

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

Technology Bhawan,
New Mehrauli Road
New Delhi-110016

Dated: 15.05.2020

OFFICE MEMORANDUM

Subject: Monthly Summary to the Cabinet for the month of April, 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 30.04.2020 for information.

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

(Balram Goel)

Under Secretary to the Govt. of India

To,

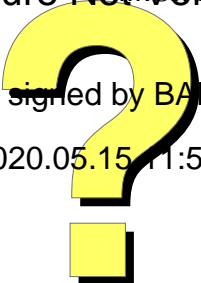
All Members of the Council of Ministers (as per Annexure-I)

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, NITI Aayog, 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. Shri Sanjay Kumar Mishra, Sc. 'G', DST for uploading the Monthly Summary on DST's website. (sanjaykr.mishra@nic.in)
- Secretary, DST. (anuj.tripathi@nic.in)

Signature Not Verified

Digitally signed by BALRAM
GOEL
Date: 2020.05.15 11:53:01 IST



Department of Science & Technology
Monthly Report
April, 2020

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

A. Various Measures taken by DST to address COVID-19

1. A COVID-19 testing laboratory was established in Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum. ICMR approved this facility and screening was started. SCTIMST has filed twenty four patents on the COVID-19 related technologies and four trademark applications have also been filed. Products and Industry tie-ups initiated for addressing the COVID-19 pandemic are indicated below:-

- **AMBU Bag based ventilator system :**

The AMBU based ventilator system with a respiratory mask shall aid the emergency ventilation for breathing trouble in a situation where ventilators are scarce. The advantage based on the AMBU system is that this does not require a bystander support. *The technology is transferred to M/S Wipro Enterprises Pvt. Ltd. (Through Wipro 3D division), Bangalore – scale up in progress.*

- **CHITRA GeneLAMP-N: First confirmatory test kit and in – vitro diagnostic device based on RT- LAMP technique targeting N-Gene in COVID 19.**

This test kit detects the N Gene of SARS COV2 using reverse transcriptase loop-mediated amplification of viral nucleic acid (RT-LAMP). The test kit which is highly specific for SARS-CoV-2 N-gene can detect two regions of the gene which will ensure that the test does not fail even if one region of the viral gene undergoes mutation during its current spread. *The technology is transferred to M/S Agappe Diagnostics Ltd, Kerala – validation in progress*

- **Rapid viral RNA isolation kit (Chitra Magna)**

The technology for RNA isolation was also developed as part of the program which is an indispensable part of the GeneLamp – N. But this RNA isolation can also be used in normal RT – PCR. *The technology is transferred to M/S Agappe Diagnostics Ltd, Kerala – validation in progress*

- **Rapid detection kit for corona virus standardized using antibodies from coalescent plasma sourced from COVID 19 patients**

The product under development aims at generating antibody against SPIKE protein, which can prevent its entry into the host cell, thus inhibits Viral RNA

release. *MoU with M/S Agappe Diagnostics Ltd, Kerala - Development in progress.*

