

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

Technology Bhawan,
New Mehrauli Road
New Delhi-110016
Dated: 16.07.2021

OFFICE MEMORANDUM

Subject: Monthly Summary to the Cabinet for the month of June, 2021.

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 30.06.2021 for information.

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

(Pulok Sen Gupta)
Under Secretary to the Govt. of India

To,

All Members of the Council of Ministers

Copy with enclosures, forwarded to:-

- i. Vice Chairman, NITI Aayog, NITI Bhawan, New Delhi. (vch-niti@gov.in)
- ii. The Chairman, Union Public Service Commission (chairman-upsc@gov.in)
- iii. Chief Executive Officer, NITIAayog, NITI Bhawan, New Delhi (ceo-niti@gov.in)
- iv. The Principal Secretary to the Prime Minister, Prime Minister Office, South Block, ND (pkmishra.pmo@gov.in)
- v. All members of NITI Aayog, NITI Bhawan, New Delhi. (vk.saraswat@nic.in, rc.niti@gov.in, vinodk.paul@gov.in)
- vi. Secretary to the President of India. (secy.president@rb.nic.in)
- vii. Secretary to the Vice-President of India. (secyvp@nic.in)
- viii. Principal Scientific Advisor to the Govt. of India. (vijayraghavan@gov.in)
- ix. All Secretaries to the Government of India (secy-goi@lsmgr.nic.in)
- x. The Principal Director General, Press Information Bureau, Ministry of Information and Broadcasting. (pdg-pib@nic.in)
- xi. The Director, Cabinet Secretariat, New Delhi. (cabinet@nic.in)
- xii. Shri Sanjay Kumar Mishra, Sc. 'G', DST for uploading the Monthly Summary on DST's website. (sanjaykr.mishra@nic.in)
- xiii. PSO to Secretary, DST. (anuj.tripathi@nic.in)
- xiv. AD (OL), DST for Hindi Translation (kn.singh65@gov.in)

Signed by Pulok Sengupta
Date: 16-07-2021 15:32:55
Reason: Approved

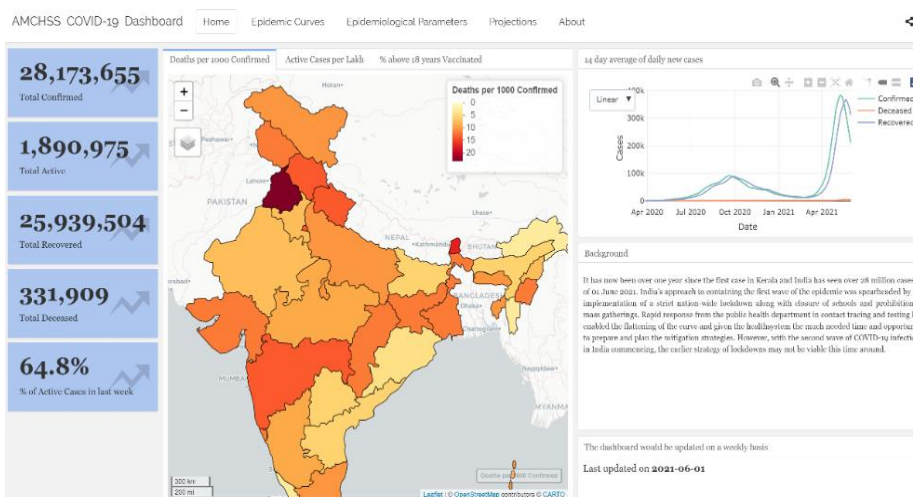
Department of Science & Technology
Monthly Report
June, 2021

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

A. Science for Society

1. The National Academy of Sciences, India (NASI) organized a Webinar on “Water Quality, Purification & Preservation” in which several distinguished scientists delivered very informative, inspiring and illustrative lectures connected with the theme.
2. A talk on “Traditional Knowledge to Drug Development: Research and key Challenges” was organized by Institute of Advanced Study in Science & Technology.
3. A brainstorming meeting on ‘Advanced Technologies in Agriculture’ with focus on AI, ML and IoT was organized virtually by Technology Information, Forecasting & Assessment Council (TIFAC). Key issues related to implementation of advanced technologies by small and marginal farmers were discussed.
4. Several talks & seminars were organized as a part of “Azaadi ka Amrit Mahotsav” celebrations by Autonomous Bodies.
5. NIF facilitated granting of 4 patents to its grass root innovators on
 - Herbal compositions for treatment or prevention of asthma and associated respiratory diseases;
 - Portable Multi-Utility Machine;
 - An Automatic Mobile Sprinkling System and a Method thereof (Mobile sprinkler system for irrigation); &
 - Kerosene Stove.
6. NIF undertook the second year testing of two farmer’s rice varieties Andanur Sanna (white) and Sindura Madusale (red) wherein Andanur Sanna exhibited higher grain yield and straw yield, more number of productive tillers/plant, more number of fertile spikelets /panicle and higher grain test weight in comparison with other reference varieties. In addition, five onion varieties were undertaken for Advanced Varietal Trials during Kharif, 2021. With respect to dissemination of plant varieties, Sitara Sringer - Improved mustard variety was undertaken for field demonstration, Balwanpyaj (onion) for on-farm trials cum demonstrations and Ajitgarh Selection (cauliflower), AMPr (chilli), Kudrat 3 (pigeon pea) and Sulkhaniya (pearl millet) were taken up for on farm trials in various parts of the country.

