

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: 14.08.2020

**OFFICE MEMORANDUM**

Subject: Monthly Summary to the Cabinet for the month of July, 2020.

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 31.07.2020 for information.

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

(Balram Goel)  
Under Secretary to the Govt. of India

To,

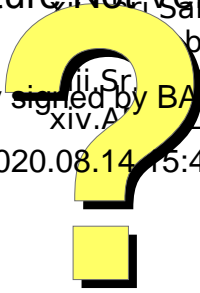
**All Members of the Council of Ministers (as per Annexure-I)**

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@ismgr.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. Mr. Sanjay Kumar Mishra, Sc. 'G', DST for uploading the Monthly Summary on website. (sanjaykr.mishra@nic.in)
- xiii. Mr. Anuj Srivastava, Sc. 'G', DST. (anuj.tripathi@nic.in)
- xiv. Mr. Balram Goel, Sc. 'G', DST for Hindi Translation (kn.singh65@gov.in)

Signature Not Verified

Digitally signed by BALRAM GOEL  
Date: 2020.08.14 15:41:12 IST



**Annexure-I**

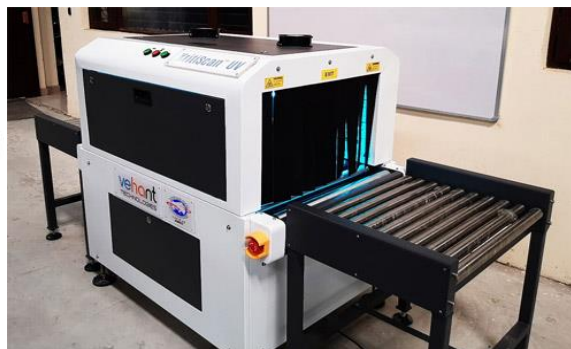
<b>Sl. No.</b>	<b>Name of the Hon'ble Cabinet Ministers</b>	<b>Email ID</b>
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**Department of Science & Technology**  
**Monthly Report**  
**July, 2020**

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

**A. Various Measures taken by DST for COVID-19**

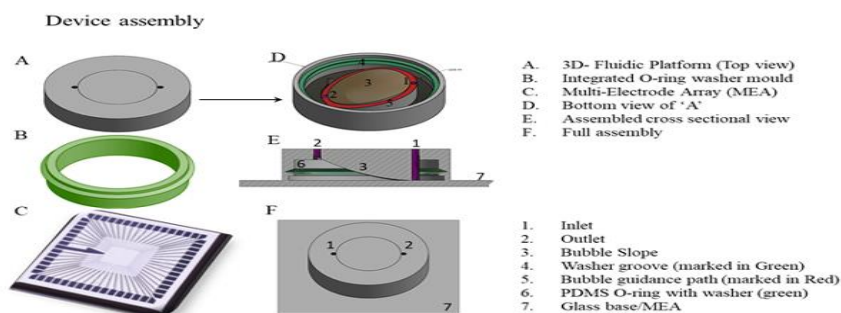
1. Nanopowders and suspensions of Copper Oxide (CuO) and Copper Oxide-Silver (CuO-5Ag) were prepared at lab-scale at International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) using Flame-Spray Pyrolysis. These will be tested and validated for disinfection of PPE fabrics and sprays to fight against COVID-19.
2. MACS-Agharkar Research Institute (ARI) has been approved by ICMR for testing COVID-19 samples. 800 samples were tested to detect SARS-CoV-2.
3. Institute of Advanced Study in Science and Technology (IASST) COVID-19 testing and Research Laboratory got ICMR, New Delhi approval on July 25<sup>th</sup>, 2020. IASST COVID 19 testing and Research Centre conducted so far 25,200 tests.
4. International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) and Vehant Technologies Pvt. Ltd, Hyderabad co-developed UVC based Disinfection Baggage Disinfection System (KritiScan® UV) for airports, railway and bus-stations, hotels, commercial and private establishments for the rapid disinfection of baggage.



*KritiScan® UV – Baggage Disinfection System*

*Nanopowders and Suspensions of CuO and CuO-5Ag*

5. VNIR Biotechnologies Private Limited, a spinoff by Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) launched indigenous fluorescence probes and Polymerase chain reaction (PCR) mix for Reverse transcription polymerase chain reaction (RT-PCR) detection which are molecular probes used in COVID-19 test kits. JNCASR designed and fabricated a handheld bench-top micro incubator technology and demonstrated the ability to introduce and deliver drug reagents (channel blockers) in a controlled manner and see their effects.