- SCTIMST also signed **MoU with industries for Disinfection Gateway and Examination booth and Sample collection booths, Rapid kit for COVID 19**, 4-zone strategy for the design of mediCAB housing structures for the COVID 19 pandemic, Development of automated workflow for point of care portable ultrasound that can be used in the care of patients with COVID-19 and Isolation pods.
- 2. A multi-disciplinary group of scientists at Institute of Advanced Study in Science and Technology (IASST), Guwahati has **developed a purified air circulating system that can be integrated with Personal protection equipment's used by medical professional to protect against airborne transmission disease like COVID 19**. The design of the device submitted for provisional patent.
- 3. **An Ultra-Violet-C (UVC) based disinfectant trolley was launched by International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad** in collaboration with University of Hyderabad with the help of Mekins Industries Limited. Once successful in field trials, it is expected to help in rapid disinfection of infected areas such as hospitals rooms etc. ARCI also supplied 10 nos. of metal nozzles, fabricated by additive manufacturing, to DRDO for use in dispensing glue for seam sealing of "Bio-Suits" (developed by DRDO) that are personal protection equipment (PPE) used by health care personnel engaged in combating COVID-19.
- 4. Science and Engineering Research Board (**SERB**), **New Delhi under Core Research Grant CRG, selected 5 projects for COVID-19**. Out of these, three are on the issue of antiviral and virustatic surface coating of inanimate surfaces, such as personal protection equipment (PPE); while another one deals with the identification of metabolite biomarkers in COVID-19 infected patients enabling therapeutic target identification; and the last one concerns with the development of antibodies against the receptor binding domain of the spike glycoprotein of coronavirus.
- 5. Under Intensification of Research in High Priority Areas (IRHPA) scheme of SERB, COVID-19 related **projects on Diagnostics/ Vaccine /Drug repurposing were recommended**. These includes the proposal on novel diagnostics platforms for point of care SARS-COV-2 detection; electrochemical based diagnostics for detection of SARS-CoV-2 infection; development and evaluation of diagnostics and candidate vaccines for emerging SARS-CoV-2 ; synthetic reconstruction of an attenuated SARS-CoV-2 virus for vaccine development.
- 6. SERB also supported eleven proposals on Modelling, Analysis and Forecasting of COVID-19 pandemic under MATRICS short term call.
- 7. Scientists at S N Bose National Centre for Basic Sciences (SNBNCBS), Kolkata have developed a **manganese based nanomedicine, to maintain "redox" balance in body's tissues, which is useful to kill virus/bacteria and infected cells**.
- 8. MACS-Agharkar Research Institute (**MACS-ARI**), **Pune has set up COVID-19 testing lab as per the guidelines of ICMR and will start testing after completing the technical formalities**. MACS-ARI also prepared the sanitizer as per WHO standards and donated 1500 sanitizer bottles to Pune Police and 950 bottles to slum dwellers.

9. **Ancient DNA laboratory at Birbal Sahni Institute of Palaeosciences, (BSIP), Lucknow has partnered with a private firm Redcliffe Life Sciences, New Delhi to carry out COVID-19 testing.** BSIP is providing infrastructure including biosafety level covering laboratories that work with agents associated with human diseases (pathogenic or infectious organisms that pose a moderate health hazard) as per ICMR guidelines. The institution also designed the assays and protocols to test the presence and absence of COVID-19 using RT-PCR as per ICMR guidelines.
10. As part of science outreach, Indian Institute of Geomagnetism (IIG), Navi Mumbai published, **six popular science articles in Marathi to raise awareness about the novel corona virus.**
11. **Team of Scientists & Project Staff at Vigyan Prasar (VP), Noida worked closely with various stakeholders from PSA, DST, DBT and CSIR to gather updated content to produce daily and then later, weekly e-Newsletter COVID 19: S&T Efforts in India.** Vigyan Prasar is also producing Covid-19 bulletin on daily basis which is made available to public through Indian Science on OTT Channel and also shared through Face book, Youtube, Twitter and other social media platforms.
12. Several Fellows/Members of Science Academies wrote scientific/research articles on novel CORONA virus. These articles covered several aspects, such as **pathogenicity/virulence, viral-infectivity & its prevention, viral-genomics and the possibilities of vaccine development etc.**
13. Wadia Institute of Himalayan Geology (WIHG), Dehradun provided **200 PPE kits for the Medical Professionals and 200 Ration kits for the needy, to the State Government.**
14. Survey of India has facilitated COVID-19 response activities of state Govt for establishing the **quarantine facility in the DST/SOI owned building at Rangareddy, Hyderabad.** State Govt is using this quarantine facility to keep suspected International travellers arriving from COVID-19 affected countries.
15. **A Special Call under Science and Technology of Yoga and Meditation (SATYAM) to combat with COVID19 has been announced.** Till 30 April 2020, 263 concept notes have been received from all over the country.
16. As an immediate response to global pandemic of Covid 19, Department has invited proposal through **online call under the programme of Centre for Augmenting WAR with COVID-19 Health Crisis (CAWACH) through Society of Innovation & Entrepreneurship (SINE) IIT Bombay, Mumbai.** The 826 proposals has been received in different sectors namely **diagnostic, therapeutics, preventive and analytic etc for the solution of Covid 19 related problems.** The proposals are under process of evaluation by panel of experts.
17. In view of the current COVID 19 situation and its after effects, a Concept Note on the **use of Geospatial Technology addressing COVID 19 and post COVID 19 scenario** has been prepared.
18. A virtual meeting for developing an action plan on **“Integrated Geospatial Platform to address COVID-19 outbreak and its impact at multi levels”** was held on 6th April, 2020. The follow-up action has