7. Indian National Science Academy (INSA), organized World Environment Day Lecture (virtual mode) titled 'Why to Restore Ecosystem: Safeguarding Environment and Health'.
8. INSA also released three books. (i) Vignettes for Success in Academia, (ii) Drug Discovery and Drug Development and (iii) Host Immunity and Vaccines Covid-19.
9. An online seminar was conducted by North East Centre For Technology Application And Reach (NECTAR) on 'Medicinal, Aromatic and Dye Yielding Plants of Assam: Prospects and problems of conservation, scientific assessment and entrepreneurship development'.
10. SCTIMST developed an interactive dashboard to visualize the COVID-19 situation in India. The dashboard uses data science and epidemiological methods to monitor and track the spread of COVID-19. It offers insights into the transmission dynamics and progression of the epidemic to the public health program managers, scientific community, and general public.



The dashboard is available at :https://amchss-sctimst.shinyapps.io/covid_dashboard/

11. The DST-SCTIMST Summer Scholarship Program 2021 for SC and ST students was organized. The program aimed to ignite young minds towards a knowledge society and make them understand Science & Technology, Biomedical research, etc. It also aimed to impart some research skills to students.
12. Indian National Academy of Engineering (INAE) Mumbai Chapter organized a Webinar on "Production and Utilization of Green Hydrogen" covering technologies for the production of green hydrogen, fuel cell development, hydrogen storage, and transport.

13. Virtual Interaction of IRIS winners-Team India for Regeneration International Science and Engineering Fair 2021 was held with special address by Secretary, DST.
14. NAC meeting conducted on 10-11 June 2021 (2 days) for preparation of National Children's Science Congress (NCSC) 2022-23.
15. Nomination forwarded for UNESCO Kalinga Prize 2021.
16. To meet the high demand of Oxygen, proposal from TBI at IIT Kanpur has been structured to be covered under CAWACH program. Recommendation from CAWACH centres have been obtained for extending balance funds under CAWACH program to support Mission Bharat O2 from IIT Kanpur.

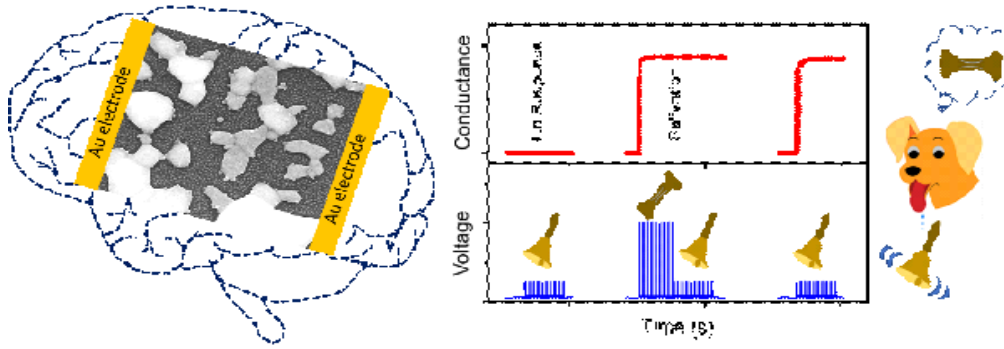
B. National Technology Mission

1. The minutes of 2nd Mission Coordination Committee (MCC) meeting of National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS) held on 21st May, 2021 under the chairmanship of Prof. Ashutosh Sharma, Secretary, DST, has been finalized and shared with all the 25 Technology Innovations Hubs (TIHs) for follow-up actions.
2. The 5th meeting of Scientific Advisory Committee (SAC) of National Mission on Interdisciplinary Cyber Physical Systems held on 10th June, 2021 through Video Conferencing, with the following agenda: To Discuss the revised Detailed Project Report (DPRs) received from 25 Technology Innovations Hubs (TIHs) and selection process for elevation of 4 TIHs to TTRPs. As per the SAC recommendations, the Project Directors were called for presentation on their DPRs in terms of technical merit, financial aspects and other techno-management aspects. The presentation sessions on the revised DPRs by the 25 TIHs before the SAC was held on 24th and 25th June, 2021 through Video Conferencing.
3. The draft EFC on National Mission on Quantum Technology & Application (NM-QTA), modified as per the suggestions during Empowered Technology Group meetings, has been circulated with different ministries and now the comments are awaited from ISRO & DoT.
4. Attended PMO Meeting on Hydrogen on 16th June 2021 to discuss the ongoing and upcoming activities on Hydrogen.

