

**Department of Science & Technology**  
**Monthly Report**  
**July, 2019**

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

1. IIM Ahmedabad with DST support developed innovative Peer to Peer Energy Trading Platform based on Block chain technology which evinced interest by Telangana Government for potential deployment in Telangana.

2. A Review Meeting of UI-ASSIST, India-US consortium of 30 research and industry partners working to develop flexible, secured, green grids powered by robust communication and advanced controls aim for sustainable electrical systems capable for renewable integration was held on 22nd July 2019 at IIT Delhi..

3. DST organised an Interaction Meeting on Smart Grids on 22nd July 2019 at IIT Delhi to disseminate the outcomes of Mission Innovation (MI) Ministerial to academicians, industry and utilities. Strengths and contributions of MI member countries were mapped for potential synergies on the Programme of works (PoWs) and adoption of best practices.

4. A Collaboration Meeting was organised by DST on 25th July, 2019 to discuss about possible collaboration with US-DOE in the field of clean coal technologies and carbon capture utilisation and storage.

5. An Indigenous Photonic System for real time remote monitoring of Air quality was reviewed.

6. DST organised a kick-off meeting between IIT(ISM) and L&T on 29th July, 2019 at DST on the project for developing indigenous drum design methodology for surface miners and selective coal cutting technology for various rock conditions for efficient clean coal production.

7. A total of 445 intent to apply forms have been received under Global Cooling Prize (GCP) from over 56 different countries. Notably, 122 submissions were made from India. The applications reveal an interesting diversity of technologies coming from Start-ups, Universities, Research Labs, non-profit organizations and other individual entrants.

8. The review of implementation of DST (WTI) supported Arsenic and Metal Removal by Indian Technology (AMRIT) developed by IIT Madras, Chennai. In North 24 paraganas brought out that 19 such systems have been installed so far and 20 more locations identified. The interaction with community revealed their satisfaction and happiness over technology performance and utility.

9. An integrated water quality sensing and locally available material based mitigation programme has been mounted by Tripura State Council for Science and Technology (TSCST), Agartala with DST-WTI support to address water related challenges.

10. India-UK Joint Review meeting was held from 9<sup>th</sup> to 10<sup>th</sup> July 2019 in London, UK for mid term review of 8 India-UK bilateral projects supported under the Water Quality Research

program. The review meeting revealed interesting funding in addressing various issues related to fluoride, arsenic, microbiological contamination. The work done by several groups in disaster mitigation and water scarce areas was commended. Water quality instrument such as Sechi disk and drone monitoring system were particularly appreciated.

11. A review meeting was held on 17th - 19th July 2019 at New Delhi to review 33 proposals under Material for Energy Storage 2017 projects. Out of 33 proposals, 5 projects were graded excellent. These proposals have the potential to lead to the development of technologies related to wearable supercapacitors, flexible supercapacitors, thermal energy storage system, lithium sulphur battery etc.

**13. India ASEAN S&T Collaboration:** 47 ASEAN researchers/scientists have been selected for award of ASEAN India Research & Training Fellowships for carrying out research training at Indian institutes for a period of 2-6 months. 21 ASEAN India collaborative R&D projects have been approved for implementations for a period of 2 years at a cost of approx Rs 30 lakh per project.

**14. BRICS STI Cooperation:** Under BRICS third Call for Proposals, 215 eligible project proposals were received in ten thematic areas. The national scientific expert committee meetings for evaluation of these proposals were held. The expert committee meeting for biotechnology and biomedicine was held at Jamia Hamdard University Delhi on 23 July 2019 while the expert committee meeting for Water Resources and Pollution treatment; Geospatial Technology Application; Natural Disaster Prevention and Management and ; Ocean and Polar Science & Technology was held at Andhra University Visakhapatnam during 29-31 July 2019. Several project proposals in the said areas were recommended for consideration for funding support.