6. Centre for Augmenting WAR with COVID-19 Health Crisis (CAWACH) was launched as DST's program through Society of Innovation & Entrepreneurship (SINE), IIT Bombay, Mumbai, to support startups incorporated in India and having indigenous developed products/ solutions to address COVID-19 crisis. After various rounds of evaluation, out of 826 applications received, 54 startups were selected for funding. These startups are in different domains viz. ventilators & medical devices, disinfectant, PPE kit, diagnostic and informatics. The fund disbursement has been started and most of the startups have received first round of grants.
7. Technology Development Board had issued a 'call for proposals' inviting applications from Indian companies and enterprises for technologically innovative solutions towards 'Fighting COVID-19' on 20<sup>th</sup> March, 2020.
8. During the month of July, 2020 following ISC and HLEC meetings were conducted via online mode to evaluate the proposals in different phases as per details given below:
  - i. **Online Initial Screening Committees (OISCs) meetings conducted under following Phases:**
    - Total five (05) proposal's under domains '**IT, IOT & AI**' have been evaluated via OISC meetings under phase-05.
  - ii. **Online High-Level Expert Committee (OHLEC) meetings conducted under following Phases:**
    - Total two (02) proposal's under domains '**IT**' and '**Ventilator**' have been evaluated via OHLEC meetings held on 14<sup>th</sup> and 17<sup>th</sup> July, 2020 under phase-02.
9. A Grant-in-Aid Agreement has been signed on 8<sup>th</sup> July, 2020 with M/s Thincr Technologies India Pvt. Ltd., Pune for project title "Development of low cost and more efficient masks coated with antiviral agents to protect spread and protection of Covid 19 and other viral infection" (**COVID-19**)
10. A Grant-in-Aid Agreement has been signed on 9<sup>th</sup> July, 2020 with M/s Medzome Life Sciences Pvt. Ltd., New Delhi for project title "Development and commercialization of fluorescence-based Rapid COVID-19 Detection Kit". (**COVID-19**)
11. In context with COVID 19, Core Support Group (CSG), Vigyan Ashram (Indian Institute of Education), Pune under TARA programme has developed low cost UV chamber for disinfection of daily use gadgets (Commercially available

through Alumni) & an Open Source Disinfection Chamber with Hydrogen Peroxide for complete human body. Also, M. S. Swaminathan Research Foundation, Wayanad, Kerala has developed a low cost, easily manufactured design of pedal operated instrument for dispensing sanitizer using PVC pipes and designed a bottle with key chain for hand sanitizer.

12. 4<sup>th</sup> updation Covid 19 dashboard infrastructure is being updated with periodical incorporation of updated MoHFW, ICMR & other state agencies data.

## **B. Science for Society**

1. A virtual review meeting for the projects supported under the scheme-S&T for Women was held on July 16, 2020. Twenty one ongoing & completed projects were evaluated by the experts during the Video Conferencing (VC).
2. An Expert Committee (EC) meeting and orientation workshop was held on July 17, 2020 on 'Systemic Interventions for Output-Outcome based Impact: SCSP and TSP Schemes'. The new aspirants for STI Hubs were sensitized during this workshop, by the EC and previously recommended STI Hubs about the concept and expected delivery of hubs.
3. Participated and provided inputs to Inter Ministerial Steering Committee on Welfare of Senior Citizens, in a meeting organized by Ministry of Social Justice and Empowerment on July 24, 2020.
4. Inputs on the report "Schedule Tribe Component (STC), Relevance and Effectiveness in Government of India funded Schemes" was given to Ministry of Tribal Affairs.
5. A report on implementation of Tribal Sub Plan (TSP) Scheme by Department of Science and Technology (DST) was submitted to Ministry of Tribal Affairs subsequently meeting organized by Ministry of Tribal Affairs on 31 July 2020 was attended by DST officials.
6. A dedicated single window web portal is being designed and developed by Centre for Development of Advanced Computing (CDAC), NOIDA, for highlighting the achievements of State S&T Councils. As the primary stakeholders of this portal are State S&T Councils & DST meetings were conducted on 10 and 27 the July 2020 with the representatives of State S&T Councils, DST and portal development team of CDAC to discuss the methodology for data collection, collation and representation through this web portal.
7. National Innovation Foundation – India (NIF) facility filed 7 patents during the months. Three innovations viz. fruit nipper, Shock Absorbing Crutches and Improved Baisakhi (Crutch) were disseminated by NIF amongst 18 people in the States of Punjab, Haryana and Rajasthan; In addition, seeds of Kudrat- 5 (paddy variety) and DRK variety (paddy variety) were disseminated amongst farmers in Jharkhand, Chhattisgarh, West Bengal and Odisha.
8. Indian National Science Academy (INSA) started the INSA-INYAS VigyanSetu Webinar Series. The following two webinars have been conducted.
  - i. Role of Academic Institutions in Fight Against COVID-19: CSIR-CCMB perspective.
  - ii. Evolution and Spread of SARS-COV-2.
9. The first International Liquid Mirror Telescope (ILMT) workshop was hosted by Aryabhata Research Institute of observational sciences (ARIES), Nainital,

through online platform, during 29th June to 01st July 2020. About 100 researchers including Ph. D. students attended the workshop from India as well as several other countries.