C. Technology Development

1. Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) have fabricated a device that can mimic human brain cognitive actions and is more

efficient than conventional techniques in emulating artificial intelligence, thus enhancing the computational speed and power consumption efficiency.



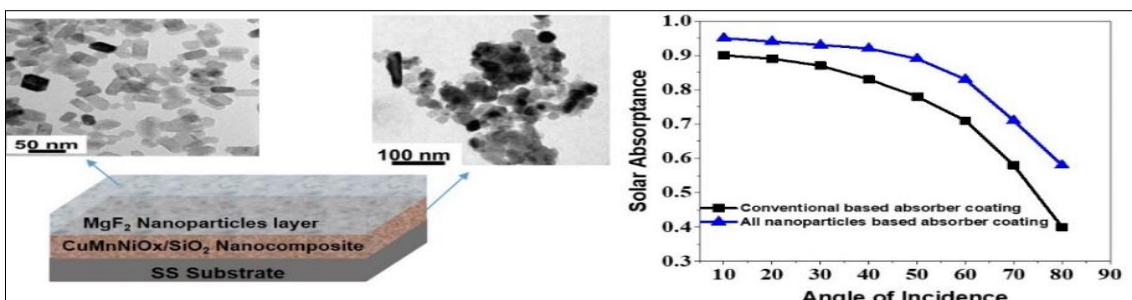
(Scanning electron microscope image of the artificial synaptic network device resembling a bio-neural network. Associative learning is demonstrated by emulating Pavlov's dog, where post-training the dog salivates by hearing the bell.)

2. Completed know-how demonstration, as a part of the know-how transfer Agreement signed between International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) and Allox Resources LLP, Hyderabad for transfer of know-how for 'Easy-to-clean coating (superhydrophobic) sol composition and coating technique on PV panels'.
3. ARCI fabricated Jelly rolls having high loading of Lithium Iron Phosphate (LFP) electrode (22 mg/cm²) and Lithium Titanate (LTO) electrode (20 mg/cm²) for the preparation of cylindrical LFP-LTO cells



LFP-LTO Jelly Rolls

4. ARCI also Developed (at labscale), All Nanoparticles based Absorber Coating (ANAC) with a wide angular solar absorptance (exhibits 6-45% relative enhancement at incident angle 10-80°) when compared to conventional transition metal oxide-based absorber coating.



ANAC Stack: Wide angular solar absorptance of ANAC Vs. Conventional absorber coating

5. An interaction meeting held with experts from IIT Roorkee to discuss the ongoing activities and future roadmap on Demonstration of MW scale Solar energy Integration in weak grid using Distributed Energy Storage architecture (D-SIDES).
6. An interaction meeting held with Experts from Indian Institute of Management Ahmedabad to discuss ongoing activities and future road map on Development of a Prosumer Driven Integrated SMART grid.
7. An interaction meeting held with Experts from Indian Institute of Technology Kharagpur to discuss ongoing activities and future road map on Mix-Energy-Source Electric Vehicle Charging System Design and its Impact on Indian Smart-distribution-grid.
8. A meeting held with Indian experts to identify the theme areas for green-powered future mission.
9. Review of project on Indo-US Joint Clean Energy Research and Development Centre on Smart Grid and Grid Storage Technology.
10. An interaction Meeting held with Experts from Indian Institute of Science Bangalore to discuss ongoing activities and future road map on Developing alkali-activated low carbon bricks using construction and demolition wastes for energy efficient walling envelopes.
11. An interaction meeting held with experts from IIT Gandhinagar to discuss the future roadmap on Design & prototype demonstration of a CHCP system for scalable building energy use based on methanol powered fuel cell system.
12. An interaction meeting held with experts from The Energy and Resources Institute (TERI), Bangalore to discuss on ongoing activities and future roadmap on Habitat Model for Efficiency and Comfort.
13. A Meeting held with Experts from ISHRAE to discuss on ongoing activities and future road map affordable thermal comfort.
14. A Project Review Meeting held with Experts from Indian Institute of Technology Delhi and Thermax Limited, Pune to discuss ongoing activities and future road map on Methanol Production from Indian Coal: Pilot Plant Demonstration, Catalysis and Scale-up Technologies.
15. 22nd meeting of Technical Sub-Committee of Standing Scientific Research Committee (SSRC) organized by Ministry of Coal to discuss on New & Ongoing S&T proposals and thrust areas on future research related to the coal mining.