**15. Activities Supported under TARA:** A consultation workshop on TAP-RISE (Technology Acceleration Platform for Rural Innovation and Social Entrepreneurship) involving Core Support Groups (SEED, DST) and stake holders was held in Pune on 25<sup>th</sup> July, 2019 to discuss challenges & opportunities to accelerate impact of technologies through ecosystem building by involving Core Groups for the benefit of Rural Communities. Proposed technology accelerator platform aims to contribute towards growth in rural entrepreneurship, economic value addition & social development with quality services at the grassroots level etc.

16. Screening of proposals received under 2019 SYST Call for proposals was done on 11-12 July 2019.

17. NCSTC participated in a joint meeting called by Secretary, DST & Secretary, Ministry of Culture on 15<sup>th</sup> July 2019 at Shastri Bhavan on collaborative launch of 25 New Mobile Science Exhibition (MSE) Buses for the Aspirational districts during first 100 days of the Government

18. 1<sup>st</sup> Meeting of Working Group for "STEMM-Mobile Science Exhibition (MSE) Buses" was organized in DST on 24<sup>th</sup> July 2019.

19. Workshop on Popular Science Writing under AWSAR programme was held in collaboration with Vigyan Prasar on 1<sup>st</sup> July 2019 at IIT Delhi.

20. Science Media Research Orientation Meet was held in Barmer, Rajasthan on 25-27<sup>th</sup> July 2019
21. Eco-Eureka training for students was held at Bhujan (Tarikhet), Almora on 08-13<sup>th</sup> July, 2019.
22. Eco Dialogue & Consultations were held on 27<sup>th</sup> July (Hindoli, Bundi, Rajasthan) and 28<sup>th</sup> July 2019 (Indore, MP) as part of a series to encourage youth eco talent development & support Training of Trainers from HP, Uttarakhand, MP & Rajasthan.
23. For National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS), Mission Governing Body (MGB) was constituted and notified with the approval of PMO and the Hon'ble Minister for Science & Technology and Earth Sciences.
24. Scientific Advisory Committee for National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS) was finalized.
25. A fresh special Call for Proposals (CFP) for SC/ST category was processed for imparting advanced training/Workshops etc. in emerging areas of ICPS across the country.
26. As an outcome of the interactive meeting for the DST sponsored School Awareness Programme under Schedule Tribe (ST) Category of ICPS Programme, all the PIs were advised to submit plan of actions, schedule and model of implementation of the said awareness programme in the assigned aspirational districts at the earliest to DST.
27. DST has sanctioned Building Awareness Programme under Schedule Tribe (ST) Category under ICPS Programme of DST for the Children studying in class 6 to 8 in Government Middle Schools in all the 115 Aspirational Districts. First such programme was started in Darrang District of Assam on July 08, 2019. 100 Government Middle Schools in each of the Aspirational Districts in the State was selected by the District Administration, including Darrang, Assam. 2 teachers from each of the 100 schools in the Darrang District was selected for the programme. An AI enabled Robotic Kit/gadget was provided to the teachers. A training cum interactive session was also arranged. A visit of the schools was also arranged to see the field functionaries. Officials of Education Department of Assam has participated in the programme.
28. Working on new user friendly interactive PI proposal dashboard in e-PMS. Some User specific issues related to schemes has been resolved and implemented on the server. Provision for entering Foreign PI has been integrated in e-PMS. In e-Office, e-File version 5.5\_12 has been deployed, which has some bug fixes.
29. Policy decision on applicability of GLP certification to Medical Devices was made by the Technical Committee on GLP in its meeting held on July 15, 2019. It has been decided that GLP certification would be granted to Test Facilities (TFs) conducting safety testing on Medical devices only after the registration of respective TFs as "Medical Devices Testing Laboratory" by CDSCO as per Medical Devices Rules, 2017.
30. Brain Storming Meeting on development of Indian model for Gender Audit based on UK's Athena SWAN Charter was conducted on 16 July 2019 in JNU, New Delhi. This model will be

developed in collaboration with British Council. This will bring Institutional reforms for gender parity.

