

YEAR END REVIEW - 2018: DEPARTMENT OF SCIENCE AND TECHNOLOGY

Relevant for: Science & Technology | Topic: Indigenization of technology and developing new technology

Ministry of Science & Technology

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Posted On: 17 DEC 2018 5:37PM by PIB Delhi

India is one of the top-ranking countries in the field of basic research. The year 2018 saw Indian Science getting further recognized as one of the most powerful instruments of growth and development, especially in the emerging scenario and competitive economy. Department of Science & Technology (DST) established in May 1971, with the objective of promoting new areas of Science & Technology plays the role of a nodal department for organizing, coordinating and promoting S&T activities in the country. Some of the Key highlights, initiatives and achievements of the Department in the year 2018 are as follows:

One of the biggest developments of the year came in the month of **December** as the Union Cabinet gave its approval to the launch of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to be implemented by Department of Science & Technology at a total outlay of Rs. 3660 crore for a period of five years. The Mission addresses the ever increasing technological requirements of the society, and takes into account the international trends and road maps of leading countries for the next generation technologies.

November saw the launch of The Global Cooling Prize, an innovation challenge that aims to spur development of a residential cooling solution that has at least five times (5x) less climate impact than today's standard products. This technology could prevent up to 100 gigatons (GT) of CO₂-equivalent emissions by 2050. Over US\$3 million will be awarded in prize money after the 2-year competition. As part of its Act East policy, the 1st ASEAN-India InnoTech Summit was hosted by India in New Delhi during 29-30 November 2018. The main objective of the InnoTech Summit was to exhibit and build networks between Indian and ASEAN researchers, scientists, Innovators, Technocrats, private companies and Start-ups etc to facilitate building an ASEAN-India Innovation and Technology Databank for sharing among India and ASEAN country stakeholders. An Inter-Ministerial / Departmental meeting was held on 6 November 2018 in under the Chairmanship of Secretary, DST to discuss harmonization of guidelines on emoluments and other service conditions of

research personnel (JRF/SRF/RA) in R&D programmes of Central Government Departments and Agencies. The Inter-Ministerial Group recommended *upward revision of fellowship* with certain modification in the eligibility criterion.

Agreement on Cooperation in the field of Science Technology & Innovation between the Government of India and the Government of the Republic of Uzbekistan was concluded in the month of **October**. The DST-CII Technology **Summit** was held in New Delhi during October 29-30, 2018 with Italy as partner country.

To combat vehicular pollution *WAYU* (Wind Augmentation and purify Ying Unit) was inaugurated in **September** by Union Science & Technology Minister at ITO intersection and Mukarba Chowk in New Delhi. *WAYU* helps in reducing ambient air pollution levels ejected by vehicles at places, which have high concentration of pollutants. *WAYU* can reduce PM10, PM2.5, CO, VOCs, HC emitted in the atmosphere. The cost of device is Rs.60, 000 per device with a maintenance cost of Rs.1500 per month. **September also witnessed *The Make Tomorrow for Innovation Generation***, a PPP Initiative between Department of Science & Technology, Intel Technologies and Indo-US S&T Forum. The programme encouraged the school children of the age group of 14-17 to make innovative prototypes using the kits given to them.

In **July**, a major partnership was announced between Indian Government and Republic of Korea in terms of establishment of ***Indo-Korean Center for Research and Innovation (IKCRI)*** in India, which will act as the hub for systematic operation and management of all cooperative programmes in research and innovation between the two countries including innovation & entrepreneurship and technology transfer.

Thirty young meritorious Indian scholars in the field of physiology and medicine and allied areas participated in the *68th Nobel Laureates meeting held in Lindau, Germany* during 24-29 **June** 2018. The Indian team of students also visited various research institutes/universities in Germany during 02-06 July 2018 in the exposure visit jointly supported by DST and German Research Foundation. June also saw the Department deputed 27 young Indian Scientist / Innovators for participation in **3rd BRICS Scientist Conclave** which was held in Durban (South Africa) during 25-29 June 2018. The Conclave covered 3 themes namely Energy, Water and Use of ICT for Societal applications. The Conclave also organized BRICS Young Innovators Award competition. One Indian innovator aged 23 years was awarded the “BRICS most promising Innovator” during the Conclave.

