

Government of India  
Ministry of Science and Technology  
Department of Science and Technology  
(CDN Section)

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Technology Bhawan,  
New Mehrauli Road  
New Delhi-110016  
Dated: 12.09.2022

**OFFICE MEMORANDUM**

Subject: Monthly Summary to the Cabinet for the month of August, 2022.

The undersigned is directed to enclose herewith a copy of the Monthly Summary of important policy decisions taken and major achievements of the Department of Science & Technology for the month ending 31.08.2022 for information.

2. This has already been approved by Secretary, DST.

Signed by Pulok Sengupta

Date: 12-09-2022 17:39:31

(Pulok Sen Gupta)

Reason: Approved

Under Secretary to the Govt. of India

To,

All Members of the Council of Ministers (as per Annexure-I)

Copy with enclosures, forwarded to:-

- i. Vice Chairman, NITI Aayog, NITI Bhawan, New Delhi. (vch-niti@gov.in)
- ii. The Chairman, Union Public Service Commission (chairman-upsc@gov.in)
- iii. Chief Executive Officer, NITIAayog, NITI Bhawan, New Delhi (ceo-niti@gov.in)
- iv. The Principal Secretary to the Prime Minister, Prime Minister Office, South Block, ND (pkmishra.pmo@gov.in)
- v. All members of NITI Aayog, NITI Bhawan, New Delhi. (vk.saraswat@nic.in, rc.niti@gov.in, vinodk.paul@gov.in)
- vi. Secretary to the President of India. (secy.president@rb.nic.in)
- vii. Secretary to the Vice-President of India. (secyvp@nic.in)
- viii. Principal Scientific Advisor to the Govt. of India. (vijayraghavan@gov.in)
- ix. All Secretaries to the Government of India (secy-goi@lsmgr.nic.in)
- x. The Principal Director General, Press Information Bureau, Ministry of Information and Broadcasting. (pdg-pib@nic.in)
- xi. The Director, Cabinet Secretariat, New Delhi. (cabinet@nic.in)
- xii. Dr. Rabindra Kumar Panigrahy, Sc. 'E', DST for uploading the Monthly Summary on DST's website. (rabindra.p@gov.in)
- xiii. PSO to Secretary, DST. (anuj.tripathi@nic.in)
- xiv. AD (OL), DST for Hindi Translation (kn.singh65@gov.in)

**Department of Science & Technology**  
**Monthly Report**  
**August, 2022**

**I. Important policy decisions taken and major achievements during the month:**

**A. Science for society**

1. Crude drug authentication service rendered to academia and industry by MACS - Agharkar Research Institute (ARI), Pune.
2. National Innovation Foundation (NIF), Ahmedabad facilitated granting of 07 patents on A Crop Harvesting Agricultural Equipment; Multipurpose Kitchen Implements; Areca Nut Cutting Machine; Manual Sticks Making Machine; Double Shuttle Loom; Dibble Assembly And A Method Of Operation Thereof; and Herbal composition for treatment of high blood glucose levels in metabolic diseases and process of preparing the same.
3. On INSPIRE Awards – MANAK, the 9th NLEPC (National Level Exhibition and Virtual Competition) was announced and is scheduled to be held in New Delhi from 14th – 16th September, 2022 wherein top 60 student innovators will be identified and suitably recognized. In addition, for FY 2022-23, the awareness campaigns are being organized in different parts of the country plus the DLEPC's (38 in the State of Bihar), SLEPC's (Lakshadweep) were organized.
4. Public Health Update on Monkey Pox was conducted at Sree Chitra Tirunal Institute for Medical Sciences and Technology (*SCTIMST*). Around 50 academics and 13 online attendants actively participated in the deliberations.
5. The year-long program “**Vigyan Ustav**” which was inaugurated by the Hon’ble Minister of State (Independence Charge) of the Ministry of Science & Technology, Dr. Jitendra Singh on 2<sup>nd</sup> September 2021 concluded on 31<sup>st</sup> August 2022. Under the programme, 265 sessions were organized by the State S&T Councils to depict the entire STI ecosystem through the twelve identified themes. The programme reached out to more than 6 lakh stakeholders through various platforms.