10. 2 popular science articles (how certain natural events change the priorities of research and how damming of natural flow of water wreaks havoc in high latitude regions and the Himalayas) were published in Krushival newspaper by Indian Institute of Geomagnetism.
11. Indian National Science Academy (INSA) in collaboration with the National Center for Mathematics (NCM) will organise Teachers' Enrichment Workshops to update the knowledge of college and university teachers and Ph. D. students.
12. Live-streaming of the first episode of "Science Stories" on 31 July, 2020 on Indian Institute of Astrophysics YouTube channel was done. In this series, present and past students of IIA are interviewed, to share their life stories and experience in research. This series is aimed at motivating the younger generation to take up research in basic science as their career.
13. A joint webinar on "Intellectual Property Rights" was organized by IPR Division of Technology Information, Forecasting & Assessment Council (TIFAC) in association with Pushpa Gujral Science City, Jalandhar which was attended by about 200 participants from academia, R&D Institutes and industry.
14. A Scientific Webinar on Indo-Italian Cooperation for COVID 19 was organised in collaboration with Embassy of India in Rome and Embassy of Italy in India by SERB. The webinar was attended by more than hundred scientists and experts working for COVID 19 research across both countries.
15. The National Academy of Sciences, India (NASI) Chapters organised two WEBINARS / Online Workshop "Impact of Covid-19 on Research Progress in Life Sciences: Mitigation of Losses and the Way Forward' and Impact of COVID-19 in human life & environment".
16. North East Centre For Technology Application And Reach (NECTAR), Shillong has organized one online talk in "NER Development: Innovation, Communication & Policies".
17. Indian National Academy of Engineering (INAE) has organized webinar on the topic "Strategy for Accelerated Growth of Renewable Energy Application in India".
18. Organized the Review for Science Channel on 09-07-2020 in the O/o Hon'ble Minister of S&T and ES for Science Channel
19. Follow up Meeting by Secretary, DST on 10-07-2020 for Science Channel
20. Worked on Vision Document for NCSTC
21. Worked on EFC (NCSTC components)
22. AWSAR webinar #5 held on 27-07-2020 on Popular Science Writing (hosted by Vigyan Prasar)
23. Worked with existing/ongoing projects for covering possible work related to COVID 19 and outreach activities on COVID-19 promoted
24. Attended and participated webinar on "Atma nirbhar bharat – opportunities in renewable energy manufacturing" on 23rd July 2020.
25. Attended Webinar on "COVID learnings – Start-ups of Water Assets and Businesses - Challenges and Solutions" 18th July 2020.
26. Attended Webinar on 'Groundwater Recharge and Aquifer Management' on July 15, 2020

### **C. National Technology Mission**

1. The 4<sup>th</sup> meeting of Mission Governing Board (MGB) of National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) was held on 15<sup>th</sup> July 2020 through **Video Conferencing and following decisions taken:**

To initiate 9 Technology Innovation Hub (TIH) in foundational technologies of NM-ICPS.

2. The Apex Committee meeting on National Mission on Quantum Technology & Application (NM-QTA) was held on 22<sup>nd</sup> July, 2020 through **Video Conferencing to deliberate on** Detail Project Report (DPR).
3. A virtual project review meeting of 4 centres to review the progress and achievements of the work done under Materials for Energy Conservation and Storage (MECSP 2017) was held from 2<sup>nd</sup> -3<sup>rd</sup> July 2020.
4. A virtual face to face project review meeting of 33 projects to review the progress and achievements of ongoing projects under Materials for Energy Storage (MES 2017) was held from 20<sup>th</sup> -29<sup>th</sup> July 2020.
5. Participated in Closed door Virtual Meet about Solar Cell Technologies Research in India - Industry Academia Partnership organised by National Solar Energy Federation on India.
6. Participated in a "Review meeting on Oil and Gas Pillar" under the Chairmanship of Hon'ble Minister of PNG and Steel on 10.07.2020, which was organized by Ministry of Petroleum.
7. Participated in 41<sup>st</sup> Meeting of Expert Appraisal Committee for Projects related to Nuclear, Defence and related project held on 15.07. 2020.
8. Participated in Mission Innovation India consultative Meeting: Bioeconomy Mission held on 08.07.2020 organized by DBT.
9. Participated in online webinar "Managing Energy Transitions in developing countries" held on 14.07.2020, which was organized by ICRIER, New Delhi.
10. Participated in online 7<sup>th</sup> Environmental Compensation (EC) Appraisal Committee Meeting held on 16/07/2020, which was organized by CPCB.
11. Participated in webinar Enabling Smart Cities to Design smart Solutions for Solid Waste management held on 22.07.2020 which was organized by FICCI

### **D. Technology Development**

1. R&D support was provided to **Institute of Green Energy & Geospatial Technology, Jagatsinghpur, Odisha for the Project on "Vulnerability Analysis and Risk Assessment of Coastal Hazards with Special reference to Coastal erosion along Odisha coast- A Study using Geospatial Technology"**. This study will open up a range of mitigation options for managing the various hot spots of coastal erosion and can be a guiding document for the Integrated Coastal Zone Management of Odisha coast.
2. Support has been provided to **Indian Institute of Water Management (ICAR), Chandrasekharpur, Bhubaneswar for carrying out the 'Drought and Heat Stress Assessment using the GRACE gravity records in Major River Basins of India'**



