

**No. Misc.1/20/2018-CDN (Vol-II)**  
**Government of India**  
**Ministry of Science and Technology**  
**Department of Science & Technology**  
**(CDN Section)**

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Technology Bhawan,  
New Mehrauli Road,  
New Delhi - 110 016

Dated: 11.09.2019

**OFFICE MEMORANDUM**

**Subject: Monthly Summary to the Cabinet for the month of August, 2019.**

The undersigned is directed to enclose a copy of the Monthly Summary of Important policy decisions taken and major achievements of the Department of Science & Technology for the month ending 31.08.2019 for information.

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



( P. K. Srivastava )

**Deputy Secretary to the Govt. of India**

To,

All Members of the Council of Ministers

Copy with enclosures, forwarded to:-

1. The Principal Scientific Adviser to the Government of India
2. Secretary to the President of India
3. Secretary to the Vice-President of India
4. The Principal Secretary to the Prime Minister, Prime Minister Office, South Block, New Delhi - 110 011.
5. Chairman, NITI Aayog, NITI Bhawan, New Delhi.
6. Vice Chairman, NITI Aayog, NITI Bhawan, New Delhi.
7. Chief Executive Officer, NITI Aayog, NITI Bhawan, New Delhi.
8. All Members of NITI Aayog, NITI Bhawan, New Delhi.
9. The Chairman, Union Public Service Commission
10. Secretaries to the Government of India (as per list)
11. The Principal Director General, Press Information Bureau, Ministry of Information & Broadcasting
12. The Director, Cabinet Secretariat, New Delhi - 4.
13. Shri Sanjay Kumar Mishra, Sc. 'G', DST for uploading the monthly summary on DST's website.
14. Sr. PPS to Secretary, DST.

Department of Science and Technology

Monthly Report

August 2019

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

**A. Science for Society:**

1. Stakeholders discussion meetings related to formulation of national policy on **Scientific Social Responsibility (SSR)** were held in association with Technology Information Forecasting and Assessment Council (TIFAC) for the Western, Northern and southern zones at Goa University, National Institute of Agricultural Marketing (NIAM), Jaipur and Kerala State Council for Science, Technology and Environment (KSCSTE), Trivandrum respectively.
2. Task Force Meeting of **SATYAM** (Science and Technology of Yoga and Meditation) was conducted on 9-10 August, 2019 for final recommendations on new proposals with the aim to encourage interdisciplinary research for **well-being of human society** and **better health care** system.
3. A fresh **special Call for proposals (CFP) for SC/ST category** was processed for imparting advanced training/Workshops and school awareness programme in emerging areas of **Interdisciplinary Cyber Physical Systems** across the country.
4. In order to **popularise science and technology** among the masses, 27 studio based science programmes were produced and 50 episodes were telecasted through DD science. Four episodes of radio programme were broadcasted on Radio during the month.
5. A one-month Orientation Programme for 117 women scientist of 11<sup>th</sup> Batch was held at New Delhi from August 1-30, 2019. The programme cover around 70 lecture on Intellectual Property Right and related matters, 3 days on patent search, patent Office Visit, Industry Visit, Delhi out and few motivational lectures.
6. M/s Yashraj Biotechnology Ltd., Navi Mumbai has successfully completed its project titled "**Development and Commercialization of Recombinant Antigens, Recombinant monoclonal antibodies and Cell Derived Antigens**".
7. A field visit to Sardar Patel Renewable Energy Research Institute (SPRERI), Gandhi Nagar and VIKSAT, Nehru Foundation for Development, Ahmadabad was held during 5-7 August 2019 to evaluate the performance of Core Support granted.
8. National meet of State S&T Councils was held at Hyderabad to deliberate upon integration of new ideas and action plan.
9. A Women Technology Park at Digod Village, District Kota, Rajasthan established appropriate technologies for production of value added agri products: soy milk, soy paneer, mango & lemon pickle, garlic paste etc. Technology from CAZRI, Jodhpur was adopted for preparation of animal feed blocks for cattle and goats. 320 women beneficiaries were trained at WTP.

**B. National Technology Missions**

1. DST organised a review meeting on 28th August, 2019 to ascertain the status of Building Energy Efficiency projects supported to CSIR-CBRI Roorkee. A

project proposal entitled "**Cooling with the heat of automobile exhaust and heat of the Sun**" was also considered for support.