## **B. Technology Development**

1. International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad developed indigenous automated mini bar coating equipment (120mm x 120mm) for photovoltaic and other coating applications.
2. Blending of 40 Kg Lithium Iron Phosphate (LFP) raw materials was completed by ARCI and (15 Kg batch) milling of Carbon-LFP is being carried out at M/s Innomet Advanced materials Pvt Ltd, for the fabrication of Cylindrical LFP batteries.
3. Startups supported under National Mission -Interdisciplinary Cyber Physical Systems (NM-ICPS) from 5 TIHs established at IIT Kanpur, IIT Madras, IIT Mandi, IIT Ropar & IIT ISM Dhanbad showcased their technologies/products during “DST’s Startup Utsav” Event on August 12, 2022 at New Delhi.

## **C. International Cooperation**

1. **Meeting of Scientific Secretariat with the Director, NFS:** Dr. Sethuraman Panchanathan, Director, National Science Foundation (NSF), USA held discussions with the Principal Scientific Adviser as well as Secretaries of DST, DBT, MOES and DG CSIR on 8th August, 2022 in New Delhi.
2. DST-NSF (National Science Foundation, US) Joint R&D Projects Kick-off Workshop was organized on August 8-9, 2022 at IIT Delhi, with NSF & 6 TIHs (TIH Foundation for IoT and IoE at IIT Bombay, I-DAPT Hub Foundation at IIT (BHU) Varanasi, I-Hub Foundation for Cobotics (IHFC) at IIT Delhi, iHub Drishti at IIT Jodhpur, TIH IDEAS at ISI Kolkata and IITM Pravartak Technologies Foundation at IIT Madras) under NM-ICPS. 35 joint projects are to be taken up in critical and emerging technologies.

## **D. Human Capacity Building**

1. A 2 days Capacity Building Training Program for the official and staff of Sikkim State Climate Change Cell (SSCCC), Remote Sensing Division of Science and Technology Department was undertaken on the use of Compact Hydrographic Drone (Remotely Controlled Dinghy Boat) with GPS and Ultrasonic depth sensor at Madhya Bharat Dam Site near Ranipool East Sikkim.
2. **Innovation in Science Pursuit for Inspired Research (INSPIRE) Scheme**  
*INSPIRE Scholarship:*

- A Meeting between **INSPIRE Division** and **10th and 12th Central and State Boards Chairman and Secretaries** under the **Chairmanship of Secretary, DST, New Delhi** was held on **8<sup>th</sup> August 2022** in **virtual mode**. This meeting was conducted for further improvement and smooth implementation of two Components of INSPIRE Program, i.e. **INSPIRE Scholarship for Higher Education (SHE)** and **INSPIRE Internship**.
- **24 SHE Scholars** received their scholarship amounting to **₹4,80,000/-** for pursuing **B.Sc./M.Sc. Degree course in basic and natural sciences (Direct Mode)**.
- **15 SHE Scholars** received their scholarship amounting to **₹9,00,000/-** for pursuing **B.Sc./M.Sc. Degree course in basic and natural sciences (Institutional Mode)**.

***INSPIRE Fellowship:***

- **Call of proposal** from the identified Institutions/Research Laboratories for **DST-Research Exposure cum Training Programme for Students from North-Eastern States and UTs of Jammu and Kashmir and Ladakh** under INSPIRE Scheme was released on the **INSPIRE Web-portal**.
- **INSPIRE Fellowship-2020 & 2021** Level two evaluation result was declared and **502 INSPIRE Fellowship** applicants were offered INSPIRE Fellowship for pursuing Doctoral degree in the domain areas of Science and Technology.
- Total **40** INSPIRE Fellows were upgraded from **Junior Research Fellow (JRF) to Senior Research Fellow (SRF)**.
- **94** INSPIRE Fellows received INSPIRE Fellowship (Total Amount **₹2,68,21,526/-**) upon final selection

***INSPIRE Faculty Fellowship:***

- **57** INSPIRE Faculty Fellows received Faculty Fellowship (Total Amount **₹7,34,00,000/-**) for continuing their post-doctoral program.

