



Embassy of India, Berne  
12 October 2020

## INDIA SCIENCE AND INNOVATION WEEKLY

*Ask the right questions, and nature will open the door to her secrets.*

*- Dr. C.V. Raman, The Nobel Prize in Physics 1930*

### NIOT reveals findings on Arctic Sea Ice decimation

A research study, led by the National Institute of Technology (NIOT), Chennai on underwater sounds using a passive acoustic monitoring system during the winters, has been able to probe sea ice melting in the Arctic and its contributing factors. The results reveal a decline in the sea ice concentration, thus disrupting the normal ocean circulation and the global conveyor belt, and eventually leading to changes in global climate.

### Microplastics threaten marine environment

In a study conducted by the Bharathidasan University, Tiruchirapalli covering sampling stations along a 71 km long coastline along the Indian Ocean, the researchers assessed the magnitude of the microplastic pollution problem. Researchers found an overall higher abundance of microplastics at the urbanized beaches as compared to undisturbed beaches due to significant human influence such as tourism activities as well as fishing.

### NCPOR scientist shed light on SST affecting Indian Monsoon

A study led by National Centre for Polar and Ocean Research, Goa (NCPOR) revealed that the variability in Mascarene High (MH), which contributes about 80% of annual rainfall in entire East Asia, experienced significantly increased Sea Surface Temperature (SST) during global warming hiatus (GWH). The scientists have seen significant positive trends in SST and oceanic heat content (OHC) in the last 18 years on monsoon rainfall and have called for steps to reduce carbon emissions.

### Scientists develop new tool to help identify new enzymes

The NIOT, has successfully developed an innovative bioinformatics tool named RemeDB, which would help identify novel bioremediation-related enzymes. RemeDB developed by NIOT is provided with a huge database of pollutant degrading enzyme (PDEs) to degrade pollutants into non-toxic substances.

### India successfully tests SMART

India successfully tested an anti-submarine weapon system, developed by the Defence Research and Development Organisation (DRDO), called Supersonic Missile Assisted Release of Torpedo (SMART) in a boost to its naval warfare capabilities. SMART is a missile assisted release of lightweight anti-submarine warfare (ASW) operations far beyond the torpedo range. A number of DRDO laboratories including DRDL, RCI Hyderabad, ADRDE Agra and NSTL Visakhapatnam have developed the technologies required for SMART.

### IIIT Hyderabad sets up Smart City Research Centre

The International Institute of Information Technology, Hyderabad (IIITH) has set up a Smart City Research Center (SCRC) with support from MEITY (Ministry of Electronics and Information Technology, Government of India), Smart City Mission and Government of Telangana. In this ambitious project, 100 cities are being covered for the duration of 5 years with a budget of INR 100 crore per city per year. As a part of it, Living Lab, a test bed to showcase new ideas and approaches in Internet of Things (IoT) domain, plans to create an urban area enhancing three value domains: social, economic, and environmental. IIITH's Living Lab will collaborate with government bodies, start-ups and big organisations on Smart City solutions. The IIITH campus would include different IoT verticals related to air quality, building energy, water quality, street lighting, etc.

### DBT and IBM collaborate to promote STEM learning

The Department of Science and Technology (DST) and IBM India announced two collaborations, both aimed at promoting Science, Technology, Engineering and Mathematics (STEM) learning among students and to inspire them towards STEM careers. The first collaboration involves DST's Vigyan Jyoti programme, which aims at creating a level-playing field for meritorious girls from grade 9 to 12 to pursue STEM in their higher education. The second collaboration is with Vigyan Prasar, an autonomous organisation of DST, which will build and run "Engage With Science" -- a technology-driven interactivity platform, which shall work in tandem with the India Science over-the-top (OTT) channel. DST and IBM India will work together to further integrate and develop Science & Technology in the education ecosystem with short term courses, workshops, mentoring, and online science content communication for teachers and students in India.

### Special Update: National Institute of Ocean Technology, Chennai

The National Institute of Ocean Technology (NIOT) was established in November 1993 as an autonomous society under the Ministry of Earth Sciences, Government of India. NIOT is managed by a Governing Council and the Director is the head of the Institute. Major aim of starting NIOT under the Ministry of Earth Sciences, is to develop reliable indigenous technologies to solve the various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ), which is about two-thirds of the land area of India. Its Mission Statements are: To develop world class technologies and their applications for sustainable utilization of ocean resources; To provide competitive, value added technical services and solutions to organizations working in the oceans; To develop a knowledge base and institutional capabilities in India for management of ocean resources and environment.

Further details can be found at: <https://www.niot.res.in/niot1/index.php>