2. For **National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS)**, Scientific Advisory Committee (SAC) and Inter-Ministerial Co-ordination Committee (IMCC) have been constituted and submitted for approval of Hon'ble Minister for Science & Technology and Earth Sciences.
3. For National Mission on Interdisciplinary Cyber Physical System (NM-ICPS), Mission Governing Body (MGB), and empowered body was constituted and notified with the approval of PMO and the Hon'ble Minister for Science & Technology and Earth Sciences. First meeting of the MGB has been scheduled for 11<sup>th</sup> September, 2019.
4. An Apex Committee Meeting on **National Mission on Quantum Technology and Applications (NM-QTA)** was organized on 24<sup>th</sup> August, 2019 to finalize the contours of the Detailed Project Report (DPR).

### C. Technology Development

1. DST is facilitating Indian Oil R&D and Tata Motors Limited to setup a test facility to optimize **Liquefied Natural Gas (LNG) fuelled Heavy Duty Engines**. This will add to basket of fuels currently being explored for long term energy security with energy efficiency.
2. ONGC and TERI are partnering under DST aegis to explore generation of **methane from depleting coal bed methane wells** using microbial process. This will increase indigenous generation and will reduce the export of methane.
3. DST supported a project to IIT Delhi to develop a full-fledged innovative **EV operational charger** along with a controlling software application. DST facilitated BRPL and IIT Delhi interaction to facilitate commercializing.
4. The status of **WAYU device** for air pollution control & Land-fill fire project was discussed.
5. IIT Delhi and Galgotias College of Engineering and Technology are embarking to design and develop a **low cost renewable geothermal pile system for cooling of buildings**. This could be a potential solution for providing affordable cooling.
6. Two technologies viz. "**Non-invasive Quantitative Estimation of Bilirubin in Blood**" and "**Non-invasive detection of Oxygen deficiency in blood**" developed by SN Bose National Centre for Basic Sciences, Kolkata were transferred to a start-up company on 27<sup>th</sup> Aug. 2019 through National Research Development Corporation (NRDC), New Delhi.
7. TIFAC has initiated preparation of Detailed Project Report (DPR) for Mission document on Seaweed Resources, which has immense potential towards contributing to National economy and employment generation.
8. Seventeen studies to be undertaken by individual scientists of TIFAC this year have been finalized in areas such Bio-ceramics, Macro and Micronutrient and Energy Storage Technologies.

### D. International Cooperation

1. The **4th Joint Committee Meeting (JCM) on Science and Technology Cooperation** between India and Sri Lanka was held on August 14, 2019 at New Delhi, India. Both sides agreed to initiate cooperation in the area of Renewable energy, Information and Communication technology, waste management, Science popularization and Technology incubation and acceleration and further strengthen the cooperation in the area of Food Technology and biofertilizers. India and Sri Lanka will work together **for human capacity building** by training and fellowships; and to develop mechanisms to **deploy affordable technologies to improve the life of their societies**.

2. DST led discussions on '**Thermal Comfort**' with the co-leads (UK, EU & UAE) of Mission Innovation Challenge 7 (IC7).
3. MoU on **BRICS STI Cooperation** has gained strong foothold ever since stable funding of US\$ 10 M is committed annually by 8 funders from 5 BRICS countries for funding BRICS R&D Projects. DST, India continues to allocate US\$2 million equivalent annually (2017 onwards).
4. BRICS R&D project based partnerships are offering a ground for **advancing BRICS scientific identity** by any of co-creation of new scientific knowledge and enhance research competencies of S&T talent.
5. As on date, Indian researchers are most sought after and feature in 49 of the 58 on-going **BRICS R&D projects** (2017 onwards). Research topics wherein Indian presence is significant are: advanced materials, photonics; biomedical sciences; and energy.
6. 2019 BRICS Call has resulted in 175 BRICS R&D Proposals involving India researchers. Three Expert Meetings were conducted at IISc Bengaluru during Aug.6-8,2019 for **India's national scientific evaluation** of 97 applications in thematic areas of Advanced Materials, ICT and HPC and Astronomy.
7. Collective short listing of 2019 BRICS R&D Projects for funding, by all five countries will be decided in the upcoming **4<sup>th</sup> BRICS S&T Funders Party Meeting** at Campinas, Brazil (Sept.16-17,2019).
8. The sixth meeting of **India-Nepal Boundary Working Group** (BWG) was held in Dehradun, India from 28<sup>th</sup> to 30<sup>th</sup> August, 2019 in which it was decided to prepare a detail plan for establishing the common framework; India Nepal Boundary Reference Framework (INBRF) by carrying out Global Navigation Satellite System (GNSS) observation on already agreed and constructed monuments. It was also agreed that UAV/Drone Survey methodology may be used for preparation of No-Man's Land Encroachment and Cross Border Occupation Map sheets as UAV/Drone Survey is the state-of-the-art surveying methodology being used worldwide and it provide precise and accurate deliverables in a short period, both sides agreed to use this methodology.