16. Review of project on Innovative Residential Cooling Technologies: Performance Evaluation and Validation.
17. An interaction Meeting held with Experts from Gayatri Vidya Parishad College of Engineering (GVPC), Visakhapatnam to discuss ongoing activities and future road map on Indigenous Photonic System for Real Time Remote Monitoring of Air Quality.
18. A Project Appraisal Committee (PAC) meeting was held to discuss on Project proposals received by CPCB.
19. Under Remedial Action, Knowledge Skimming and Holistic Analysis of COVID-19 (RAKSHAK), now a part of Technology Innovation Hub (TIH) set-up at IIT, Jodhpur, 20 projects have been reviewed by RAKSHAK Coordination Committee over two sessions conducted on 13.06.21 and 20.06.21 through online meetings. The Committee has asked for a 2 page report from each of the projects.

D. International Cooperation

1. **India-UK Bilateral meeting:** The British Council organised a high-official bilateral meeting with India. The meeting was attended by Ms. Michelle Donelan MP, Minister for Universities and Science, the United Kingdom (UK) Department for Education Head, the International Cooperation Division (ICD), Department of Science and Technology (DST), JS (Education), Chairman, the All-India Council for Technical Education (AICTE), and Secretary-General, Association of Universities (AIU), India.

The meeting focused on the mobility of students/faculty/researchers from socially disadvantaged groups. The Head, ICD briefed about the mobility programs (Ph.D. Placement program for INSPIRE and UKIERI in general). He also discussed programs for this group of researchers as pursued by SEED Division and SERB. There are around 500 completed and another 200 ongoing projects under these schemes, The DST proposed to connect them with potential overseas collaborators. This idea was highly appreciated by the UK minister.

2. **BRICS Science & Technology Steering Committee and BRICS Partners Meetings:** Department of Science and Technology (DST) hosted the 11th meeting of the BRICS S&T Steering Committee on 22nd June, 2021 to review the implementation of the BRICS Science, Technology and Innovation (STI) Calendar of Activities including BRICS Young Scientist Conclave, BRICS Senior Official Meetings, and BRICS Science and Technology Ministerial Meeting; BRICS Innovation Corporation Action Plan 2021-2024; BRICS Partnership in India's Technology Summit, and BRICS call for Proposals 2021. The meeting was attended by representatives from BRICS scientific ministries.

India will host the 6th edition of the BRICS Young Scientist Conclave during 13-16 September 2021. As proposed by India, the thematic areas for conclave would include healthcare; energy solution, and interdisciplinary cyber-physical system. The announcement for Conclave will be made in the first week of July. The concept note and action plan for BRICS Innovation Cooperation 2021-2024 which was earlier presented by India in the BRICS Sherpa meeting were also discussed during the meeting. All BRICS nations unanimously agreed with India's proposal of innovation cooperation. It was decided to consider this proposal in BRICS Science, Technology, and Innovation Entrepreneurship (STIEP) working group for elaborating the action plan. India proposed the BRICS partnership in India's Technology Summit as a new activity under the BRICS platform. On behalf of the DST representative from the Confederation of Indian Industry (CII) has given a detailed presentation regarding the event and proposed BRICS member states consider participation in it as a partner. It was unanimously decided to circulate the proposal through the office of BRICS Sherpa to all the BRICS nations.

Regarding the launching of the next call for joint collaborative research projects, the meeting of BRICS funding parties took place on 24 June 2021. The BRICS funding agencies agreed to support interdisciplinary research covering areas such as biotechnology and health; energy solutions; application of ICT and emerging technologies to address societal challenges; advanced materials for industrial applications, etc. The Call for Proposals seeking joint application for multilateral projects is likely to be launch in September 2021.

- 66th meeting of the Scientific Council (SC) of the Indo-French Centre for Promotion of Advanced Research (CEFIPRA):** 66th meeting of the Scientific Council (SC) of the Indo-French Centre for Promotion of Advanced Research (CEFIPRA) was held virtually during 14-16 June 2021. A total of twenty new joint R&D projects in the areas of Life & Health Sciences, Water & Agriculture, Marine Biology, and Ecology & Chemical & Synthetic Biology were recommended for support. These wide-ranging innovative projects submitted by Indo- French team of researchers envisage providing solutions to various societal problems by advancing the knowledge like the study of molecular and cellular mechanisms, improving diagnosis and treatment of diseases, studying ocean environment by climate change, improving crop productivity through microbial technologies, developing a numerical framework to estimate star formation rates, designing novel assays for measuring in cell distribution and stability, and creating a nontoxic bio-implant for clinical applications, etc.

The Scientific Council of the CEFIPRA also approved the re-launch of its 'High Impact Scientific Research Network' programme and identified 'One Health' & 'Data Science' as areas for networking between excellent research groups from India &

France. This network programme aims to harvest the strength of networking stakeholders to yield knowledge linkages & build forward the knowledge chain by facilitating the exchange of domain expertise, innovative ideas, and technological know-how between selected groups of India and France.

