

STRIDES

Science, Technology, Research, Innovation & DEvelopmentS

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

EDITORIAL

FROM HEAD OF DST MEDIA CELL

Collaboration is the way forward for science, especially to reach the benefits to society. Evolution of collaborations needs a spirit of working together, achieving scientific and national heights together. That collective spirit received a boost when the scientific fraternity across the country came together for the first time to render the National anthem in a combined physical and virtual programme.

Scientists from 6 scientific departments celebrated the Azadi ka Amrit Mahotsav by singing the National Anthem together on the occasion of the 75th year of India's Independence.

It is this spirit of partnership that brings the benefits of science to people through efforts like the signing of the know-how transfer Agreement by ARCI of battery-grade Cathode Material technology for Li-ion batteries with Allox Minerals reflected in this newsletter. Exchange of scientific excellence is also a major gain of collaborations like the research by doctors and scientists from several BRICS countries to assess the intersection of the COVID 19 and Tuberculosis pandemics highlighted here.

This newsletter also features the National Atlas & Thematic Mapping Organisation (NATMO), which has created a milestone in terms of making geospatial data freely available to the citizens and organisations across India and opening up prospects for multifarious future partnerships.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF

COVER STORY



SCIENTIFIC FRATERNITY IN THE COUNTRY CELEBRATED 75TH YEAR OF INDIA'S INDEPENDENCE WITH THE RENDERING OF THE NATIONAL ANTHEM

A DST-CSIR-DBT-MoES-DAE joint choir led the rendering of the National Anthem at the podium in MoES Mahika Hall. All senior scientists (Scientist F and above) of the 6 departments and some eminent scientists joined the rendering of the National Anthem at the hall while all other scientists of these 6 departments and their Autonomous Institutions and Laboratories joined virtually. Nearly 800 scientists participated in person and virtually in the event.

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DR RENU SWARUP, SECRETARY DEPARTMENT OF BIOTECHNOLOGY (DBT) WAS GIVEN ADDITIONAL CHARGE OF DEPARTMENT OF SCIENCE AND TECHNOLOGY (DST) AND BECAME THE FIRST WOMAN SECRETARY OF DST.

From Head Of DST MEDIA CELL
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Fig. 1 Factory made EPS core panel and welded wire mesh reinforcement

Fig. 2 Building skeleton made of factory-made EPS core panels

Multi-Storeys constructed with thermocol could be the future earthquake-resistant buildings

Thermocol could be the material of the future for construction of earthquake-resistant buildings, with thermal insulation and could also save energy required to develop construction materials.

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Increasing temperature and low winter precipitation are causing retreat of glaciers in Zaskar Valley, Ladakh

The Pensilungpa Glacier (PG), located in Zaskar, Ladakh, is retreating, and a recent study has attributed the retreat to an increase in the temperature and decrease in precipitation during winters.

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Traditional pineapple agroforestry systems can address twin challenges of climate change and biodiversity loss

Pineapple-based agroforestry, traditionally practiced by ethnic “Hmar” tribe in southern Assam, can be a sustainable alternative to jhum cultivation for the North East India.

This traditional practice can provide twin solutions for climate change and biodiversity loss, according to a new study.

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Online applications inaugurated making geospatial data collected by government freely & easily available to citizens and organizations in India

Three online applications --- SOI GEO Spatial Data Dissemination Portal, SOI's SARTHI: WEB GIS application and MANCHITRAN Enterprise Geoportal of NATMO were inaugurated, making geospatial data collected by government freely and easily available to citizens and organizations in India for the first time.

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Vice President unveils Innovation & Development Centre at JNCASR

The foundation stone Innovation & Development Centre of JNCASR, which aims to become a major facilitator in taking science to society and meeting the Country's missions of 'Make in India' and 'Aatmanirbhar Bharat', was unveiled by the Vice President of India Shri M. Venkaiah Naidu.

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▶ Non-invasive, easy to administer, cost-effective bio-nanocarrier can enhance oral bioavailability and efficacy of Visceral leishmaniasis therapy

▶ ARCI signs know-how transfer Agreement with Allox Minerals for battery-grade Cathode Material technology for Li-ion batteries

▶ Electric tuning of magnetism in some exotic states of matter can lead to bizarre optical effects

▶ Low-cost flexible tactile sensors having robotics and bio-medical applications developed

▶ India is well on the path towards WHO recommended doctor to population ratio: Dr Vinod Paul

▶ Carbon-based non-toxic and reusable wrapper to increase shelf life of fruits

▶ Experts underline need for flexibility in new education system to create manpower in sync with government programmes

▶ India first biobank for heart failure research inaugurated at SCTIMST

▶ Advanced wound dressing material based on seaweed agar can treat diabetic wounds and manage chronic ones at competitive cost

▶ Scientists discuss application of nanotechnology in quantum devices, quantum materials, energy conversion & storage at National Conference

▶ Opportune moment for India to pole-vault in every sector with science, technology, and innovation: DST Secretary

▶ New method of producing hydrogen from water using magnets shows energy-efficient route to manufacturing of the fuel

▶ INSPIRE faculty fellow develops human-based models to study neurodevelopmental disorders such as autism

