International Science Festival (IISF) 2019

5-8 November, 2019, Kolkata

The aim is to engage public with science and celebrate the joy of science and show the ways how science, technology, engineering and mathematics (STEM) provide solutions to improve our lives.

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POPULAR SCIENCE STORIES

Microbial Route to Enhancing Coalbed Methane Recovery

Coalbed methane (CBM) is an unconventional form of natural gas found in coal deposits or coal seams and now considered an alternative source for augmenting India's energy resource. CBM is formed during transformation of plant material into coal. It is considered a valuable energy resource. Scientists say, microbial processes may be one of the promising approaches to generate biogenic methane. Methane generating bacteria (methanogens) can act on coal seams to produce biogas mainly comprising methane and carbon dioxide.

ONGC Energy Centre (OEC) had initiated R&D work on biogenic methane in collaboration with TERI, for development of microbial processes to enhance the production of CBM wells. Field tests of the developed technology were carried out successfully in two depleted CBM wells in Jharia field in Jharkhand in collaboration with Bokaro Asset, ONGC, where 2 to 4-fold increase in gas production was observed.

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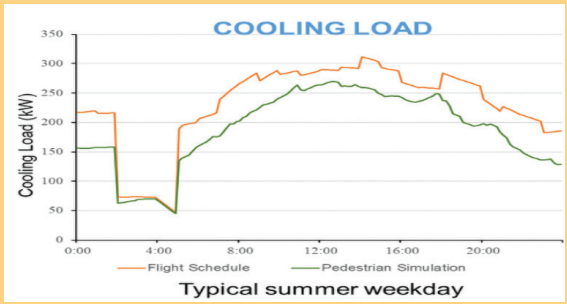

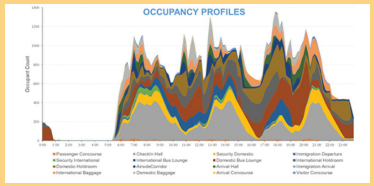

New model for minimizing air-conditioning demand at airports in India

The thermal demands of India's airport terminals can now be accurately determined using a model developed by the Indian Institute of Technology – Roorkee and the capability is expected to drastically reduce the costs of maintaining optimum temperatures within airport buildings for passenger comfort.

The new model, developed by combining an energy simulation with an agent based model (ABM)—that determines heat generated by passengers in particular areas of a terminal—is based on a studies conducted at several airports by IIT- Roorkee.

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DST OVERSEAS

The 6th Joint Working Group Meeting (JWG) on S&T between India and Myanmar was held on September 17, 2019 at New Delhi. Both sides agreed to strengthen cooperation in the area of Food Safety, Material Science, Bamboo Technologies and Information Technology through focused R&D joint projects. India and Myanmar will also work together for human capacity building through training and fellowships for scientists and will develop mechanisms to deploy affordable technologies to improve lives of people in their societies.

The Indian delegation was led by Dr S. K. Varshney, Adviser & Head of International Bilateral Cooperation of the Department of Science and Technology (DST) and the Myanmar delegation was led by Dr Aye Myint, Director General, Department of Technical and Vocational Education and Training, Ministry of Education, Myanmar.

NEW INITIATIVES

- Energy Storage Solutions (MICall19) - Joint Call for Proposals
- Indo- Sri Lanka Joint Research Programme - Call for Proposals
- Indo-EU Smart and Integrated Local Energy Systems – Joint Call for Proposals
- Technology Interventions for Disabled and Elderly (TIDE) - Call for Proposals

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MEET DST SECRETARY

PROFESSOR ASHUTOSH SHARMA

Professor Ashutosh Sharma has been Secretary, Department of Science and Technology, Government of India since January 09, 2015. He was a professor (1997-), an Institute Chair Professor (2007-) and the Head (2003-05) of Chemical Engineering, and the founding Coordinator of Nanosciences Center and Advanced Imaging Center at the Indian Institute of Technology at Kanpur. Dr Sharma received his PhD from the State University of New York at Buffalo (SUNYAB; 1988), his MS from the Pennsylvania State University (1984) and B.Tech. from IIT Kanpur (1982).

His research contributions are highly interdisciplinary, spanning a wide range in nanotechnology; carbon based nanocomposites and MEMS/NEMS in energy, health and environment; functional interfaces; micro/nano-mechanics of soft matter; nano-patterning and nanofabrication; colloid and interfacial engineering; biomaterials & biosurfaces; adhesion and thin polymer films. He is a recipient of several honors and awards including the inaugural Infosys Prize and Bhatnagar Prize.

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FEATURED INSTITUTION

JNCASR: A stellar institution where materials evolve

The Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), the only Indian institution to make it to the 2019 Nature Index Annual Tables, and ranked seventh among worldwide academic institutions in 2019, is silently transforming the materials of the future.

Groups of materials scientists including chemists and physicists there, are at play, immersed in their eureka moments of finding new materials that are either more efficient catalysts, better semi conductors, better materials to store energy, bio-molecules, nano structured materials and so on.

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