4. **India-Russia Joint Technology Assessment and Accelerated Commercialization Program:** Three Indian S&T led SMEs / Start-ups viz. Ananya Technologies Private Limited, Bengaluru Prantae Solutions Private Limited, Bhubaneswar and Jayon Implants Private Limited, Palakkad have been selected to undertake joint R&D and technology transfer projects under the India-Russia Joint Technology Assessment and Accelerated Commercialization Program. The program is a joint initiative of the Department of Science & Technology (DST), Govt. of India, and Foundation for Assistance to Small Innovative Enterprises (FASIE).
5. **Review meeting on India Science Research Fellowship:** As a part of India's initiatives to engage with our neighbouring countries to develop Science & Technology partnerships, the Department of Science and Technology (DST), Govt. of India has launched India Science and Research Fellowship (ISRF) Programme for Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Sri Lanka, Thailand researchers to work in Indian universities and research institutions. It was implemented in 2015 and going on successfully till now.

A virtual review meeting was organized on **16th June, 2021** by the DST in collaboration with Indian National Science Academy (INSA). During this meeting, the previous ISRF awardees of different neighbouring countries like Bangladesh, Nepal, Myanmar, Sri Lanka, etc, and mentors of various research fields from prestigious Indian institutes shared their experiences, views, and suggestions for the improvement of the fellowship programme.

6. **India Belgium Networking call 2021:** The India Belgium Networking call 2021 i.e the 4th call for proposals for networking activities by the Belgian Federal Science Policy Office (BELSPO), DST and DBT was announced on 25th June. This Networking call aims to support exchanges that leverage long-term research cooperation between multiple Belgian and Indian research institutions, based on existing infrastructure, with a significant impact on a priority research area. The focus areas with the DST are space, including astronomy, solar physics, and remote sensing; Marine sciences (Except Bio concept); Geology; and Cyber security.
7. A meeting held with officials from UK to discuss on possibilities to develop new programmes with UKRI under India-UK S&T Cooperation.
8. A meeting held with officials from MI Secretariat to discuss on Mission Innovation Collaborate Module.

9. A meeting held with Experts from Indian Institute of Technology Kharagpur, Indian Institute of Technology Bhubaneswar, Central Mechanical Engineering Research Institute (CMERI)-Durgapur, Indian Institute of Technology Delhi, Visvesvaraya, National Institute Of Technology, Nagpur and Andhra University, Visakhapatnam to discuss on Renewable Energy empowering European and Indian communities (RE-EMPOWERED) under India-EU joint call on Integrated Local Energy Systems.
10. Review of project on Proposal for the facilitation, Partnership and Support for the Global Cooling Prize Initiative.
11. A meeting held with officials from Mission Innovation member countries to discuss on ongoing activities, strategic development and future roadmap regarding Innovation communities on affordable heating and cooling of buildings.
12. Attended First Meeting on India-US Joint Hydrogen Task Force on 17 June 2021. India-US Joint Hydrogen Task Force was announced to scale up technologies to produce hydrogen from renewable energy and to bring down the cost of deployment. The Task force is co-chaired by Ministry of New and Renewable Energy (MNRE) and US Department of Energy (DOE).

E. Human Capacity Building

1. **Extension of Project Duration:** In view of COVID-19 pandemic, one year extension of project tenure has been given under Women Scientists Scheme, Cognitive Science Research Initiative (CSRI) and Science and Technology of Yoga and Meditation (SATYAM) Programmes of WISE-KIRAN Division.
2. **DST's celebration of 7th International Yoga Day (IYD-2021)** : DST-SATYAM organized a webinar on "*Yoga for Improving Heart Health*" on 21 June 2021 which was presided over by Secretary, DST. Prof. K.K. Deepak, Department of Physiology, AIIMS, New Delhi was the speaker and the webinar. Press release has also been done by PIB on DST's activities on IYD-2021.
3. **Vigyan Jyoti:** Several activities have been conducted under Vigyan Jyoti during May. A summarized view is given below:

Vigyan Jyoti at Social Media: Twitter handle **@JyotiVigyan** created for Vigyan Jyoti Programme of DST to share the various activities with community.

World Environment Day: A talk on 'Indian Constitution & Environment Protection' by Justice U.C. Dhyani, Centre for Environment Assessment & Climate Change, G. B. Pant National Institute of Himalayan Environment and another talk on 'Air Pollution & Climate Change in Himalayas' Mr. Manish Naja, Aryabhata Research Insti-

tute of Observational Sciences, Uttarakhand were organized on June 5, 2021 to commemorate World Environment Day.

IYD-2021 celebration under Vigyan Jyoti: Vigyan Jyoti Scholars performed Yoga on 21 June 2021 under the guidance of Yoga Expert Dr Arundhati Goley, Ass. Professor, SVYASA University, Bangalore on 21 June 2021.