#### **E. Human Capacity Building**

1. 120 candidates selected under 11<sup>th</sup> Batch of Women Scientist Scheme-C (**WOS-C**) have attended one-month **Orientation Programme** conducted during 01-30 August, 2019.
2. Selection Committee Meeting was conducted on 22<sup>nd</sup> August, 2019 to select 2<sup>nd</sup> batch of women scientists for **US visit under WISTEMM** (Indo-US Fellowship for Women in STEM).
3. The first meeting of **newly constituted PAC of CHORD NSTMIS Scheme** was held at Andhra University, Vizag (AP) during 29-31st August, 2019.
4. A DST sponsored 3-day workshop on '**Current Trends in Food Biotechnology**' was inaugurated at National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonapat, Haryana in collaboration with National Agri-Food Biotechnology Institute (NABI), Mohali, Center of Innovative and Applied Bioprocessing (CIAB), Mohali and Biotechnology & Bio-process Center of Excellence, Addis Ababa Science and Technology University, Ethiopia. Around 42 participants including students and scientists from different colleges and universities of India and Ethiopia participated in the workshop. A **Memorandum of Understanding (MoU)** was also signed between NIFTEM and NABI.
5. Indian team consisting of 18 undergraduate students participated in **3<sup>rd</sup> Asian Science Camp**, held in Shantou, China during July 28 - August 3, 2019. These students were selected and nominated from top Indian research institutions based on their KVPY certification, over all merit and academic records. The camp provided them an opportunity to meet Nobel laureates, interact & exchange scientific ideas with international scientific community and **won 06 medals in different events**. The camp was attended by over 300

- students from all over Asian countries including Japan, Russia, China, Pakistan, Bangladesh, Israel and Australia.
6. Dr. Fabiola Gianotti, **Director General**, European Organization for Nuclear Research (**CERN**), Geneva visited **Vigyan Samagam**, the multi-venue **Mega Science Exhibition** being organized by DAE and DST, on 30.08.2019 at Bengaluru and delivered a **Public Lecture** which greatly motivated students, teachers and researchers and informed them about the excitements and challenges of building and operating very large facilities for doing fundamental scientific research at the cutting-edge.
  7. **INSPIRE Program** of DST has been initiated with the objective to attract, motivate, nurture and train talented and meritorious students to study science subjects and opt for careers in Research and Development.
    - a) **INSPIRE Fellowship:**

Two meetings of the Expert Committee for considering the INSPIRE Internship Proposals under the INSPIRE Program was organised. In these meetings, Committee considered 56 **INSPIRE Internship proposals** for organising the INSPIRE Internship Camps from all across the country. Out of 56 proposals, only 27 proposals covering 4690 INSPIRE interns were recommended for support.
    - b) **Scholarship For Higher Education (SHE):**
      - 878 SHE scholars received their scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.
      - 59 INSPIRE Scholars/ visitor's queries were responded.
    - c) **INSPIRE Fellowship:**
      - 195 INSPIRE fellows received their fellowship for pursuing their doctoral degree program.
      - One INSPIRE Fellowship Review meeting was organized at Mumbai in which 109 INSPIRE Fellows research progress was monitored by the respective subject experts.
    - d) **INSPIRE Faculty Fellowship:**
      - Against the call of applications for award of INSPIRE Faculty Fellowship advertised till 31<sup>st</sup> August, 2019 1135 online applications are in receipt.
  8. Several Departments and Agencies under various Ministries of the Government are sponsoring many extramural and intramural R&D projects every year. These projects have been sanctioned with well-defined objectives for a specific duration. A large number of scientific / technical personnel, other than Junior Research Fellow (JRF) / Senior Research Fellow (SRF) / Research Associate (RA) are inducted into these projects. In order to identify the type of scientific / technical manpower, other than JRF/SRF/RA suitable for R&D projects and to formulate guidelines for their management including recruitment and remuneration etc., the Department had constituted an Inter-Departmental Committee. Based on the recommendations of the Inter-Departmental Committee, the Department has approved **specific manpower positions suitable for inducting in R&D projects**. An Office Memorandum (SR/S9/Z-05/2019 dated 20 August 2019) issued in this regard serves as guidelines for remuneration, essential qualification and upper age-limit for such scientific / technical manpower in projects.

