

Monthly Summary

Department of Science and Technology

(May, 2023)

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

1. On the occasion of 25th National Technology Day, the Hon'ble Prime Minister of India, Shri. Narendra Modi ji, inaugurated National Technology Week 2023 event, organised by Technology Development Board (TDB) along with Atal Innovation Mission-NITI Ayog and 11 other Ministries/ Departments during 11th to 14th May, 2023 at Pragati Maidan, New Delhi. The theme of the event was 'School to Startup - Igniting Young Minds to Innovate'. 800 exhibitors, 200 student exhibitors and 100 startups from various sectors exhibited their innovations and products. Nine Startups supported from Technology Innovation Hubs (TIHs) established under NM-ICPS Programme of DST, demonstrated their technologies/products in advanced technology verticals. Tech Talk Sessions on Cyber-Physical Systems, Quantum Computing & Communications were also organized in this event.
2. Dr. Jitendra Singh, Hon'ble Minister for Science and Technology virtually inaugurated the DST AI Conclave 2023 which was held from 9th to 10th May, 2023 hosted by Institute of Advanced Study in Science and Technology (IASST), Guwahati. The focus of the conclave was promoting progress and innovation in the North-Eastern Region.
3. As a follow up of the US-India Initiative on Critical and Emerging Technology (iCET) announcement, DST in partnership with NSF has created a platform for collaborative research opportunities in areas of Computer and Information Science and Engineering; Cyber-Physical Systems and Secure and Trustworthy Cyberspace. DST and NSF had given a joint call for proposals on May 22, 2023.
4. The Union Cabinet approved the National Quantum Mission (NQM) on 19th April 2023, at a total outlay of Rs.6003.65 crores for a period of five years, to be implemented by Department of Science and Technology (DST).
5. The Mission Governing Board meeting of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) was held on 4th May, 2023 in New Delhi in the hybrid mode. The Mission Office, NM-ICPS has conducted site visit on 18th May 2023 to IHUB DRISHTI FOUNDATION, Indian Institute of Technology, Jodhpur, to review the overall progress of activities.
6. A national workshop on IMPRINT-II Programme jointly implemented by DST/ SERB and Ministry of Education was held on 22nd May, 2023 in New Delhi wherein more than 30 advanced technologies were showcased.
7. An International Conclave on Climate Research was jointly organised by DST and Ministry of Earth Sciences at IIT Bombay on 26-27 May, 2023 to discuss and finalise national climate research agenda for implementation.
8. The Indian Institute of Astrophysics (IIA) organised the first - Research Experience for School Students (RESS) program where high school students were chosen to do a week long project with different IIA staff.
9. IIA organised for the first time a project "A Day with an Astronomers" in which high school students can spend a day with an IIA astronomer as a 'job shadowing'.

10. Indian National Science Academy (INSA), New Delhi, has started a Science20 Webinar Series as a part of the S20 outreach activity where the eminent scientists and policymakers will answer the emerging questions on Science, Technology, and Innovations through panel discussion. First webinar in the series was organized on 24th May with distinguished panellist Prof. Abhay Karandikar, Director, IIT Kanpur, and Professor Ashutosh Sharma, Science20 Co-Chair & President, INSA. The webinar was conducted live on INSA YouTube Channel.

11. During Science20 School Outreach Program a panel discussion on emerging technologies, science and Innovation for sustainable development was held in a school in Faridabad. The talk series/panel discussions was attended by 800 students of grades 9-12 from the host school and neighbouring schools.

12. R&D Team from Collins Aerospace, Bengaluru had an interactive meeting with the faculty members of Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) to identify potential research projects of mutual interest for funding in the areas of:

- Battery Technology (Electric Aircrafts requirements)
- Advanced/Smart Materials
- Digital product development technologies
- Digital Thread, Model-Based Design & Simulation... (specifically related to CFD)
- Fluid Mechanics and Thermal Science (aerospace requirement)
- AI/ML and AR/VR; Prognostic Health Management

13. A discussion was held with State S&T Councils virtually on 26th May 2023 to bring out a knowledge product on mapping home grown Indian innovations (standalone as well as ecosystem-level innovations) having proven track record in accelerating SDGs in the States.

14. The research teams from 6 Technology Innovation Hubs (TIHs) represented National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) at NSF/TIH PI Meeting and Workshop held from May 22 & 23, 2023 in Baltimore, Maryland, USA, for the jointly supported 35 projects by the U.S. National Science Foundation (NSF) and Department of Science and Technology (DST).

15. Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru has developed a technology of electrically actuated Infra Red (IR) regulating switchable smart window for controlled passive cooling of dwellings. The incorporation of inherent IR-reflecting materials to develop passive and energy-efficient smart windows will lead to minimizing the energy demand.

16. A newly synthesised biocompatible therapeutic nano-micelle drug delivery system combined with anti-inflammatory drugs has been developed by Institute of Nano Sciences and Technology, (INST), Mohali. This drug has improved potential to cure rheumatoid arthritis at the lab level. It can help ameliorate the pain associated with the disease as well as cure the disease by restoring cartilage integrity which provides flexibility to the bone.

17. Under the INSPIRE MANAK Programme, twelve district level, one State level exhibition, project competitions and two mentorship workshops were organized.

18. New programme, WISE Internship in IPR (WISE-IPR) intended to provide training in the area of Intellectual Property Rights to Women Scientists and Technologists has been started.

19. 80 research groups were involved in different mega projects which include 200 faculty/engineers and 200 PhD students/post-docs. 400 users utilized 28 research facilities/research infrastructures. 12 experiments were performed. Output includes 18 collaborative research

publications, 5 research publications, 8 conference publications 4 PhDs, 10 S&T Reports/Analysis Notes, and training of 38 technical human resource.

20. In the technology week held at Pragati Maidan from 11.05.2023, handheld laser 3D scanner (developed by CMTI, Bengaluru with the fund support of Advance Manufacturing Technologies program of DST) and Bio-refinery (developed by VNIT, Nagpur with the support of Waste Management Technologies program of DST) were demonstrated.

21. Different project activities including production of in-kind components for establishment of Facility for Antiproton and Ion Research (FAIR) and design and development of in-kind components for establishment of Thirty Meter Telescope (TMT) continued. Technology Development towards various Indian in-kind components continued in different mega projects involving 48 Indian Industries.

22. Promotion of University Research and Scientific Excellence (PURSE) Management Board (PMB) meeting was organized on 25th & 26th May, 2023. The performance review of eight universities supported under PURSE was carried out. The committee also worked on screening 69 new projects submitted under this programme. PMB shortlisted eight universities for the final presentation.

23. A meeting under the Chairmanship of GDPDC Chairman was held on 1st May 2023 at National Centre of Geodesy, IIT Kanpur. The meeting aimed to discuss the various activities of the NCG since its inception, progress of the various RCGs (Regional Centre of Geodesy) and their future roadmap in alignment with NGP 2022 along with understanding of indigenous current capabilities for realization of the various milestones related to development of Geodetic Infrastructure in the Country.

24. A Three-day workshop on 'Practical aspects of Conceptual Modelling of Geospatial data' was conducted at GISE Hub, IIT Bombay with a participation from scientists and officers from Geological Survey of India (GSI), Sikkim SDI, NATMO, Survey of India, Census of India, Punjab Remote Sensing Centre, ORSAC, MPSEDC, NIC, APSAC and NGP, DST. The workshop provided lectures as well as hands-on experience in Geospatial data modelling.

25. A Brainstorming with FICCI and AGI representatives was held on 23rd May 2023 with an aim to strengthen the role of Geospatial Industry to build up the capacity building and Geospatial Skill Development throughout the Nation in alignment with the National Geospatial Policy-2022.

26. Series of divisional tutorials were carried out with the goal of learning how data modelling is done via the adoption of standards which would be essential for the realization of the goals of the National Geospatial Policy. Insights on data standards, numerous facets of data content modelling, takeaway from ISO/TC 211 56th Plenary Meet were provided during the above meetings.

27. Financial support was provided to Wadia Institute of Himalayan Geology, Dehradun, for "Development and Deployment of an Integrated Operational Warning System (IOWS) in Dhauliganga River Basin, Chamoli, Uttarakhand". Financial support was also provided to various institutes to develop "Roles and Methods of Geointelligence to Achieve Tangible UN Sustainable Development Goals", for carrying out "GEL-IoT Geospatially Enabled Learning Approaches for Intelligent IoT Based Water Quality Monitoring", for studying "Standard City GML Data Model Strategy for Consistent Modelling of Slums in Smart Cities Across India, for conducting 21 days Summer/Winter School (level-1; Programme) on "Geospatial Science and Technology" under NGP.