3. Scientists from S N Bose National Centre for Basic Sciences (SNBNCBS) Centre invented the Photostable, inorganic perovskites that could pave the way for a low cost and efficient PV cells. SNBNCBS has transferred following three (03) Technologies developed under the TRC project to different Indian Companies.
  - (i) A Non-invasive Hyperbilirubinemia Screening System for Neonatals - Zyna Med-Tech, Visakhapattanam.
  - (ii) Respirator with Attached Exhalation Valve and Suspended Particulate Matter Filter for Comfortable and Hygienic Breathing - Paulmech Infrastructure Pvt. Ltd., Kolkata
  - (iii) A Nano-sanitizer with a Dispensing Antimicrobial Layer - Paulmech Infrastructure Pvt. Ltd., Kolkata.
4. Remedial Action, Knowledge Skimming and Holistic Analysis of COVID-19 (RAKSHAK), was developed for technology development based on Artificial Intelligence and 40 Institute across the country are participating.
5. Review of project on Electrical Chamber for Detection and Mitigation of Air Pollution.
6. Review of project on Design of an air purifier using real time air quality measurements and CFD analysis.
7. Meeting was held with officials from Ministry of Coal and experts from CIL, CIMFR, CMPDI and IIT (ISM) Dhanbad for identification of thrust areas for future research related to clean coal technologies.
8. Review of project on Mitigation of Air Pollution: Micro-to-Macro Scale Study of Particle Capture by Liquid Droplets.
9. Review of project on Identification and Demonstration of Cost effective Technologies to Maximize Habitat Energy self-sufficiency.
10. Review of project on Demonstration of MW scale solar energy Integration in weak grid using Distributed Energy Storage architecture (D-SIDES).
11. Review of project on Design and Development of Hybrid Renewable Energy Microgrid with Value Chain Applications for Agriculture Dairy Farm.
12. Review of project on Indo-US Joint Clean Energy Research and Development Centre program on Smart Grid and Grid Storage Technology.
13. Review of project on SMART Planning and Operations of Grids with Renewables and Storage (SPOReS).
14. Review of project on Mix-Energy-Source Electric Vehicle Charging System Design and its Impact on Indian Smart-distribution-grid.
15. Review of project on Demonstration of grid supportive EV charger and charging infrastructure at LT level (D-EVCI).
16. Review of project on Development of a Prosumer Driven Integrated SMART grid.
17. Review of project on Research and development of smart, secure, scalable, resilient and adaptive cyber-physical power system (S3RA-CPPS).
18. Project Review and Monitoring Committee (PRMC) meeting held to review the project entitled "Advanced Ultra Supercritical Test Rig – Investigation of the long term operation behaviour (Fire Side Corrosion) of tubes made of Super 304H and Ni-based Super Alloy (Alloy 617) for future high efficient Power Plants" and "Development of High Temperature Spin Test Rig and Accelerated Testing of Advanced Ultra Super Critical (AUSC) Steam Turbine Rotor Segments under Transient and Steady State Thermo-Mechanical conditions".



19. Review of project on Design Development and Demonstration of high ash Indian Coal to Methanol (CTM) Technology.
20. Review of project on Stability analysis, protection, and coordinated control of networked microgrids.
21. Review of project on AlGaN/GaN Power Transistor Based Platform Technology and Modules for Smart Grid Applications.
22. Review of project on Development of Photonic System for Real Time Remote Monitoring of Air Quality.
23. A meeting held with officials from Ministry of Coal to discuss on ongoing activities on Clean Coal Technologies and future collaboration.
24. To meet the the vision of Atamnirbhar Bharat and Make in India national program, division has solicited the proposals with theme "Solar Equipment and Consumable stream". The Expert panel has completed the evaluation of 58 proposals received under the call . After deliberation with the project teams, 8 proposal has been recommended for next level evaluation.
25. A document on "Energy Efficient Enterprise (E3) Certification Scheme" for Brick Sector circulated by BEE requesting comments of DST. DST comments were provided on the document.
26. A document on "Bioeconomy" Mission was circulated by DBT seeking inputs from DST. Comments/suggestion were provided on the same.

## **E. International Cooperation**

1. **Renewal of India-European Union (EU) Agreement on Scientific and Technological Cooperation:** India and European Union Agreement on Scientific and Technological Cooperation is renewed for the next five years (2020-2025). The renewal of the Agreement will help to expand the cooperation in scientific and technological research, strengthen the conduct of cooperative activities in areas of common interest and application of the results of such cooperation to their economic and social benefit. In the last 5 years, the level of co-investment on India-EU Research Technology Development Projects for addressing societal challenges such as affordable healthcare, water, energy, food & nutrition has been stepped up resulted in several technologies, patents development, their gainful utilization, joint research publications, sharing of the research facility and, exchange of scientists and students from both sides.
2. **Indo-US Strategic Energy Partnership – Partnership for Advancing Clean Energy-Research:** Meeting of the U.S.-India Strategic Energy Partnership (SEP) was held on 17th July 2020 to review progress, highlight major accomplishments, and prioritize new areas for cooperation. U.S. Secretary of Energy Dan Brouillette and Indian Minister of Petroleum and Natural Gas and Minister of Steel Dharmendra Pradhan co-chaired a virtual ministerial. Speaking on the occasion, Prof Ashutosh Sharma, Secretary, DST stated that **the** collaboration between India and the United States has grown over the years under the Programme for Accelerating Clean Energy – Research (PACE-R). The ongoing collaboration on smart grids and energy storage is being implemented by a consortium comprising of 30 Indian and US entities with an investment of US \$ 7.5 million each by India DST and US DOE with matching amount provided by the consortium. Prof Sharma also added that the dialogue between US-DoE and India DST on clean coal technologies, Supercritical Carbon Dioxide (sCO<sub>2</sub>) Power Cycles and Carbon Capture Utilisation & Storage (CCUS) technologies have progressed well and common priorities for collaboration have been evolved. He also added that one of the

notable outcomes of the dialogue is the participation of India in the multilateral platform for Accelerating CCUS Technologies (ACT) through which avenues have been generated for possible US- India collaboration.