#### **F. Scientific Infrastructure building**

1. For the **Thirty Metre Telescope (TMT) Project**, 20 sophisticated and complex actuators were sent to the Project Office in USA and are undergoing life tests at the Jet Propulsion Lab (JPL) at Pasadena, California, USA.
2. The professional management structure along with specific terms and conditions of "**Sophisticated Analytical and Technical Help Institutes (SATHI)**"- centres were discussed with stakeholders and finalized in August 2019. Recommendation letters were conveyed to the three shortlisted SATHI

institutes i.e IIT Delhi, Banaras Hindu University and IIT Kharagpur to set-up a shared, professionally-managed, **Science and Technology infrastructure** facility.

3. Screening Meeting in PG Colleges and Chemical Sciences area & Presentation Meeting in Life Sciences and Earth & Atmospheric Sciences Area were held in August 2019 under “Fund for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)” which is flagship program of Department for **Scientific Infrastructure Building**.
4. Investigators from DST-MECSP (Materials for Conservation and Storage Platform) centres presented target deliverables and their approach in the First Kick Off Start cum Review Meeting held on 23rd August 2019. These centres are multi-institutional teams with 20 plus researchers in each team working on materials and **next generation devices in Batteries, Super capacitors, Hydrogen Storage and Fuel Cells**.
5. Memorandum of Understanding (MoU) was signed between Delhi Development Authority (DDA) and Survey of India (SoI) on 23rd of August, 2019 for preparation of Geographic Information System (GIS) based Base Map of Delhi and for providing access to all GIS data prepared by Surveyor of India, required for preparation of GIS based Master Plan for Delhi -2041. Provisions to the access to various technologies have been included in this document for the benefit of DDA to enable them for preparation of GIS base Master Plan for Delhi-2041.
6. The objective of the **Geospatial** Cloud project has been to establish a **proof-of-concept Geospatial Cloud Platform-based Data Centre and demonstrate its utility in updating and sharing high resolution (2D/ 3D) geospatial data**. The DST/ NSDI Technical Committee (TC) on “Geospatial Cloud” met at NSDI, New Delhi on 07 August 2019 and reviewed the technical progress. Required hardware, software, and connectivity items have been delivered and installed for access by stakeholders.
7. The concerned Technical Committee (TC) met in Dehradun on 08 Aug 2019 to review the implementation of the Uttarakhand Geoportal and **establish the process to update the underlying data sets**. It has been decided by the State Govt. to transfer management of the Geoportal Infrastructure to the Uttarakhand Space Application Centre (USAC) for its sustained utilisation. State SDI Nodal Officers’ met on 16 August 2019 and **decided to support the data certification process** for maintaining the Geoportal.
8. The **Open Geospatial Consortium (OGC)-India Forum** met at Hyderabad on 23 August 2019 for deliberating on the progress made on adoption of OGC standards and deciding on future strategies. Besides NSDI, presentations were made on standards usage by several agencies of **OGC standard specifications like CityGML, Web Feature Service (WFS); Catalogue Service on Web (CS-W)** etc. for building the nationwide geospatial data infrastructure that would **automate geospatial data sharing**.
9. The Central Geological Programming Board (CGPB) Committee XI on ‘Geo-informatics and Geo-data Management’ of the Ministry of Mines met at GSI, Kolkata on 29 Aug 2019 to deliberate on improving the management of related data sets. A technical presentation was made by NSDI highlighting the **utility of service-oriented architecture** that would be **adopted by GSI in implementing the National Data Registry (NDR)** as one of the six partnering agencies of NSDI.