31. Subject Expert Committee Meeting on 'Engineering and Technology Development' under WOS-B Programme was conducted on 18-20 July, 2019 at BHU, Varanasi.

32. Subject Expert Committee Meeting on Engineering and Technology under WOS-A Programme was conducted on 29-31 July, 2019 at CEPT University, Ahmedabad.

33. Faculty Development Programme on Artificial Intelligence under CURIE was conducted at Indira Gandhi Delhi Technical University for Women, Delhi during 17-21 July, 2019.

34. **INSPIRE Internship:** One meeting of the Expert Committee for considering the INSPIRE Internship Proposals under the INSPIRE Program was organized. In this meeting, Committee considered 32 INSPIRE Internship proposals for organizing the INSPIRE Internship camps from all across the country. Out of 39 proposals, only 13 proposals covering 2250 INSPIRE interns were recommended for support.

**35. Scholarship For Higher Education (SHE):**

- 9771 offer letters to SHE scholarship students was sent for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.
- 120 INSPIRE Scholars/visitor's queries were responded.

**36. INSPIRE Fellowship:**

- 771 INSPIRE Fellow's applications were evaluated by level 2 expert committee for award of INSPIRE Fellowship for pursuing doctoral degree program. Out of 771 applications 482 applications were recommended for support and accordingly candidates were intimated for the award of the fellowship.
- One INSPIRE Fellowship Review meeting was organized in which 97 INSPIRE Fellows progress was monitored by the respective subject experts.

**37. INSPIRE Faculty Fellowship:**

- 3 INSPIRE Faculty Fellow's Fellowship was released for pursuing their post doctoral program."
- The call of applications for award of INSPIRE Faculty Fellowship was advertised for inviting applications from fresh applicants.

38. "Fund for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)" Screening Meeting in Earth & Atmospheric Science Area, Physics Area, Engineering & Technology and Mathematics Area were held in July, 2019. Proposals received

were evaluated by the subject Expert Committee in this meeting and finally screened in proposals were called for presentation.

39. “Sophisticated Analytical and Technical Help Institute”- (SATHI)

First year equipment were finalized in consultation with the shortlisted SAATHI institutes and expert committee and the proposed budget of the equipment is revisited in details. Meeting of Experts Committee under the Chairmanship of Secretary, DST was held on 26<sup>th</sup> July, 2019 at IIT Bombay, Mumbai to discuss the Management Structure to be adopted and Terms and Conditions to be decided for operation of New SATHI Centres.

40. Meetings of National Steering Committee and Advisory Committee towards formulation of Scientific Social Responsibility (SSR) were held in association with TIFAC on 3<sup>rd</sup> July, 2019 and 18<sup>th</sup> July, 2019 at IIC New Delhi. In addition, a Stakeholders discussion meeting on SSR for the Eastern zone was held at CSIR-CGCRI, Kolkata on 29<sup>th</sup> July, 2019.

41. Dr. Akhilesh Gupta, Head SPLICE attended the meeting of the “ *Inventory and Revival of Springs in Himalayas for Water Security*” held on 12<sup>th</sup> July, 2019 at NITI Aayog, New Delhi and briefed about the recent initiatives taken by the Department of Science & Technology on Inventory and Revival of Springs in Himalayas .

42. Dr. Susheela Negi, Scientist-E attended the meeting of the “*Data/Information for Informed Decision Making by Multiple Stakeholders*” held on 11<sup>th</sup> July, 2019 at NITI Aayog, New Delhi.

**43. DST-CII Technology Summit:** A preparatory meeting was held with Mr Maarten Camps, Secretary General, Ministry of Economic Affairs and Climate Policy of Kingdom of Netherlands to brief this year’s Technology Summit, to be held on October 15-16, 2019 at New Delhi. This will be organize in partnership with CII as ‘Annual Flagship Event’ of DST with an objective to facilitate Technology Transfer, Joint Venture, Joint R&D, Joint Projects & Market Access between India and Partner Country’s Industry & Research Institutes.

