India's scientific community responded to the corona crisis with the development of indigenous technologies for rapid detection of infection, new approaches for increasing the speed of testing and reducing costs, biomarkers, masks, ventilators, models and simulations, sanitization systems and so on.

As the Department of Science and Technology (DST) enters its 50th year of inception, COVID-19 has tested the deep knowledge, infrastructure, and human resource built up by DST and its institutions over the years and the scientific community has risen up to the challenge with several arms to fight the pandemic. Many of these were discussed during the Technology Day Celebration and 49th Foundation Day celebration such as, the rapid testing kit by Sri Chitra Triunal Institute of Medical Science and Technology (SCTIMST), the electrostatic mask, the nanoscience applications, and the COVID-19 solutions for Divyangjan and the Elderly have featured in this newsletter. COVID KATHA, a multimedia guide on COVID-19 was also launched.

This issue of Newsletter brings a special feature on some outstanding efforts of the Technology Development Broad (TDB) and the National Science and Technology Entrepreneurship Development Board (NSTEDB) for fast-tracking the near ready technologies for COVID-19.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF
COVID NEWS HIGHLIGHTS

Study shows that COVID 19 may affect the Central Nervous System causing loss of smell and taste

Scientists of Indian Institute of Technology (IIT), Jodhpur have explored the neuroinvasive nature of the COVID 19 virus SARS-CoV-2 highlighting that loss of smell and taste of infected patients makes their entire Central Nervous System (CNS) and the underlying structures in the brain more prone to viral infection with devastating effects.

Organic-Inorganic Hybrid Nanocoatings for Disposable Masks: A formidable arsenal against pathogenic COVID-19

The Department of Science and Technology (DST) has approved support for large scale production of Organic-Inorganic hybrid nanocoatings for disposable masks developed by Dr. Viswanatha R from Jyothy Institute of Technology, Bengaluru under the DST Nano Mission.

Antiviral nano-coatings to be upscaled for making triple layer medical masks & N-95 respirator to combat COVID 19

As part of Nano Mission programme, the Department of Science and Technology (DST) has approved support for upscaled an antiviral nano-coatings developed by Professor Ashwini Kumar Agrawal of Indian Institute of Technology, Delhi for use as appropriate material for producing anti-COVID 19 Triple Layer Medical masks and N-95 respirator in large quantities.

DST supports development of reusable N95 & N99 mask with enhanced antiviral efficiency

The Department of Science and Technology (DST) has approved support for development and upsaling of reusable N95 and N99 masks with enhanced antiviral and antibacterial property designed by Dr. Sri Sivakumar from Indian Institute of Technology, Kanpur under the Nano Mission.

Sree Chitra develops 2 types of swabs and viral transport medium for COVID 19 testing

Technologists at the Sree Chitra Triunal Institute for Medical Sciences and Technology (SCTIMST), an autonomous institute under the Department of Science and Technology, Govt of India, have developed two types of nasal and oral swabs and viral transport medium for COVID 19 testing.

Sree Chitra develops 2 types of swabs and viral transport medium for COVID 19 testing

SERB approves funding for study of mathematical & simulation aspects of COVID 19

Science and Engineering Research Board (SERB), a statutory body under the Department of Science and Technology (DST), Government of India, has approved funding for 11 projects under MATRICS scheme for studying Mathematical modelling and computational aspects to tackle the COVID 19 pandemic.

SNBNCBS develops Nanomedicine to alter oxidative stress for better immune power to treat viral infections including COVID 19

Scientists at S. N. Bose National Centre for Basic Sciences, Kolkata (SNBNCBS) have developed a safe and cost-effective nanomedicine that promises treatment of a number of diseases by altering oxidative stress in the body. The research may provide a ray of hope in India’s fight against COVID 19, as the nanomedicine can decrease or increase reactive oxygen species (ROS) in our body, depending on the situation and cure the disease.

DST supports assistive tools, technologies and techniques to combat challenges faced by Divyangjan & Elderly during COVID 19

The Department of Science and Technology has taken several initiatives to mitigate the impact of COVID 19 among Divyangjan and Elderly and identified various challenges faced by them for finding technological solutions.

Knowledge Organizations focus on initiatives for socioeconomic rejuvenation and resilience using S&T during COVID 19 pandemic

Knowledge Organizations across the country have started creating scientific awareness on COVID 19 using social, print and electronic media and have started initiatives for building resilience at community level during and post lockdown period in response to the advisory issued by the Department of Science & Technology (DST) as part of their Scientific Social Responsibility (SSR).
NCSTC, DST has launched a programme on health and risk communication 'Year of Awareness on Science & Health (YASH)' with focus on COVID-19.

**NEW INITIATIVES**

- DST launches programme on health & risk communication with focus on COVID-19
- NCSTC, DST has launched a programme on health and risk communication 'Year of Awareness on Science & Health (YASH)' with focus on COVID-19.
TDB approves technologies to augment India’s efforts to combat COVID-19

Technology Development Board (TDB), a statutory body of the Department of Science and Technology (DST), is proactively supporting the efforts of the scientists, technologists, entrepreneurs, and industrialists towards preventing and containing the spread of the COVID-19 pandemic by providing financial support for commercialization of these technologies. In addition, TDB is also scouting for novel solutions for supporting the country’s efforts in tackling the health care emergency that the world is facing.

In the last few weeks, TDB, through its evaluation process, has processed a large number of applications under various domains. Till date, TDB has approved six projects towards commercialization, which include thermal scanners, medical devices, masks, and diagnostic kits.

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FEATURED INSTITUTION

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