

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

Technology Bhawan,
New Mehrauli Road
New Delhi-110016
Dated: 11.05.2022

OFFICE MEMORANDUM

Subject: Monthly Summary to the Cabinet for the month of April, 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 30.04.2022 for information.

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

(Pulok Sen Gupta)

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)

Signed by Pulok Sengupta

Date: 11-05-2022 12:15:30

Reason: Approved

Department of Science & Technology
Monthly Report
April, 2022

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

A. Science for society

1. The Ayushman Bharat-PMJAY/KASP Kiosk inaugurated by Sree Chitra Tirunal Institute for Medical Sciences and Technology, (SCTIMST), Trivandrum.
2. National Innovation Foundation (NIF), Ahmedabad facilitated granting of 5 patents to its grass root innovators, of which major two are :
 - i. Herbal Composition For Therapeutic Management Of Diseases Of The Respiratory Tract, Human Health;
 - ii. An Indoor Navigation System For Aiding Visually Challenged People.
3. Vigyan Prasar (VP), Noida successfully organized a combined exhibition of eight various S&T ministries and departments of the Government of India at Palli Village in Samba District of the UT of J&K.
4. During the “**National Panchayati Raj Day**” celebration at Palli Village in Samba District, Jammu & Kashmir, which was inaugurated by the Hon'ble Prime Minister of India, several rural specific technologies that were developed under the support of schemes/programmes of the SEED-SSTP division were showcased.

B. Technology Development

1. A patent was granted for the method of Producing Porous MgF₂ Nanoparticles, Antireflection Coating Suspension and Coatings for Solar Optical UV and IR Transparent Window Applications to ARCI.
2. The Division of Pediatric Cardiology at Sree Chitra Tirunal Institute for Medical Sciences and Technology, (SCTIMST), Trivandrum did the first Piccolo device deployment in a 3kg baby, a patent arterial duct (PDA) occluder designed for use in newborns and young infants.

C. International Cooperation

1. Organised a Stakeholder consultation workshop with Indo-U.S. Science and Technology Forum (IUSSTF) on Distribution System Operator (DSO) developed under the project entitled
2. Hon'ble Minister for Science & Technology announced funding opportunity of Hydrogen Valley Platform, which is also a global initiative to optimise

the hydrogen demand and supply by onsite generation and utilisation, utilise the renewable resources effectively, and water excess areas with geographical identity during the MI Annual Gathering held on 4th - 6th April, 2022 at New Delhi.

3. Hon'ble Union Minister for Science & Technology launched three Material Acceleration Platforms (MAP) set up by Department of Science and Technology (DST) which include DST-IISER Thiruvananthapuram Integrated Clean Energy Material Acceleration Platform on Storage, DST-IIT Kanpur Integrated Clean Energy Material Acceleration Platform on Materials and DST-IIT Hyderabad Integrated Clean Energy Material Acceleration Platform on Bioenergy and Hydrogen with a total cost of \$ 6 Million USD during the Mission Innovation (MI) Annual Gathering held on 4th - 6th April, 2022 at New Delhi. These platforms would leverage emerging capabilities in next-generation computing, artificial intelligence (AI) and machine learning, and robotics to accelerate the pace of materials discovery up to 10 times faster.
4. In the held meeting between the Hon'ble Minister of State (I/c) for S&T and ES and H.E. Mr. Mika Lintilä, Minister of Economic Affairs, Finland both Ministers welcomed the growing partnership between India and Finland, including the Digital Partnership in Future ICT, Future Mobile Technologies, and Digital Education. To create a mutually beneficial knowledge-sharing platform for researchers, universities, and companies from Finland and India, both Ministers agreed to explore launching a virtual Joint Centre of Excellence for Quantum Computing.

As a follow-up to the Ministerial meeting, a detailed work plan and modalities are being worked out to jointly build a 50 Qbit Quantum Computer using Finnish expertise in low temperature and India's complementary expertise in software components. Complete plan viz. Putative structure of the CoE; roles & responsibilities; estimation of costs; timeline (planning phase, construction phase); challenges and & roadblocks being worked out through consultations with all stakeholders.