been taken accordingly by SOI, NSDI and NATMO as under The www.indiamaps.gov.in/soiapp/ **portal of Survey of India (SOI) is available as the core of the integrated geospatial platform to address COVID 19 outbreak** and its socioeconomic impact. For required data collection pertinent to COVID emergency management, the Sahyog mobile App of SOI has been customized. The collected data is hosted on the above platform and for that a POI has been also created. Data integration process from various States Spatial Data Infrastructure via APIs are being done. Web Map Service is also available and restricted to the Government departments. A dashboard integrating the covid-19 information is also being developed.

- National Spatial Data Infrastructure (NSDI), Department of Science and Technology: The metadata of the various States having State Geoportals have been linked to the NSDI Portal (<https://nsdiindia.gov.in/nsdi/nsdiportal/index.jsp>). In order to integrate the data sets emerging from different agencies in the States for standards-based interoperable data/ application services provision to the end users for fighting COVID-19, many State Spatial Data Infrastructure (SSDI) teams have downloaded the **Sahyog mobile app of SOI for collecting feature level data for COVID-19**. After acquiring, these data sets are being uploaded on www.indiamaps.gov.in/soiapp/ portal. For an example in the Karnataka state, so far more than 100 sample points for testing/ training on Sahyog app by district NRDMS personnel in the State from all 30 districts have been uploaded to the SOI portal. These point of interest data sets are being downloaded via Web Feature Services (WFS) and integrated with State's collateral data for analysis and catalogued on the National Data Registry (NDR) of NSDI. Similarly the GIS cells in all 13 districts of the Uttarakhand are sensitized for using Sahyog app for data collection.
19. For strengthening the Geospatial analytics capabilities of the integrated platform along with develop **the strategy for geospatial solutions in reviving various sectors of the Economy during post COVID-19 scenario**, a brainstorming with a larger group of stakeholders was organized through video conferencing on 17th April, 2020 at 1500 Hrs. The officials from geospatial community of DST, Geospatial Chair Professors, along with many eminent geospatial experts participated in the deliberations and provided their inputs. Follow up action is being taken accordingly. **COVID Katha, a multimedia interactive guide on COVID 19** was launched by Secretary, DST on the Earth Day 22nd April 2020.
 20. Yearlong National Programme on Science, Health & Risk Communication, the **“Year of Awareness on Science & Health” (YASH) with focus on COVID 19 was launched on 29-04-2020** with a special call for proposals on ePMS.
 21. **A report on ‘COVID-19 Crisis: Direct Interventions through S&T based Voluntary Organizations’** was prepared and uploaded on DST facebook page and <http://dsttara.in/>. It has received wide coverage in media.
 22. A brainstorming session was held on Post COVID 19 Restoring Economic Growth: Role of SEED-DST on 23rd April involving Expert Members associated with SEED Division.
 23. DST has given an advertisement for Joint Industry-Institute **Proposals on Nano Coating for anti Covid Masks and nano coating novel material for PPEs**. We have received 231 proposals with almost 184 proposals in during

27.04.2020 till 30.04.2020. In the first meeting of the Expert Committee, 4 proposals from first 12 proposals have been recommended & grants are in the process for release to two proposals.