Mission Innovation Ministerial meeting during the month of **May** at Denmark and Sweden saw signing of bilateral Science, Technology Innovation Agreement. May 2018 also witnessed completion of **10 years of Indo-Dutch Science, Technology and Innovation cooperation.**

A major event in **April** was the India – UK Science & Innovation Policy Dialogue wherein it was agreed to scale up collaboration to tackle global challenges realizing the potential of artificial intelligence (AI), digital economy, health technologies, cyber security and promoting clean growth, smart urbanisation, future mobility, environment (removal of plastic and micro-plastics from land and ocean), fight against climate change and participation in International Solar Alliance (ISA). This came in as a follow up of the two Prime Ministers statement that technology partnership is central to their vision of India-UK collaboration and their desire to raise it to £ 400 million by 2021.

The month of **March** witnessed The President of India, Shri Ram Nath Kovind, inaugurating the Festival of Innovation and Entrepreneurship (FINE) and presenting the Gandhian Young Technological Innovation Awards at Rashtrapati Bhavan.

The month of **January** saw Department of Science and Technology and the National Technological Innovation Authority of Israel jointly establishing a US\$ 40m “India-Israel Industrial R&D and Technological Innovation Fund (I⁴ Fund)” for a period of five years. This fund will extend support to joint R&D projects aimed to co-develop innovative technology-driven products, services or processes that have potential for commercialization. The Fund will provide opportunity for techno-economic cooperation between India and Israel by extending institutional support in building up consortia including private industry, enterprises and R&D institutions.

The beginning of 2018 also saw the launch of three Science and Engineering Research Board (SERB)’s Schemes by Union Science & Technology Minister viz.

- i. **Teacher Associate ship for Research Excellence (TARE):** The Scheme aims to tap the latent potential of faculty working in state universities, colleges and private academic institutions who are well trained but have difficulty in pursuing their research due to varied reasons including lack of facilities, funding and guidance. This scheme facilitates mobility of such faculty members to carryout research in a well-established public funded institution such as IITs, IISc, IISERS and other National Institutions (NITs,

CSIR, ICAR, ICMR labs, etc) and Central Universities located preferably nearer to the institution where the faculty member is working. Up to 500 TAs will be supported under this scheme.

- ii. **Overseas Visiting Doctoral Fellowship (OVDF):** This scheme offers opportunities for up to 100 PhD students admitted in the Indian institutions for gaining exposure and training in overseas universities / institutions of repute and areas of importance to country for period up to 12 months during their doctoral research.
- iii. **SERB Distinguished Investigator Award (DIA):** DIA has been initiated to recognize and reward Principal Investigators (PIs) of SERB/DST projects who have performed remarkably well. The scheme aims not only to reward the best PIs of completed projects but also to motivate the ongoing PIs to perform exceedingly well. DIA is a one-time career award devised to specifically cater to the younger scientists who have not received any other prestigious awards or fellowships.

Some other major initiatives of the year were the inauguration of India's ***first supercritical Brayton Cycle CO₂ test facility*** at IISc Bangalore, which has the potential to pave the way for highly efficient compact power plants driven by wide range of heat sources including Solar; Organization of Children's Science Congress all over the country on the Focal Theme of "Science Technology and Innovation for Clean, Green and Healthy Nation".

Communicating science also got a major fillip in the Launch of Augmenting Writing Skills for Articulating Research (AWSAR), a new initiative that aims to communicate and disseminate Indian research stories among masses in a format that is easy to understand and interesting for a common person.

A Draft Policy Document Scientific Research Infrastructure and Maintenance Networks (**SRIMAN**) in the S&T sector has already been framed and the year 2019 looks all set to see an accelerated impetus towards fulfillment of the mandate of Department of Science & Technology in terms of formulation of policies, promotion of new areas of S&T with special emphasis on emerging areas, integration of areas of S&T having cross-sectoral linkages, application of S&T for weaker sections, women and other disadvantaged sections of Society and others.

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