Webinars/Lecture: Sessions on “Joy of Learning Science-Boundless Opportunities” , "Covid-19 Pandemic-Basic Lessons”, “Science as a Career from a Doctor’s Perspective” “Is There a Vet in You”, “Aspiring Stories – Women in STEM”, “Stress Management during COVID-19”, “Chemistry in Daily Life”, “History and Foundation of Remote Sensing”, “Sailing the high Seas opportunities in the Merchant Marine”, “Career selection: Opening a Pandora Box”, “Role of Biology in current Covid-19 Pandemic”, “Molecular Diagnostics and COVID-19 Testing”, “Soft Skill Master Trainer” etc. have been conducted.

Role Model Interaction and Special Lectures: Experts have been invited to deliver Role Model Talk for Vigyan Jyoti Scholars. Prof. H.C. Verma, Professor Emeritus, IIT Kanpur gave lecture on “An Initiative to promote interest in STEM amongst girl students”, Professor Abha Misra, Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore on “The Role of Technology in Fighting Pandemic” , Professor Lalit Varshney, Former Head, Radiation Technology Department Division, BHABHA Atomic Research Centre, Mumbai spoke about “The Application of Radiation Technology in Health Care, Environment and Industry”, Teny Theresa John, Department of Physics, BITS Pilani, Goa on “Seeing things in a different light: X-Ray Crystallography”, Dr. Sreevalsa Kolathayar, Department of Civil Engineering, NIT Surathkal on “Science and Engineering for Disaster Risk Reduction” and Ms. Nimita Kant, Shivaji College, University of Delhi gave her talk on “Chick Windowing method- Naked eye observation of embryonic Development and its scope in research”.

Special Programme on Cyber Security: Special Programme on Cyber Security was conducted by various JNVs during June. Vigyan Jyoti Scholars from total 35 Districts viz. 9 Districts (Bhopal Region), 8 Districts (Hyderabad Region), 7 Districts (Lucknow Region), 6 Districts (Pune Region) and 5 Districts (Shillong Region) have attended this programme.

Orientation Workshop for the subject teachers of Physics, Chemistry, and Biology was conducted on June 29, 2021 to brief the teachers about the objectives, learning outcomes, and activities of the Vigyan Jyoti STEM Festival along with their roles and responsibilities.

Special Online Classes: During this month, 100 online classes have been con-

ducted for Class XII VJ Scholars. Further, 9 tests have been conducted for JEE/NEET.

4. **Gender Advancement for Transforming Institutions (GATI):**

Grouping of GATI institutions and Athena Swan Institutions: The criteria of grouping of Indian and UK institutions was finalized in consultation with GATI partner Teams and approved by competent authority. Based on the same criteria the 30 Indian GATI Pilot institutions and 6 Athena Swan UK institutions have been grouped into 6 groups for further partnering and working together under the given partnering framework.

Baseline study model: The baseline study model in consultation of British council for GATI Pilot institutions is finalized which would help later to assess the impact of the GATI initiative at the end of pilot.

GATI Portal: In our endeavor to get the dedicated portal of GATI, we have received the cloud account named gaticloud from NIC.

Financial Support: During this month, sanctions have been issued to 27 GATI Pilot institutions.

5. **Women Scientists Scheme:** A Booklet on 100 Success Stories under Women Scientists Scheme-C (WOS-C) has been released in public domain. Web version of this booklet has also been uploaded on DST website. One pager brief of this Booklet is shared with Media Cell of DST for further dissemination. In June 2021, 58 sanctions in WOS-A and 8 in WOS-B have been issued. Final settlement of 7 projects under WOS-A and 2 under WOS-B has been done under this lot. The call for submission of proposal was closed during June and Division has received more than 1500 proposals under WOS-A.

6. **CSRI-SATYAM:** 7th International Yoga Day has been celebrated by the Department. In addition, an International Conference on Yoga (International YOGACON 2021) during June, 2021 in association with American Academy of Yoga and Meditation is supported to AIIMS, Rishikesh. DST has also released 3 Success Stories from SATYAM programme. The achievements of SATYAM and other activities on IYD have been shared on DST's social media platforms (YouTube, Twitter and Face Book).

Programme Division has also prepared detailed document of 'Science and Technology of Yoga and Meditation (SATYAM)' Programme with respect to the role of Yoga and Meditation as Traditional Knowledge which includes scientific evidences of our traditional knowledge of yoga and meditation, its impact on physical & mental health along with combating with pandemic situation and overall well-being of society.

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

Scholarship For Higher Education (SHE):

- 1297 SHE scholars received scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.
- Scholarship For Higher Education (SHE)- 2020 result was declared for award of scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences.

INSPIRE Fellowship:

- 151 INSPIRE Fellows received fellowship for pursuing doctoral degree programme.
- 43 INSPIRE Fellows got upgraded from Junior Research Fellow (JRF) to Senior Research Fellow (SRF) for pursuing doctoral degree programme.
- INSPIRE Fellowship-2020 Level-1 evaluation result was declared.

INSPIRE Faculty Fellowship:

- 41 INSPIRE Faculty Fellow's Fellowship grant was released for pursuing Post-doctoral programme.