24. Special theme map prepared for Covid 19, India
 - I. District-wise theme map prepared for COVID affected confirm cases and zonation of COVID affected cases (No.2)
 - II. Health related Infrastructure in India: Location of COVID hospitals under Government, Private and PPP mode
 - III. Location of ICMR Test Labs in India
 - IV. Location of Blood Banks in India
 - V. State-wise distribution of COVID-19 affected population: Confirm, Active, Recovered, Deceased, % of Recovery and % of Death (No. 6)
25. The meeting to discuss Remedial Action, Knowledge Skimming and Holistic Analysis of COVID-19 (RAKSHAK) has been organized online on **15th April 2020** at 1:00 PM online through NeGD virtual meeting portal under the Chairmanship Secretary, DST. Experts from Academia and Industries participated in the meeting and discussed to handling COVID-19 issues through Artificial Intelligence based techniques. Decision to invite Call for proposals for creating an **Artificial Intelligence based Technology Platform (AITP)** has been taken.
26. 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 20th March, 2020. The aim of this call was to strengthen the nation's core capacities in surveillance, infection prevention/ control, laboratory support and in particular the preparedness in terms of isolation and ventilator management of critically ill patients for containing/ preventing the spread of COVID-9.

The Indian industry and the start-up ecosystem have responded enthusiastically to the invitation by the TDB. Nearly 350 companies registered themselves with TDB through online process and a total of nearly 210 applications have been received through online mode.

During the month of April 2020, large numbers of these applications were evaluated in TDB in phased manner. These applications were divided into six categories based on their domains i.e **'IT, IOT & AI', 'Diagnostic Kits', 'Mask & Sanitizer', 'Medical Devices', 'Thermal Scanner' and 'Ventilator'**.

B. Science for Society

1. Development and demonstration of phase change material based 2TR (Ton of refrigeration) prototype model of solar PV based cold storage system for fruits and vegetables to reduce post harvest losses reviewed and progress assessed.
2. An Integrated Approach to Development and Environment in the Power Sector specific to southern region aiming at evidence based policy decisions and clean technology options was reviewed.
3. Programme activities on Integrated Technology Intervention for Sustainable Environment (ITISE) activities for development of aspirational and other environmentally challenged locations initiated.

C. National Technology Mission

1. **The 2nd meeting of the Working Group for National Mission on Interdisciplinary Cyber Physical Systems on 13th April 2020 at 12:00 Noon** under the chairmanship of Shri Anurag Goyal IAS(Retd.), Former Secretary, Ministry of Corporate Affairs, New Delhi, has been organized online through NeGD virtual meeting portal.

Process for setting up of remaining 8 TIHs has been initiated during the month of April 2020. The 8 Technology Verticals for Technology Innovation Hubs (TIHs) has been identified as follows: i) Advanced Communication System ii) Bio-CPS iii) Positioning and Precision Technologies (GIS, Remote Sensing, other noninvasive technologies, etc.) iv) Technologies for finance sector (Fintech) v) Quantum Technologies vi) Cognitive Computing & Social Censoring vii) System Simulation, Modelling & Visualization viii) Data Science, Big Data Analytics and Data curation etc. The 73 institutes have been selected to be invited to submit the proposal and the letters has been sent to all the institutes for submission of nomination of one nodal officer from their institute. The Format for Call for Proposals, selection criteria for selection of Host Institutes (HI), online link for submission, has been finalised.