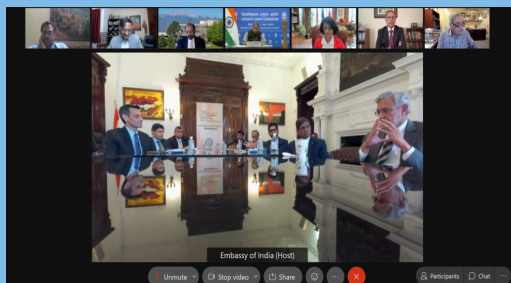
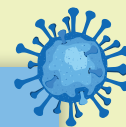
▶ New technology can enhance solubility of poorly water-soluble multi-herbal extracts using nanoencapsulation at room temperature

▶ IIT Roorkee launches seven new academic programmes to cater to rising demand for new-age technologies

▶ AI is creating new opportunities which could not be achieved by traditional technology: Experts

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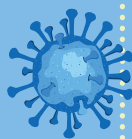




DST Secretary stresses on role of diaspora in connecting with Indian academia & Industry at interaction with Indian origin Presidents of US-based Universities

Secretary, DST, Professor Ashutosh Sharma stressed on the role of the Indian diaspora and the importance of the role they could play in connecting with Indian academia and Industry during his recent interaction with several Indian origin Presidents of US-based Universities.

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New opportunity initiated for early career researchers to obtain doctoral degrees through Indo-German joint research programme

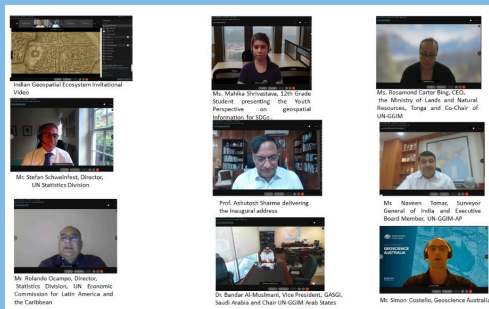
A new programme for the exchange of researchers and knowledge through joint collaborative projects between Indian and German researchers has been formalised with the signing of implementation guidelines between the two countries.

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Global Geospatial Information Community sensitized about UNWGIC to be organized in India

The Global Geospatial Information Community was sensitized about the second United Nations World Geospatial Information Congress (UNWGIC) to be organized by India in October next year, and their inputs are taken at a curtain-raiser held on 16 August 2021.

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COVID NEWS HIGHLIGHTS

Brazil, Russia, India, and South Africa to study the intersection of COVID-19 and Tuberculosis Pandemics

A consortium of doctors and researchers from India, Brazil, Russia, and South Africa have partnered to conduct a study on the epidemiological impact and intersection of the COVID 19 and Tuberculosis pandemics in these countries.

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Scientists from four BRICS countries to carry out genomic sequencing and mathematical modelling of the

COVID-19 pandemic

Indian Scientists, in partnership with Scientists from China, Russia and Brazil, will carry out genomic sequencing of SARS-CoV-2 and studies on the epidemiology and mathematical modelling of the COVID-19 pandemic.

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Scientists join hands targeting to synthesize compounds to inhibit maturation & propagation of COVID 19 virus

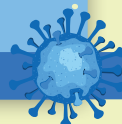
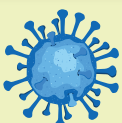
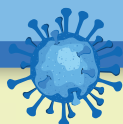
Scientists from India, Russia, Brazil, and South Africa will work together to repurpose, validate and synthesise lead compounds against main protease and RNA replicase, the enzyme that catalyzes the replication of RNA, of SARS-CoV-2.

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NEW INITIATIVES

- ▶ Call for Proposals under Science Technology and Innovation (STI) Hubs for Development of Scheduled Caste (SC) and Scheduled Tribe (ST) Communities

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MEET THE SCIENTIST

DR. TAPATI BANERJEE



The first woman Director of National Atlas & Thematic Mapping Organisation (NATMO), is known for her interdisciplinary research in geospatial planning including landscape-soil-land use research and planning, agricultural disaster management, livelihood assessment, urban utility mapping, women empowerment scenario analysis, historical-cultural-archaeological research and so on.

Her leadership in academic research, technological skills combined with planning ability in the current physical, environmental, social, economic, cultural context at different scales of development has helped steer the organisation. A NATMO team led by Dr. Banerjee conducted the real time scenario analysis of COVID 19 pandemic spread in India. The organisation also received the National Award from the Hon'ble Prime Minister of India for Science & Technology intervention in empowering the visually challenged under Dr Banerjee's stewardship.

A National Scholar of 1984-85, Dr Banerjee's professional journey started as a scientist in Indian Council of Agricultural Research (ICAR). She served different institutes of ICAR like National Centre for Integrated Pest Management, National Bureau of Soil Survey and Land Use Planning. Before joining in NATMO, she became Principal Scientist in ICAR. She is also a recipient of UNESCO Excellence and Leadership Award from UNESCO for Peace.

FEATURED INSTITUTION



NATMO, the pioneer in thematic mapping services helps liberalize of geo-spatial data through geoportal Manchitran

A new milestone was created in terms of making geospatial data collected by the government freely available to the citizens and organisations across India when the National Atlas & Thematic Mapping Organisation (NATMO) launched its Geo-portal 'Manchitran'.

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