**E. Scientific Research**

1. The Science and Engineering Research Board (SERB) has been contemplating to institute a Scheme to boost research and development capabilities at the state university and college level by supporting new ideas and human resources, and by fostering collaborations for high-end research. A Scheme titled “SERB- SURE (State University Research

Excellence)” has been designed exclusively for scientists belonging to state universities and colleges including private academic institutions, was launched. The call for proposal is open now and researchers from among state/private universities / colleges can submit their applications through SERB online portal [www.serbonline.in](http://www.serbonline.in).

2. Active particles refer to self-propelled agents which can generate persistent motion by extracting energy from their surroundings at an individual level. Theoretical attempts to understand active motion is an active area of research. Theoreticians at the Raman Research Institute (RRI), Bangalore have developed a universal framework for studying the long-time behaviour for a class of active particle dynamics and have illustrated it with a variety of examples. They have shown that the position distribution generically satisfies the diffusion equation at the leading order whereas the sub-leading contributions, at each order, satisfies an inhomogeneous diffusion equation. This is an important area of study since, in nature, such active motion is exhibited by a wide variety of systems: living systems ranging from bacteria at the microscopic scale to the flocking of birds and fish schools at the macroscopic scale as well as in artificial systems including Janusparticles and granular media.
3. A scientist from Aryabhata Research Institute of Observational Sciences (ARIES), Nainital has given plausible solution to the mysterious circles of radio emission detected in space and suggested that these may be coming from supernova explosions or massive black holes.
4. Legumes are important food crops and understanding their survival in globally warm future climate is crucial. Recently, Birbal Sahni Institute of Palaeo Sciences (BSIP), Lucknow have discovered a legume fruit from ~56 million years old sediments of Meghalaya. This finding is important in understanding the evolutionary ecology of legumes when Earth was much warmer and CO<sub>2</sub> concentration was >1000 ppm than present.
5. A web based tool developed by Bose Institute, Kolkata that uses regression models to score CT scan reports from only 7 input features and predict risk of pneumonia. The automated determination of CT severity score can reduce the work load of radiologists significantly. It can be used by doctors for early detection of patients with high risk in order to offer better therapeutics. It can also be used by pneumonia risk patients during

the second wave of the pandemic and COVID-recovered patients to self-monitor their lung health regularly without radio logical inputs.

6. Scientists at Indian Institute of Astrophysics have shown that the James Webb Space Telescope is capable of detecting moons around exo-planets around nearby stars. They made detailed models of the transit light curves when the exo-planet goes across the disk of its star, and found that the small variations that the presence of an exo-moon around this planet can be detected by JWST.

## **F. Scientific Infrastructure Building**

1. Support has been provided to Bharati Vidyapeeth University, Pune for carrying out the activities of Project Monitoring Unit-Phase II towards coordination of various Summer/ Winter Schools in Geospatial Science and Technology and upgradation of DST-iget-portal established as knowledge partner to support the above.
2. **Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (FIST) Program**
  - The FIST PG College committee reviewed the **forty-nine** PG college project midterm progress in a physical meeting held on 1<sup>st</sup> to 3<sup>rd</sup> August, 2022 at University of Hyderabad.
3. **Sophisticated Analytical Instrument Facilities (SAIF)**
  - SAIF centre at Shivaji University, Kolhapur conducted awareness workshop of I-STEM portal on 7th Aug 2022. This event was attended by around 150 participants within the jurisdiction of 100 km along with 50 participants from Shivaji University.

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