2. Technical Resource Unit for validating the technologies deployed for mitigating air pollution developed approach for technology evaluation and firmed up templates. This information will be useful for National Clean Air Programme of MoEF/ CPCB.
3. DST provided technical inputs for Pilot study for assessment of reducing air pollution in urban areas by using outdoor cleaning system (sometimes called as Smog Tower).
4. Review of project on Clean coal utilization of Indian coals: carbon capture and pollution control reported design methodology for the novel carbon capture strategies.
5. Review of project on Efficient Microwave Based Clean Coal Technologies for Grinding, Dewatering and Desulphurization of Coals Using Lab Scale Studies revealed potential of microwaves to dewater, improve grindability and increase Gross Calorific Value (GCV)of coal samples.
6. Review of project on molecular anchored nano-zeolite adsorbents for CO₂ capture from fossil fuel power plants indicated their potential efficiency and cost effectiveness.
7. Progress review of project on Design, Development and demonstration of microbial methane generation process from poor to marginal coal bed methane prospects indicated potential.
8. Progress on development of methane drainage technique for extracting methane prior to mining the gassy coal seams under Indian geotechnical conditions indicated that this could contribute to reducing import of fuel by this indigenous resource not exploited so far.
9. A project on Residential building energy demand reduction in India reviewed and reported

- Low cost system for home energy and comfort monitoring.
 - Data bank on residential energy demand, indoor temperature and contextual data.
 - Electricity use, indoor environment, and thermal comfort.
10. Development of alkali-activated low carbon bricks using construction and demolition wastes for energy efficient walling envelopes reviewed and these Low-C Bricks were found relevant for National Mission on Energy Efficient Bricks.

D. Technology Development

1. Review of activities of National Centre for Clean Coal Research and Development reported good progress on :
 - Design, analysis and development of innovative turbomachinery
 - Development of s-steam open loop system

2. Review of National Centre for Development of Advanced Materials and Manufacturing Processes for Clean Coal Technologies for Power Applications reported
 - Prototype development and demonstration of protective coatings for power plant components with improved performance characteristics.
 - Development of grain boundary engineered microstructures targeting improvement in creep rupture life, hot corrosion resistance and liquation cracking resistance
 - Development of design data pertaining to high temperature strength, creep, fatigue, creep-fatigue interaction, corrosion, oxidation, ageing embrittlement, formability and machinability of iron based ODS alloys.

3. Review of UK India Clean Energy Research Institute reported notable progress on
 - Grid, PV and storage integration technologies
 - cost effective storage technology and control interface to minimize the impact of intermittency.
 - inverter technologies suitable for large scale grid integration of PV resources.
 - Development of a solar park displaying a state-of-the-art model of complete solution of solar power integration.

4. India-UK Center for education and research in clean energy reported following progress during review
 - Demonstration of 3 hybrid micro grids (10-20 kW) (Lakshadweep, Mount Abu & Shillong).
 - 12.5 kW, 3 Phase, 4-wire modular DC/AC converter with high frequency transformer isolation capable of operating in grid connected and isolated mode with seamless mode transition.

- AC and DC micro grid test beds with various AC and DC sources integrated.
 - DC circuit breakers for low voltage systems.
 - wireless diagnostic systems for PV modules.
5. An Indo-UK project entitled **“Zero Peak Energy Building Design for India”** reviewed on 08th April, 2020 through Skype. The targeted deliverables of the project are the following:
 - 25 km grid resolution weather data and simulation weather files capable of peak demand prediction.
 - Optimized Ground Source Heat Pump system and dynamic insulation systems for peak demand reduction.
 - Solar based air conditioning system for reducing peak power demand.
 - Grid integration of renewable sources and dynamic controller for grid peak demand reduction.
 6. Community-scale Energy Demand Reduction project reported notable progress on development of software for energy saving calculation of buildings in a community.
 7. Energy Efficiency and Occupant Comfort Management in the Built Environment project reported notable progress in
 - Development of high brightness (~5000 Cd/m²), large area lighting devices (10 cm x 10 cm) at luminous efficacy of 15 lm/W and lifetime (L70) of 10,000 hrs.
 - Design modifications in Variable Frequency Drives (VFD) for Heating, ventilation, and air conditioning (HVAC) systems and steps for power quality corrections.
 8. Review of an energy efficiency project reported development of Smart Performance Roadmap for Airport Terminal Buildings in India leading to development of methodology to implement HVAC, lighting operational controls based on occupancy patterns to reduce energy use using controllers based on transient occupant comfort and improves the accuracy of energy demand forecast based on real time data.
 9. Review of Biomass Derived Nanostructured Cellulose Aerogel Materials for Thermal Insulation in Energy Efficient Smart Buildings revealed good potential as ultra-low thermal conducting material.
 10. The project on development of indigenous and internationally competent technology for future generation refrigerant HFO-1234yf was reviewed and next steps for potential applications identified.
 11. 65 Research Proposals under Water Technology Initiative to explore Research, Technology and Innovation on Nexus of water with Energy, Food, Health were evaluated through 15 remote meetings
 12. Selective coal cutting technology using surface miner for various rock conditions for clean coal production was and notable progress was