3. **India-Japan Webinar on Quantum Technologies:** Prof Ashutosh Sharma, Secretary, DST delivered a keynote address in the Indo-Japan Webinar on Quantum Technology organised by the S&T wing at the Embassy of India, Tokyo, Japan in co-ordination with QuEST mission, DST on July 28, 2020 on a web platform. The objective was to explore possibilities to develop research collaborations. In his keynote address, Secretary, DST suggested infrastructure sharing between India & Japan with fabrication, calibration and infrastructure development and the possibility for the participation of startups and entrepreneurs; joint research programmes between Indian & Japanese researchers; and fellowships to doctoral and post-doctoral students. The opening remarks were made by H.E. Mr. Sanjay Kumar Verma, Ambassador of India to Japan emphasizing on quantum technologies, basic R&D and innovation as a key factor for collaboration between scientific communities of both countries. From the Ministry of Education, Culture, Sports, Science and Technology (MEXT), GoJ, Dr. KAJIWARA Susumu, Deputy Director-General, Science and Technology Policy Bureau delivered the opening remarks and shared exploring the opportunities through joint R&D on Quantum Technologies and researchers/students exchange under the bilateral collaboration. A total of 10 presentations were made by experts from India and Japan.
4. **Special STEB Meeting to finalise India-US COVID related projects:** In response to a Call for Proposals under the category of COVID-19 Ignition Grants of the U.S.-India Science and Technology Endowment Fund (USISTEF), IUSSTF received 257 in the Ignition Stage-I and 195 in the Ignition Stage-II category. The initiative intended to encourage and support out-of-the-box, innovative ideas from the community to address COVID-19 challenges. After three rounds of reviews, 6 Ignition Stage-I and 8 Ignition Stage-II proposals were shortlisted and placed in the Special STEB meeting to finalize COVID-19 Ignition Grant Awards.
5. **India-Hungary Joint Science & Technology Committee meeting:** The Indo-Hungarian Joint &T Committee meeting was held on 29th July 2020 on a virtual platform under the co-chairmanship of Head, International Cooperation, DST from the Indian side, and Head, Department for International Affairs, NRDIO. Both of them exchanged information on current national S&T policies and flagship programmes of their respective Departments. During the meeting, 11 projects were recommended for support for the year 2021-2024 under call 2019. Priority areas for the next call for proposal to be launched in 2021 were also discussed.
6. **Announcement of result of the joint call for proposals:**
  - a. Under the Indo-Polish Joint S&T Cooperation, call for Proposals was issued by the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India and Polish National Agency for Academic Exchange (NAWA), Poland for inviting joint research projects carried out by Indian and Polish researchers on the mutually agreed areas of i) Natural Sciences ii) Engineering and Technology iii) Medical and Health Sciences and iv) Agricultural Sciences. After judicious assessment based on scientific strength, technical aspects, project objectives and national priorities of both the countries, Department of Science and Technology (DST), India, and Polish National Agency for Academic Exchange (NAWA), Poland has jointly decided to support 19 project proposals.

- b. Under the India-Japan Cooperative Science Programme (IJCSP)-2019 Joint call for Proposals was issued by DST and Japan Society for the Promotion of Science (JSPS), Japan for inviting joint research projects and workshops carried out by Indian and Japanese researchers on the mutually agreed areas of i) Fundamental Sciences: Physical and Chemical Systems ii) Materials and System Engineering: Man-made Systems iii) Natural Systems: Life Sciences and Bioengineering Sciences iv) Astronomy, Space, Earth System and Sciences and v) Mathematics and Computational Science. A total of 134 common joint research project proposals and 8 workshop proposals were received against the call. These proposals were peer-reviewed and ranked separately by Indian and Japanese experts. DST & JSPS have jointly decided to support 20 joint research projects and 4 joint workshops/seminars.
7. **Indo-Italian Webinar for cooperation on COVID 19:** An Indo-Italian Webinar for cooperation on COVID 19: activities & perspectives was organised by the Department of Science & Technology along with the Italian Ministry of Foreign Affairs on 14th **July 2020**. Scientists of both countries shared each other expertise and agreed to work together on long term perspectives and future challenges to mitigate this pandemic in (i) Infectious diseases: COVID-19-Therapeutics, diagnostics, vaccines for viral respiratory diseases (ii) Post COVID-19: Impact on health and immunity (iii) Artificial Intelligence: Tools in COVID-19 disaster management (iv) Focused Algorithms for Infectious Disease Modeling (v) Mathematical Modeling of COVID-19 Spread.
8. **Industrial R&D programme:** Under India-Israel Industrial R&D and Technological Innovation Fund, CFP-5, due diligence meeting of the following 5 projects were held on web platform: (i) “Oral vaccines for COVID-19” by Growdea Technology Pvt Ltd, India, and MD Hai R&D, Israel; (ii) “Co2Storage” by the partners MHG Power and Infrastructure Pvt Ltd, India and Livolt Ltd from Israeli side; (iii) “Robust, Software Oriented, High data rate, and low-cost Underwater Acoustic Modem” by the partners Andromeda Maritime Solutions Pvt Ltd, India and Global R&D, Israel; (iv) “Next Generation Counter UAS System for Urban Environments” by Big Bang Boom Solutions Private Limited, India and Airfence Solutions Ltd, Israel and (v) “Development of drought-tolerant corn (maize)” with project partners Rallis India Limited, Bangaluru and Plant Arc Bio limited, Israel.
9. **Foundation for Assistance to Small Innovative Enterprises (FASIE) of the Russian Federation:** The Department of Science and Technology along with the Foundation for Assistance to Small Innovative Enterprises (FASIE) of the Russian Federation launched the India-Russia Joint Technology Assessment and Accelerated Commercialization Programme on 23rd July 2020. The aim of the programme is to connect Indian and Russian Science & Technology (S&T) led SMEs and Start-ups for joint R&D for technology development and for cross-country technology adaptation in areas viz IT&ICT (including AI, AR, VR), Medicine & Pharmaceuticals, Renewable Energy, Aerospace, Alternative Technologies, Environment, New Materials, Biotechnologies, Robotics, and Drones. Over a period of two years, the Department of Science and Technology will fund up to INR 15 Crores to ten Indian SMEs/Start-ups and FASIE will provide similar funding to the Russian projects. The programme will be accepting applications under two broad categories, i.e. Joint Partnership Projects and Technology Transfer/Adaptation. The applications against this call will be accepted through a dedicated portal [www.indiarussiainnovate.org](http://www.indiarussiainnovate.org) till September 30, 2020.