F. Scientific Infrastructure Building

1. To promote deep technology-based research in India, Science and Engineering Research Board (SERB) in collaboration with Intel India, has announced the launch of a first-of-its kind research initiative called 'Fund for Industrial Research Engagement (FIRE)'. Built on a collaborative model that leverages the collective expertise of the government, industry and academia, the FIRE program aims to pursue industry-relevant research opportunities that are novel, transformative and can have a ground-breaking impact at national scale. The program will focus on a wide set of research opportunities in the space of Artificial Intelligence (AI)/Machine Learning (ML), platform systems, circuits & architecture, Internet of Things (IoT), materials & devices, security, etc. from edge to cloud.
2. In a recent study lead by researchers at Aryabhata Research Institute of Observational Sciences (ARIES), in collaboration with University of Delhi, IIT-Kanpur and SPL, ISRO, accurate estimates of black carbon (the second most important global warming pollutant after CO₂) using the parameter mass absorption cross-section (MAC) have been made for the first time over the central Himalayan region. These findings have potential to reinforce the performance of numerical weather prediction and climate models.

3. Wadia Institute of Himalayan Geology, established main causes of 7th Feb 2021 catastrophic mass flow that descended the Ronti Gad, Rishiganga, and Dhauliganga valleys in Chamoli, Uttarakhand through a multi-institutional and multi-disciplinary Geosciences.
4. Optimized Ag-Cu/CuO nanoparticles based suspensions were used to uniformly spray coat polyester fabric of large area (23 cm X 23 cm) for anti-viral masks applications by International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI).
5. ARCI established the concept of extending the fatigue life of Al alloys (2024 and 7075) for aerospace applications.
6. ARCI successfully synthesized at lab-scale, nanostructured Ce-Mo-O based materials for possible application as a catalyst.
7. Three new species of Diatoms discovered at MACS-Agharkar Research Institute (ARI).
8. Collagen is the most abundant extracellular-matrix protein found in mammals and the main structural and load-bearing element of connective tissues. Recent studies conducted by Raman Research Institute (RRI) on the yielding dynamics of in vitro reconstituted networks of uncross linked type-I collagen has enabled experimentalists at the Institute and international collaborator from Hong Kong to deduce the dependence of yield-stain and -stress on the microscopic network parameters. These findings potentially have broad implications in tissue engineering and designing highly resilient biological scaffolds.
9. Multi wavelength analysis and modelling of a blazar in the optical, X-ray and gamma ray regimes have enabled Astrophysicists at RRI and International collaborators from Poland and Argentina to understand the nature of its outburst and the underlying physical processes responsible for the simultaneous broadband emission and the fast variability of the outburst.
10. A series of novel piperine derivatives synthesized by Bose Institute (BI) with high yield and these derivatives were evaluated for its antifilarial potential against the bovinefilarial parasite *Setariacervi*. This study supported with several biological experiments reports the antifilarial effectiveness of these novel piperine derivatives.
11. A novel study conducted by BI focusing on the chemical and optical characterization of water-soluble inorganic and organic components of aerosols at different sizes, over a high altitude Himalayan station, Darjeeling (27.1° N and 88.15° E, 2200 m amsl) and a tropical urban metropolis, Kolkata (22.5° N, 88.3° E, ~6 m amsl).

12. Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) and Indian Institute of Space science Technology, IIST, Trivandrum signed MoU for collaboration between the Institute's in academic and research.
13. MoU between SCTIMST and InStem Bangalore (A DBT institute) to collaborate in the ICMR funded Center of Excellence project in heart failure in Genetics of Cardiomyopathy was also signed.
14. DST as nodal agency of SUTRA-PIC programme, Government of India organized "**Coordination meet for SUTRA-PIC projects**" with partnering agencies, nominated nodal officers from respective ministries, experts, principal investigators. Individual Technical Expert Group (ITEG) recommended proposals for possible linkages amongst expected deliverables. A Central Expert Group (CEG) for coordinating the project activities amongst the Funding and Partnering Agencies would be constituted based on the recommendations.
15. A series of virtual Brainstorming sessions on "**S&T Perspective for Addressing Second Wave of COVID-19**", were held on 04th, 17th and 18th June with Representatives of State S&T Councils, UNDP and Organizations implementing Women Technology Parks (WTPs). The modality of establishing Covid Resilience Centres for accelerating socio-economic recovery and growth was deliberated upon with cross bridge collaborations.
16. Expert Committee meeting for Scheme for Young Scientists and Technologists (SYST) was organized virtually on 7-8th June and 14-15th June, 2021 to review ongoing and completed projects.
17. An Advisory Committee was constituted to review the content to be uploaded on web portal and monitoring the progress of developing a dynamic State Science & Technology Programme (SSTP) web portal. First meeting of the committee was held on 30.06.2021.
18. Participated in National Webinar on "Resilience and Cope-up Strategies in Pandemic through Agricultural Engineering Interventions; Women's Perspective" organized on 9th June, 2021 by ICAR- Central Institute of Agricultural Engineering (CIAE) & SEED Division, DST.
19. Improved traditional systems (viz. **Bee-Keeping Mud Hive** technology developed by Society for Technology & Development, Mandi, HP.; Improvised traditional **Jaggery furnace** by 3-Pan Jaggery Furnace by CTD/SESS, New Delhi; Light-weight, safe, easy to use and cost-effective solution **River Ropeway System** by Society for technology & Development, Mandi; Improved **Watermill** by HESCO, Dehradun replaces traditional wooden turbine replaced with cast iron turbine and flumes with jet; Improved **Tanka with Agor for Rain water harvesting** by BAIF, Pune for increasing