D. Human Capacity Building

1. Around 600 participants including Urban Planners, Govt. Officials, Faculty members, International Delegates, Representative of NGOs, Students benefitted from online training programmes and webinars conducted by National Institute for Disaster Management (NIDM), New Delhi under National Mission for Sustaining Himalayan Ecosystem (NMSHE) mission on issues related to Disaster Risk Reduction, Resilience and Safety Measures etc.
2. **Vigyan Jyoti - Sparkle Series:** Three sessions were conducted for Class XI Vigyan Jyoti scholars on the topic 'Entertaining Arithmetic and Algebra' and 'Electricity, Magnetism, and Electromagnetism' in collaboration with the Centre for Creative Learning, IIT Gandhinagar in April. In this session,

Vigyan Jyoti scholars learnt about the un-penned versions of arithmetic and algebra by relating them to the daily-life experiences (reflection of light in a coffee mug), computational thinking behind basic arithmetic (division, multiplication), and visual way of solving algebraic puzzles.

3. Seventh Meeting of the National Organizing Committee for successful hosting of Second United Nations World Geospatial Information Congress (Second UN-WGIC) was held on 8th April 2022 in online mode to not only brief the members about the First Meeting of the International Advisory Committee (IAC) for the Second UNWGIC, held on 31st March, 2022 but also invite suggestions from the experts for the sessions and key note speakers for the Congress.
4. Under an ongoing project supported to Indian Institute of Technology Patna in Urban Governance Sub-schemes, an Indian Patent has been filed on 'Geospatial Location Estimation and Navigation for Smart Parking and Smart Cleaning'.
5. **Under 'Geo-innovation Challenge'** for harnessing new ideas in Geospatial Science, Technology and Entrepreneurship from the young professionals, following 03 day programme was conducted in hybrid mode:
 - On Geo spatial Science and Technology in Intervention of Geospatial Technology for Hydrology from 18-20 April 2022, coordinated by National Institute of Hydrology, Roorkee
 - On '**Geospatial Technology - Geo-enabled technological solutions for realizing Smart Cities'** from 20-21 April, 2022, coordinated by Indian Institute of Space Science and Technology, Thiruvananthapuram.

E. Scientific Research

1. The fabrication of a textile based triboelectric nanogenerator (T-TENG) composed of an active layer of silver (Ag) nanoparticles loaded graphitic carbon nitride (g-C₃N₄) nanosheets on carbon fibres has been reported by SNBNCBS. The superior output characteristics as well as thermal stability of AgCN/nylon based triboelectric nanogenerator makes it a potential candidate for integration into textile based wearable electronic devices.
2. Scientists of Indian Association for the Cultivation of Science (IACS), Kolkata have identified a class of natural product called Cananginones which show cytotoxicity against several types of cancer cells. After detail mechanistic study and found to inhibit hedgehog signaling pathway through blocking Gli transcription factor and blocks the metastatic potential of cancer cells.
3. For the Thirty Meter Telescope project at Indian Institute of Astrophysics (IIA), Bengaluru, the first telescope-ready Segment Support Assembly successfully assembled.

4. A team of Scientists from the Institute of Advanced Study in Science & Technology (IASST), Guwahati have demonstrated that the plasma generated by applying CAP has the potency to deactivate SARS-CoV-2 spike protein, which binds to human ACE2 receptor for inducing viral infection and subsequent Covid-19.

F. Scientific Infrastructure Building

1. Researchers at Panjab Agricultural University, Ludhiana supported under DST PURSE Program have developed a wheat variety, with excellent baking quality having soft and sweet *chapatis*. The wheat variety called 'PBW1Chapati' has been released at state level in Punjab for cultivation under timely sown irrigated conditions. The research has been carried out with the help of research facilities acquired under PURSE Grant. The story is released by Press Information Bureau on 26 April, 2022.
