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# 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*

## Disordered proteins in COVID-19 virus

A research team from Indian Institute of Technology (IIT), Mandi, in collaboration with researchers from Virginia Commonwealth University and the University of South Florida, USA, has used computation tools to understand an important part of the viral proteome called Intrinsically Disordered Protein Regions (IDPR's), which are strongly correlated with the virulence of the viruses. The understanding of the structure of these regions in the COVID-19 proteome is valuable to structural biologists involved in high throughput and structure-based screening for drug development. The IIT Mandi team has also compared IDPRs among the closely related viruses, human SARS and bat SARS-like CoVs. Such comparisons enable a better understanding of the sequence and structural peculiarities of the evolution of the virus and their virulence.

## NCPOR sheds light on melting Arctic sea ice

A recent study conducted by the National Centre for Polar and Ocean Research (NCPOR), Goa, studied the data of arctic ice, specifically its ice extent, thickness and volume from 1978 to 2018 and its correlation with atmosphere and surface temperatures and sea pressure to see how ice in the arctic region has changed over the last four decades. The group is now planning to expand their work to study how sea ice melting and intrusion of warm ocean waters are related.

## Seventeen crab species found in Andaman and Nicobar Islands

A recent survey carried out by Center for Marine Living Resources Ecology (CMLRE) has revealed the presence of seventeen species of Brachyuran crabs, which help clean-up the sea bottom. The deep-water survey by CMLRE was carried out with the help of Fisheries Ocean Research Vehicle Sagar Sampada. The research team, for the first time, found a rare porter crab 'Homolochunia valdiviae Doflein, 1904'.

## Researchers identify 73 novel variants of COVID-19 strain

Researchers from CSIR-Institute of Genomics and Integrative Biology (IGIB), New Delhi and Institute of Medical Sciences and SUM Hospital, Bhubaneshwar have identified 73 Novel variants of COVID-19 strain in Odisha. The research team, which carried out sequencing of 1,536 samples including 752 clinical samples, reported two lineages; B.1.112 and B.1.99, for the first time in India. With this study, India has beaten 12 organisations in 10 countries to complete the first field validation and release the data online. The Institute of Medical Science (IMS) and SUM Hospital researchers are also undertaking the sequencing and analysis of 500 viral genomes to understand the mild, moderate and critical coronavirus infection along with its transmission capabilities

## Centres of Excellence in bulk-drug research

Indian Institute of Chemical Technology (IICT) and Department of Pharmaceuticals (DOP), Ministry of Chemicals and Fertilizers have joined hands to embolden India's efforts of self-reliance in pharma sector. IICT is to help DOP to establish Centres of Excellence in bulk-drug research in three National Institute of Pharmaceutical Education and Research (NIPER) institutes. DOP will come forward to support CSIR-IICT in developing and transferring indigenous technologies for some of these materials. The Department is planning to allot INR 1000 crores (roughly USD 133 million) to develop Pharma Parks in various states. The companies setting up their units in these parks will be eligible for incentives from the state and central governments.

## Special Update: National Botanical Research Institute

The CSIR-National Botanical Research Institute (NBRI), Lucknow – is amongst one of the constituent research institutes of the Council of Scientific and Industrial Research (CSIR), New Delhi. Originally set up as the National Botanic Gardens (NBG) by the State Government of Uttar Pradesh (U.P.), it was taken over by the CSIR in 1953. Though, initially engaged in research in the classical botanical disciplines, the NBG went on laying an increasing emphasis, in keeping with the national needs and priorities in the field of plant sciences, on its applied and developmental research activities. A time came when it was felt that the name NBG no longer projected the correct nature and extent of its aims and objectives, functions and R & D activities. Consequently, the NBG was renamed as the NBRI, i.e., The National Botanical Research Institute in 1978. This name has since correctly reflected the distinctive character and the R & D activities of this applied botanical institution only of its type in the country.

The aims and objectives of the Institute are pursued through various projects distributed among the following six broad areas of R & D supported by S&T support services for their respective activities:

1. Plant Diversity, Systematics and Herbarium
2. Pharmacognosy, Phytochemistry and Product Development
3. Plant Ecology and Environment Technologies
4. Molecular Biology and Biotechnology
5. Plant Genetic Resources and Improvement
6. Botanical Garden, Plant Conservation and Agrotechnologies

Further details can be found at: https://nbri.res.in/