10. **BRICS Science, Technology and Innovation Cooperation - COVID-19 Call:** The COVID-19 pandemic caused by SARS-CoV-2 is one of the greatest global challenges and as such warrants a global response. BRICS countries account for more than 25% of the world's territory, more than 40% of the world population, and play a vital role in the world economy. In response to the COVID-19 pandemic, BRICS countries' scientific Ministries have joined hands to support collaborative research for the development of diagnostics; development of vaccines, new drugs and repurposing of existing drugs; Genomic sequencing of SARS-CoV-2 Virus; epidemiological studies and clinical trials; application of Artificial intelligence for COVID-19 drugs design, vaccine development, treatment, clinical trials, and public health infrastructures and systems. Eight funding agencies from BRICS countries including Department of Science and Technology and the Department of Biotechnology from India are co-investing about US10 million to support collaborative projects. Researchers from recognised R&D institutions ((Public or Private), government recognized not-for-profit, NGO(s)/ VO(s)/ Trust(s)/ Research foundations, Indian Industry can be a partner in the consortium. A series of networking meetings were organized to reach out to the stakeholders and disseminate the information.
11. An virtual inter-ministerial meeting to integrate the effort Country's Geospatial Community for the upcoming 10<sup>th</sup> Virtual Tenth Session of the UN-GGIM was held on 06 July, 2020. This meeting was a preparatory meeting for the upcoming Tenth virtual Session of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM), scheduled to be held online on 26-27 August and 4 September 2020, respectively.
12. Based upon the recommendations of the above meeting, Draft Framework for the Country Report-2020 was prepared in consultation with all the relevant stakeholders. This report will be submitted during the 10<sup>th</sup> Virtual Tenth Session of the UN-GGIM.
13. Focused Working Groups (WGs) to collate the country level activities/ gap areas catering to four main pillars: Governance, Data & Standards, Innovation and People were formed. Continuous interactions with relevant stakeholders were carried out to develop the country report-2020. Series of virtual meetings of these WGs were held Country Report may be developed in line with IGIF framework of UNGGIM. The details of these WGs meeting are as follows:
  - WG (People)- Virtual meeting was held on 22<sup>nd</sup> July 2020
  - WG (Governance)- Virtual meeting was held on 23<sup>rd</sup> July 2020
  - WG (Innovation) - Virtual meeting was held on 27<sup>th</sup> July 2020
  - WG (Data & Standards) - Virtual meeting was held on 28<sup>th</sup> July 2020

Based upon the recommendations made in the above WGs meeting, the first draft of the Country Report-2020 to be submitted to UNGGIM-Secretariat is being prepared.

14. In response to the e-mail received from United Nations Committee of Experts on Global Geospatial Information Management (UNGGIM) Secretariat related to inviting Governments of Member States through their national Ministry or agency responsible for geospatial information to submit **Expression of interest (EOI) to host the Second United Nations World Geospatial Information Congress (UNWGIC)**, a virtual meeting to discuss the proposal for **hosting the Second United Nations World Geospatial Information Congress (UNWGIC)**, was held on 14<sup>th</sup> July, 2020. This meeting was attended by the representatives of the National Security Council Secretariat (NSCS),

Ministry of Statistics & Programme Implementation (MoSPI), Heads and officials of the geospatial community of DST. All the participants supported the proposal to host the **Second United Nations World Geospatial Information Congress (UNWGIC)** in Year 2022 in India, as this is a good opportunity for the Country to showcase the strong National Geospatial Ecosystem at the global platform. Based upon the recommendations, the necessary approval for the submission of Expression of Interest (EOI) followed by detailed proposal for bidding to host the above mentioned event was sought. The EOI was drafted and submitted to the UNGGIM Secretariat.

15. Participated in the Executive Board Meeting of the UN-GGIM-AP (Asia Pacific) held on 3rd July, 2020. The main aim of the EB meeting was to discuss the overall work plan of UNGGIM-AP (Global Geospatial Information Management) for the year 2020-21 along with discussion about the various activities of Working groups on Geodetic Reference Frame work; Cadastre and Land Management and Integrating Geospatial Information and Statistics etc.
16. In order to develop a large-scale strategic collaboration/ programme in the area of Quantum computing/frontiers between India and Max-Planck-Gesellschaft (MPG), Berlin, Germany, a Video Conferencing (VC) was organised on 9<sup>th</sup> July, 2020. During the meeting, discussion was held for evolving a joint programme between India and MPG in the area of Quantum Computing.
17. In order to explore the possibilities of bilateral collaboration with Japan on Quantum Technologies, a webinar was organised on 18<sup>th</sup> July, 2020 inviting Indian researchers and Japanese Researchers. The webinar is focussed on the promotion of co-operation in R&D and exchange of students (Post doc level) contributing to Quantum Technology related R&D in both the countries.
18. A meeting held with Chair from HPT TCP and General Manager, Heat Pump Center, RISE Research Institute of Sweden to discuss on Comfort Climate Box. Discussed Research and Implementation potential in India and roadmap for developing the programme.
19. IC7 Co-lead meeting was held with officials from UK, European Commission and UAE to discuss about the ongoing activities and future plans in the area of heating & cooling for buildings.
20. A meeting held with officials from European Commission, UK, Austria, Chile and global covenant of Mayors to finalize the MI 2.0 cities mission proposal.
21. DST has formally joined ACT -3 (Accelerating CCS-3) call along with partnering countries to promote and scale up , R&D , Capacity Building and for translation of low TRL technologies to higher level in area of CCUS.
22. Secretary-DST has announced evolvement of possible collaboration between DST-India and DoE – USA under PACE-R umbrella during the India – USA virtual ministerial meeting of the US-India Strategic Energy Partnership (SEP) to review progress, highlight major accomplishments, and prioritise new areas for cooperation on 17<sup>th</sup> July 2020.
23. Provided status report on the progress of 8 Indo-UK consortias under DST-NERC-EPSRC supported INDO-UK Water Quality Research programme projects.
24. Attended Virtual session on the Path to Hydrogen Economy: Decarbonizing with Ministry of New and Renewable Energy (MNRE) and U.S. Department of Energy (DOE) held on July 10, 2020. The session was jointly hosted by DOE