water availability and livelihood in desert areas; **Compact Biogas System for Domestic Use** by ARTI, Pune for solving the problem of handling organic waste etc.) are being implemented under Technological Advancement for Rural Areas (TARA) & TIME-LEARN programme, SEED Division, DST for drudgery reduction, value addition, livelihood opportunities through social entrepreneurship for SHGs and unemployed youth).

20. Various programmes/sessions/webinars/ summer camps were organized by Gujarat State Council of Science and Technology like webinar on Solar Eclipse; Awareness Sessions on COVID 19 Vaccine, Mucoromycosis, Organic farming for farmers and Hydroponics; Online Summer Camp on Fun with Science, Electronics and Communications, Road Safety, Hand on Activities on Science experiments & Demonstration of Physics models and Hand on Activities on Mathematics Models; Online workshop on food adulteration identification and Bird Identification and Conservation etc.
21. MoU between Govt. of Assam and Survey of India signed on 21.06.2021 for **Drone based Large Scale Mapping of rural abadi area and Establishment of CORS network under SVAMITVA scheme.**
22. **Fund for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)**
 - a. The third interaction meeting on “**Fund for Improvement of S&T Infrastructure (FIST)**” was convened on 17 June, 2021 through Microsoft Teams by involving stakeholders from various academic institutions, associated with ongoing FIST projects sanctioned in different subject areas. The stakeholders were apprised of the recent changes incorporated in the FIST Program which included emphasizing upon the need for optimal utilization of FIST supported equipment by operating the said facilities through multiple shifts and encourage participation of industries/ MSMEs/ Start-ups, to initiate activities pertaining to Scientific Social Responsibility, recent government direction about the EAT (Expenditure, Advance and Transfer) Module of Public Finance Management System, mapping the research facilities in the Indian Science & Technology and Engineering Facilities Map (ISTEM Portal) and timely utilization of funds.
 - b. The R & D Infrastructure Division organized the Mid Term Review Meeting of ongoing FIST Projects sanctioned in Mathematical Sciences Area on 22 June, 2021. Technical and financial progress was reviewed by the Subject Expert Panel. A total of Six projects were reviewed in this meeting.

- c. Mid Term Reviews of thirteen (13) ongoing sanctioned projects in FIST in Earth & Atmospheric Sciences area was organized in a meeting held on 29.06.2021. The technical and financial progress were evaluated by the Subject Expert Panel.
- d. The story about the Novel usage of DST FIST supported Raman Microscopy at Department of Physics, IIT Indore for Cancer Research is published in the Social Media, DST website, Twitter and Press Information Bureau.

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

- i. The R & D Infrastructure Division, DST has sanctioned a major sum of Rs 15.80 Crores for acquiring the research facilities to Institute of Chemical Technology, Mumbai for four years duration under "Promotion of University Research & Scientific Excellence" (PURSE) towards the theme entitled "Self-Reliance in Working around sustainable, helpful, reliable and high yielding processes and technologies ("Swashray"). The aim of SWASHRAY is to develop and demonstrate sustainable, high yielding processes and technologies for manufacturing of priority drugs, intermediates and specialty chemicals.
- ii. Mahatma Gandhi University, Kerala has conducted a National webinar on Post-COVID well-being: Risks and Challenges' organized by School of Biosciences, with the financial support of DST-PURSE on 10th and 11th June, 2021.

24. **Sophisticated Analytical and Technical Help Institutes" - (SATHI)**

The 20th "SATHI Ki Baat" Meeting was organized on 17th June 2021, convened on Microsoft Teams to review the "Sophisticated Analytical and Technical Help Institutes" (SATHI) centres at three host institutes (IIT Delhi, IIT Kharagpur and BHU-Varanasi) and for discussion about the latest technical and financial progress and discussion on Section-8 company formulation.

25. R & D Infrastructure Division, DST organized Meeting of Global Tender Enquiries (GTE) Committee and Make in India Cell (MII) on 30.06.2021 with representatives of Administration and Integrated Finance Division as special invitee. Detailed deliberation's were held on identification, experience, qualification, tenure, salary of Young Professionals to be hired under this Cell, mandate of the MII Cell, roles and responsibilities of the scientific staff and young professionals under this cell.