observed for development of proto-type experimental cutting drum jointly by IIT(ISM) and L&T, which will be first of a kind in country.

E. International Cooperation

1. The 5th Governing Body meeting of the India-Israel Industrial R&D and Technological Innovation Fund (I4F) was held online on April 1, 2020 through video conferencing under the Co-Chairmanship of Prof. Ashutosh Sharma, Secretary, Department of Science & Technology and Dr. Amiram Appelbaum, Co-Chairman-I4F and Chairman of the Board- Israel Innovation Authority. **The Governing Body recommended three new joint projects under I4F programme.**
2. The Indo-Sweden virtual meetings were held on April 3, 2020 followed by April 27, 2020. The representatives from the Department of Science and Technology (DST), Department of Biotechnology (DBT) and Ministry of Earth Sciences (MoES) from Indian side and the representatives from VINNOVA, FORMASS, FORTE, Sweden Energy Agency, Sweden Research Council and Office of Science and Innovation of Embassy of Sweden, New Delhi from Sweden side participated in this meeting. Both sides agreed to invite the joint **proposals in the following three research areas: Circular Economy, Electric Mobility and Digital Health.**
3. Lucknow University, in association with Federal University (Ceara), organised an **Indo-Brazilian e-symposium on solid state properties of pharmaceuticals on April 29-30, 2020.** This symposium was coordinated by Dr. Poonam Tandon and Dr. Alejandro Pedro Ayala. Approximate 150 participants from India and Brazil have attended this e-symposium and addressed by Vice Chancellor of Lucknow University and Head, International Cooperation, DST during the inaugural session.
4. Conceptualised and articulated India's stand with regard to next phase of Mission Innovation 2.0 through broad stakeholder consultations and interacted with MI secretariat, Analysis and Joint Research Group to get country's perspective included in the agenda for discussions for next phase.
5. Mission Innovation - Smart Energy Grids Innovation Challenge - Resources Unit for Scientific & Technical Center at IIT Roorkee presented the progress and reported action plan for the year.
6. Mission Innovation - Affordable Heating and Cooling of Buildings Innovation Challenge - Resource Unit for Scientific & Technical Analysis, Management and Coordination presented the progress and reported action plan for the year.
7. An interaction meeting with Department of Energy was held for the potential collaborative actions related to advanced materials, sensors and controls, gasification, and converting coal to products.
8. A discussion meeting was held on 24th April, 2020 with DOE USA officials and experts for exploring the **possibility of participation of DST in ACT programme for CCUS technologies and other bilateral interactions with USA** under PACE-R module for capacity building intervention in the area of Carbon Capture Utilisation and Sequestration.
9. Two conference calls were held between DST, India - Swedish Energy Agency (SEA), to finalize guidelines on "India-Sweden" Collaborative Industrial Research & Development Programme-2020 in area of SMART GRID and broad agreement was reached on call guidelines.

10. Online webex Management Board meeting was organized by ERA-Net Smart Energy System on April 01, 2020 for Energy Storage proposals received under Joint call MICall19. On the same day discussion meeting was held on call text related to MICall20 on Digitalization of Energy Systems.