Mr. Camps also met with Hon’ble Minister for Science & Technology, Earth Sciences and Health Dr Harsh Vardhan on 24<sup>th</sup> July 2019 to strengthen India’s collaboration in the fields of healthcare, Water & Agriculture.

**44. Announcement of India-Bulgaria Joint Research Projects 2018:** An India-Bulgaria joint call 2018 under India-Bulgaria Bilateral Scientific and Technological Cooperation was issued by the Department of Science & Technology (DST) of the Indian Republic and the Ministry of Education and Science (MES) of the Republic of Bulgaria for inviting Indian and Bulgarian scientists to submit their joint proposals in the areas of information and communication technologies; materials and materials science; physics including laser science and technology, nuclear science, astronomy and space & technology research; chemical sciences; Renewable Energy; Earth science, geophysics, climate studies, oceanology and environmental protection, including waste management; Biotechnology, agriculture and food technology; Healthcare,

biomedical appliances, bioethics, pharmacy and traditional medicine and Social studies related to science and technology.

A total 71 joint proposals were received against this Call. These projects were evaluated independently from both sides as per their national guidelines and conditions mentioned in joint call. After an exchange of individual evaluation results and further negotiations, both sides jointly approved a total of Sixteen (16) joint proposals for funding during the years 2019-2021.

**45. Announcement of India-Australia Joint Research Projects 2018:** A joint call was issued by the Department of Science & Technology (DST), India and the Department of Industry, Innovation and Science (DIIS) of the Australia under Australia-India Strategic Research Fund (AISRF)-Round 11 in the areas of (i) Energy Storage (Batteries) and (ii) Marine Science. In response to the call, 20 project proposals were received by both sides. After judicious assessment based on scientific strength, technical aspects, project objectives and national priorities of both the countries, the Department of Science & Technology of the Indian government and the Department of Industry, Innovation and Science of the Australian have jointly decided to support one joint project proposal in the area of Energy Storage.

**46. India-South Africa Call for Joint Proposals 2019:** The Department of Science and Technology (DST), India with partnership of the National Research Foundation (NRF), South Africa announced the 6<sup>th</sup> bilateral call to invite joint research project proposals from the Indian researchers and their South African counterparts in the research areas of advanced materials incl. manufacturing, biotechnology and renewable energy.

**47. India-South Africa Call for Joint Proposals 2019:** The Department of Science and Technology (DST) and the Japan Society for the Promotion of Science (JSPS) launched joint call for proposals under the India-Japan Cooperative Science Programme (IJCSF) in the areas of Fundamental Sciences: Physical and Chemical Systems, Materials and System Engineering: Man-made Systems, Natural Systems: Life Sciences and Bioengineering, Astronomy, Space, Earth System and Sciences, and Mathematics and Computational Science to promote bilateral scientific collaboration between Indian and Japanese scientists.

**48. India Poland Joint Call for Proposals 2019:** Department of Science & Technology and Polish National Agency for Academic Exchange – NAWA (Poland), have launched a joint call for research proposals in research areas including Natural Sciences, Engineering and Technology, Medical and Health Sciences, and Agricultural Sciences.

49. TIFAC initiated preparation of Policy Paper on Scientific Social Responsibility project for which seed was sown by Hon'ble PM in 104<sup>th</sup> Indian Science Congress in 2017 at Tirupati.

50. TIFAC has initiated a study on Emerging Energy Storage technologies: Technology Forecasting and Impact Assessment.

51. Indian Patent have been granted with patent number 315732 entitled “The Transition Metal Carbamates of 4-Methylpiperazine-1- Carbamic Acid with Copper (II) and Zinc (II) and their synthesis” on July 9, 2019. Himachal Pradesh University is an applicant.

52. Selection process of 11<sup>th</sup> batch of KIRAN IPR have been completed for one year training on IPR.

53. As a Follow-up of during a PMO's Scientific Advisory Committee Meeting as suggested by PSA to DST initiate a National Mission on Quantum Technology Application, as suggested by DST, a draft proposal for 'preparing DPR for National Mission on Quantum Technology Applications is being prepared for submission to DST.