and USISPF and it featured technical experts and leaders in the field of hydrogen production and technology.

## **F. Human Capacity Building**

1. **Women Scientists Scheme:** In this month, 85 Sanctions have been issued of ongoing projects under WOS-A and WOS-B programmes.
  - An online meeting under Women Scientist Scheme-B (WOS-B) has been conducted on 23 July 2020 wherein around 70 women scientists have participated. During this interactive session, various administrative and technical issues faced by PIs during pandemic time have been discussed and resolved by Programme Officers.
2. **Vigyan Jyoti:** Under JIGYASA platform, several webinars and discussions were conducted at different Vigyan Jyoti Knowledge Centres (i.e. Jawahar Navodaya Vidyalayas). Number of special lectures and role model talks such as “*Experiences and Challenges as a Woman Engineer*” by Dr. Neelima Satyam, Head, Discipline of Civil Engineering, IIT Indore; “*Drug Discovery and Development*” by Dr. Geetha Vani Rayasam, Head-Science Communication and Dissemination CSIR, “*What Do We Know What Lies Within*” by First women Physicist honored with Padma award, Prof. Rohini Godbole and “*SKY is not the Limit*” by Dr. Mayilswamy Annadurai, Project Director of Chandrayan I and II; “*Come Fall In Love With Mathematics*” by Shri Manish Jain, Centre for Creative Learning, IIT Gandhinagar; “*Journey in Science*” by Dr Suresh Kumar Balasubramanian, Monash University, Australia; “*Why is Studying Science an Enjoyment: My Story*” by Prof. Chandrima Saha, President of the Indian National Science Academy (INSA) etc. have been organized. A webinar has been conducted on “*Immunity and Mental Health in Pandemic and Concurrent Disaster*” by National Institute of Disaster Management, Ministry of home affairs.
3. **Special Programmes:** Special lectures have been conducted at different JNVs (Leh, Almora, East Khasi Hills, Haridwar, Chandigarh and Bangalore Urban)
4. **Special Online Classes:** Online classes are regularly conducted for girls selected under Vigyan Jyoti. These classes are aiming to build the academic strength and to help students in clarity of concepts and skills to face the competitive examinations. Online Tests have been also organized for all the Vigyan Jyoti students on 5<sup>th</sup> and 19<sup>th</sup> July, 2020.
5. **SATYAM:** Under SATYAM-Special call of Covid-19, 200 proposals have been screened and Expert Committee Meeting also planned for final recommendation.
6. A meeting was organized with British Council for further discussion on GATI programme on 8th July 2020.
7. Division has designated schemes for human capacity building and training to strengthen the National adaptation capacity of Geospatial technologies covering National Programme for academia, government officials and industry; Geospatial Chair Professors etc. The details are as follows:
8. Support has been provided under capacity building programme for developing tools and techniques for integrated resource management and capacity building at various levels to following institutions:

Department of Geography, University of Allahabad, UP; Department of Geography, Jamia Millia Islamia, New Delhi etc.

## 9. **Innovation in Science Pursuit for Inspired Research (INSPIRE) Scheme**

### **INSPIRE Internship**

- 10 INSPIRE Internship Science camp reports were settled.

### **Scholarship For Higher Education (SHE):**

- 256 SHE scholars received their scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.

### **INSPIRE Fellowship:**

- 166 INSPIRE Fellows received their fellowship for pursuing their doctoral degree programme.
- 30 INSPIRE Fellows were upgraded from JRF to SRF.

### **INSPIRE Faculty Fellowship:**

- 71 INSPIRE Faculty Fellow's grant was released for pursuing their Post-doctoral programme.

## **G. Scientific Infrastructure Building**

1. 3 meetings of Advisory Committee of New Generation Innovation and Entrepreneurship Development Centre/ Innovation and Entrepreneurship Development Centre (New Gen IEDC/IEDC) were organized at CBR College of Engineering, Telangana and Jawahar Lal Nehru (JLN) College of Engineering, Shimoga and Shri Chameli Devi Group of Institution, Indore to review the innovation and entrepreneurship related activities.
2. A demo day was organized at Indigram Labs foundation, Block -B1, Mohan Cooperative Industrial Estate, Delhi-Mathura Road, Badarpur New Delhi: 110044.
3. Organized e-meeting of Experts Advisory Committee (EAC) on innovation-Science & Technology Entrepreneurship Development (i-STED) programme to review the ongoing i-STED projects.
4. Coordination with AICTE provided in arranging experts and Jury for Software edition of Smart India Hackathon 2020 team.
5. Governing Board Meeting of the Technology Business Incubators (TBI's) were organized

CIBA, Mumbai (1 Nos) & Goa (2 Nos). Centre for Incubation & Business Acceleration (CIBA) is a technology business incubators based in Goa and Mumbai supporting and nurturing startup companies by providing services such as incubation, modern office spaces, mentoring, networking opportunities, seed funding and rapid prototyping.