F. Human Capacity Building

1. Innovation in Science Pursuit for Inspired Research (INSPIRE) Scheme

a. Scholarship For Higher Education (SHE):

- 2659 SHE scholars received their scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.

b. INSPIRE Fellowship:

- 25 INSPIRE Fellows received their fellowship for pursuing their doctoral degree programme.
- Declared “INSPIRE Fellowship- 2019” First Level Screening result.

c. INSPIRE Faculty Fellowship:

- 5 INSPIRE Faculty Fellow’s grant was released for pursuing their Post-doctoral programme.
- Declared “INSPIRE Faculty Fellowship- 2019” result and Ninety Nine selected candidates received their offer letter for Award of INSPIRE Faculty Fellowship.

2. “Sophisticated Analytical and Technical Help Institutes”- (SATHI)

The 6th meeting of Sophisticated Analytical and Technical Help Institutes (SATHI) -“SATHI Ki Baat” held on 16th April 2020 at DST by involving IIT Delhi, IIT Kharagpur and BHU- Varanasi to review the work progress of recently supported SATHI centre.

3. The following S&T Indicators publications were brought out by the Division :

- i. **Research and Development Statistics At A Glance 2019-20**
- ii. **S&T Indicators Tables 2019-20**

The above publications have been uploaded on the DST website for wider dissemination among the stakeholders.

G. Scientific Infrastructure Building

1. For FAIR project, 36 Power Converters shipped during last month reached FAIR, Germany this month. 2 Gas Electron Multiplier (GEM) detectors continued taking data in mini-Compact Baryonic Matter (CBM) set-up at FAIR, Germany. The experiment was controlled remotely from India.

2. Development of facility for pulverized coal particle combustion especially looking into flue gas under oxy-fuel combustion using laser diagnostics and also scale up from lab scale to industrial scale burners for coal combustion was reported.
3. **Hon'ble, Prime Minister of India has launched a new Central Sector Scheme "SVAMITVA" on April 24, 2020 funded by the Ministry of Panchayati Raj (MoPR).** Under this scheme, **Drone based mapping shall be carried out for the Abadi areas of all the villages of the country.** The scheme will be implemented in partnership with the MoPR, State Revenue Departments, Panchayati Raj Department and Survey of India (SoI). The scheme will be undertaken as pilot project during 2020-21 for drone based mapping in 06 states viz – Haryana, Maharashtra, Karnataka, MP, UP, Uttarakhand and establishment of CoRS network in the states of Punjab & Rajasthan.

As a stakeholder, Survey of India would be involved as Technology Implementation Agency in carrying out the above scheme. Large Scale Mapping on 1:500 scale of the hitherto unmapped Rural Inhabited Areas using Professional Survey Grade Unmanned Aerial Vehicle/ Drone will be undertaken by SoI. Roles fixed for Survey of India under the scheme are as under:

- a) Establishment of CORS Network
 - b) Drone data capturing
 - c) Drone data processing
 - d) Base map generation and feature extraction.
 - e) Integration of the ownership data as provided by the State departments
 - f) Field Validation.
4. Training to SFS probationers of 2019-21 Course: Training on basic Surveying and Mapping conducted by SOI for SFS trainees of Central academy for state forest service (CASFOS), Dehradun was provided through web based VC. The training included Map reading, Chain survey, Plane Table survey, Levelling, GPS etc.
 5. On the request of the Government of Haryana to monitor movement of people during lockdown, Drone teams have been inducted in three districts namely Rewari, Mahendergarh and Jhajhhar.
 6. SoI has customised a GIS software 'Nain' The great Indian Surveyor. The software is named in honour of Pandit Nain Singh, The Great Indian surveyor who had spearheaded exploration of Tibet region. We have commenced imparting online capacity building programme for the Officers settlement Department of Govt. of Maharashtra for managing their Cadastral records.