54. Indian National Science Academy (INSA) Annual General Meeting was held at INSA premises on 26 July, 2019. The following activities (obituaries / elections / awards) were organized:

The sad demise of Dr Hari Krishan Jain, Professor Satish Chandra Maheshwari, Professor Sudhir Pradyumna Pandya, Professor Awadh Kishore Prasad Sinha and Dr Bidare Venkatasubbaiah Subbarayappa, distinguished Fellows of the Academy were reported.

- Council for 2020.
- 29 Indian scientists elected as INSA Fellows.
- 3 Overseas scientists elected as Foreign Fellows.
- 12 Teachers awarded INSA Teachers Award.
- 30 young scientists awarded INSA Medal for Young Scientist Award.
- Professor Har Swarup Memorial Award is offered to Dr Mahak Sharma, Department of Biological Sciences, Indian Institute of Science Education and Research, Mohali for her paper entitled : *The Dynein Adaptor Hook2 Plays Essential Roles in Mitotic Progression and Cytokinesis* published in *Journal of Cell Biology*, doi: 10.1083/jcb.201804183 (2019).

55. Shri S.P Mishra, Deputy Executive Director-I (Scientific) and Project Investigator of the India-UK Water Quality Research Programme visited UK to attend India-UK Joint Review Meeting for midterm evaluation of projects during 9th-10th July, 2019.

56. Professor Pulickel M. Ajayan, Benjamin M. and Mary Greenwood Anderson Professor of Engineering and also Chair of the Department of Materials Science and Nano Engineering Rice University, USA awardee of Jawaharlal Nehru Birth Centenary Medal-2019 delivered the Award lecture on July 19, 2019 at Indian Institute of Science, Bengaluru.

57. International Science Council National Committee Meeting was held at INSA on 25 July 2019.

58. During the month, Four Indian scientists visited abroad under INSA Bilateral Exchange Programme.

59. 4 Indian scientists supported by the Academy for attending NON-ICSU sponsored international conferences abroad.

60. A special volume on *Indian Science Transforming India* edited by Professor LS Shashidhara, FNA has been published in Hindi and released on July 26, 2019.

61. Annual Report 2018-19 has been compiled and is in press.

62. A one day lecture programme "Studies in History and Philosophy of Science" along with the meeting of Research Council and Indian National Commission for History of Science was organised on 18-19th July 2019 in which eight papers were presented.

63. In the Research Council and Indian National Commission for History of Science (RCNC) meeting on 19th, presentations were made by four shortlisted nominees of INSA Young Historian of Science Award-2019 and Dr Aditya Kolachana's (IIT, Bombay) name was recommended for 2019 award.

64. Interactive Meeting of Summer Research Fellows and their Mentors with the Academies, was held on 8<sup>th</sup> July at INSA Auditorium.

65. National Education Policy Discussion meeting was held at INSA premises on 22 June and 7 July 2019.

66. Science and Engineering Research Board has approved the launch of following schemes / programmes:-

- SERB-TETRA (Technology Translation Award): SERB-TETRA will challenge scientists executing SERB grants, such as Core Research Grant, to establish an effective, functional and synergistic working collaboration with an industry partner to elevate their breakthrough results and technologies to TRL level 5 and beyond.

TETRA Support will help entities having successful ideas to kickstart new venture processes. With a seed capital, flexible working spaces and interaction between mentor and start-up entrepreneurs, the SERB-TETRA will expand the scope by providing numerous networking opportunities, followed by presenting the finished prototype to an audience of large investors, established MSMEs and private companies, and public sector enterprises.

- SERB-SUPRA (Scientific and Useful Profound Research Advancement): SERB-SUPRA scheme is designed to profile on high quality proposals consisting of new hypothesis or challenge existing ones and provide 'out-of-box' solutions. Transformative and disruptive research concepts based on innovative and unproven hypotheses, possessing a high degree of uncertainty, yet having conviction to produce a lasting impact across discipline boundaries qualify for support under SERB-SUPRA.

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