ARTI Lab Foundation, B'uru ( 1 Nos) is a unique TBI focused to support Start Ups working on providing solutions for differently able peoples.

Indian Institute Management, Lucknow (Noida Campus) (1 Nos) is a TBI having Trademark L Incubator to nurture high-performance start-ups, especially in the fields of Big Data Analytics, Artificial Intelligence, Blockchain Technology, Industrial IoT, Digital Healthcare, Cloud Services, Virtual Reality, and 3D Printing.

6. EFC document for continuation of schemes under S&T Entrepreneurship Development has been submitted for inclusion in cabinet note of umbrella scheme Innovation, Technology Development and Deployment. A total financial outlay of Rs. 1228 crore for five years (2021-22 to 2025-26) has been proposed for the S&T Entrepreneurship Development. A deeper engagement with Industry, Academia and Entrepreneurial community has been proposed in the EFC.

The portal for NSTEDB has been launched. The portal will be capturing various data fields and give analytical reports which will be useful for monitoring of various programs on innovation and entrepreneurship development of DST.

7. Irrigation Atlas of India - Five Maps and two write up completed.
8. Cultural Heritage Atlas: Completed the atlas with thirty seven maps and write up.
9. Monograph: Delhi: The City of Cities-A Historical Review- Completed write up and maps
10. Tribal Atlas: Eleven Maps Completed
11. Braille Atlas: State Atlas of Andhra Pradesh –Seventeen maps completed write up in English.
12. Survey of India, the National Mapping Agency of the country signed **MoU** with Govt. of Punjab on 2<sup>nd</sup> July, 2020, for Drone based Large Scale Mapping of 13,045 villages.
13. Survey of India, the National Mapping Agency of the country signed **MoU** with Govt. of Rajasthan on 8<sup>th</sup> July, 2020, for Drone based Large Scale Mapping of 46,543 villages.
14. Survey of India, the National Mapping Agency of the country signed **MoU** with Andaman and Nicobar Islands Administration through Secretary Revenue, Andaman and Nicobar Islands Administration on 27<sup>th</sup> July 2020, for Drone based Large Scale Mapping for Revenue area, degraded land and Deemed Forest area.
15. Online Training on Drone Survey & data Processing was organised at IISM Hyderabad on 16<sup>th</sup>, 17<sup>th</sup> and 20<sup>th</sup> July 2020. Total 185 trainees participated in the training on “Introduction to Mapping using UAV Technology”, “Trinity + UAV and its functioning”, “Flight Planning”, “Data downloads from UAV”, “Geo tagging” and “UAV Data processing for generation of Ortho/DEM/DSM and other product”.
16. Online training programme was organized by IISM Hyderabad from 1<sup>st</sup> July to 14<sup>th</sup> July, 2020 on Arc-GIS ESRI platform for officers/staff of Survey of India. Following topics were covered in the training:
  - i. Introduction to NTDB & preparing to create NTDB.
  - ii. Geo-referencing of Topo Sheet and imagery using GCPs.
  - iii. Use of Basic and Advanced editing tools.

- iv. Topology creation and Topology editing.
- v. QA/QC using Data Reviewer.
- vi. EPM & FDC
- vii. Workflow Manager

Around 300 trainees attended the training during the month.

17. Online meeting to review Haryana LSM Project and SVAMITVA scheme was held on 21<sup>st</sup> July 2020, under the chairmanship of Hon'ble Chief Minister, Haryana attended by SGI, PD-LSM(Haryana), SOI Officials and State Revenue & Panchayati raj Department.

18. **Fund for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)**

The Reconstitution of FIST Advisory Board involving Expert Members from different subject Areas was carried out in the Month of July 2020. Approval of Reconstitution of FIST Advisory Board has been obtained from Secretary, DST.

19. **Promotion of University Research and Scientific Excellence (PURSE)**

Meeting was organized on 30 July 2020 about the Restructuring of PURSE with the Chairman and Co Chairman of the newly re-constituted Programme Management Board on PURSE. The new Advertisement of PURSE was finalized in the meeting.

20. **Sophisticated Analytical and Technical Help Institutes” - (SATHI)**

a) The 9<sup>th</sup> meeting of Sophisticated Analytical and Technical Help Institutes (SATHI) -“SATHI Ki Baat” was held on 16<sup>th</sup> July 2020 at DST by involving IIT Delhi, IIT Kharagpur and BHU- Varanasi to review the work progress of recently supported SATHI centres.

b) Five previously shortlisted institute/ university are being invited to participate in the process of setting-up of a new (fourth) Sophisticated Analytical and Technical Help Institutes (SATHI) Facilities in the country. All five institute/ university are sensitized by conveying the “Terms & Conditions” of SATHI program and about its aim which is to widen the base of S&T infrastructure and manpower, S&T led innovation and start-ups, technology development and seeding the cutting-edge, futuristic areas of S&T.

21. **Sophisticated Analytical Instrument Facilities (SAIF)**

a) SAIF Centre at IIT Bombay organized one day Webinar on 'Fundamentals of Imaging in Scanning Electron Microscope (SEM)'.  
b) Transmission Electron Microscope facility was successfully installed at SAIF Centre at Sardar Patel Centre for Science and Technology, Vallabh Vidyanagar, Gujasrat.