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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*

## Scientists develop disinfection gateway to fight COVID-19

Scientists at Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum have developed a disinfection gateway. The portable system generates hydrogen-peroxide mist and UV-based decontamination facility to fight the Covid-19 pandemic.

## IIT-Goa to study whether Covid-19 is air-borne in India

Researchers at IIT, Goa are solving a differential equation to study the evolution of virus (liquid drop from sneezing and coughing) in air. They are also designing low-cost, high-frequency, cold plasma-based, negative ion generators for flow visualisation to check the effect on microdroplets.

## Researchers develop mobile apps to aid fight COVID-19

Indian Institute of Science (IISc) Bengaluru and four Indian Institutes of Technology (IITs) have developed mobile apps to aid fight against COVID-19. GoCoronaGo is one such app developed by IISc, which helps to identify people who have crossed paths with COVID-19 suspects. Sampark-o-Meter is another app, developed by IIT Ropar, which helps indicates areas on maps with maximum coronavirus infection possibility.

## IIT Madras develop algorithm to study diseases

IIT Madras researchers have developed computational algorithms to link diseases to underlying genes. The team hopes to develop detailed maps of tissue- and disease-specific networks in future to better understand connections among genes, proteins and diseases. The IIT Madras team comprehensively analysed existing module identification algorithms and developed an improved system that achieved 50% performance improvement in identifying disease-relevant modules over existing approaches.

## Hyderabad firm and Australian University to develop COVID vaccine

Indian Immunologicals Limited (IIL), Hyderabad has joined hands with Australia's Griffith University to conduct exploratory research to develop a lead vaccine candidate. Scientists from both institutions will develop a 'Live Attenuated SARS-CoV-2 vaccine' using what's called codon de-optimisation technology. According to a statement made by IIL, the technology looks promising for developing a vaccine for prophylactic, active, single dose immunisation against the coronavirus in humans, with an enhanced safety profile. When the research is done, the vaccine strain will be transferred to IIL, which will then work with the Central Drugs Standard Control Organisation for phased clinical trials.

## NIPER--Guwahati designs 3D products to fight COVID-19

Researchers at the National Institute of Pharmaceutical Education and Research-Guwahati (NIPER-G) have come up with 3D-printed hands-free object to open and close doors, windows, drawers (both vertical and horizontal), and refrigerator handle, or press elevator buttons, and laptop/desktop keyboards, including turning the switch buttons on/off. The second product is a 3D-printed antimicrobial face-shield to control the spread of novel coronavirus. It was designed after a thorough study to understand how viruses spread through oral, ophthalmic, olfactory and other body cavities.

## Marine red algae to hold key in preventing spread of COVID-19

According to research by scientists at Reliance Industries, marine red algae could hold key to prevent spread of coronavirus as biocompatible compounds extracted from them can be used as a coating material on sanitary items. Scientists at Reliance Research & Development Centre at Ghansoli in Navi Mumbai have carried out research indicating sulphated polysaccharides (carrageenan or SPs) are selective inhibitors of several enveloped and non-enveloped viruses and act predominantly by inhibiting the binding or internalization of virus into the host cells. According to the research paper, *Marine Red Alga Porphyridium sp. as a Source of Sulfated Polysaccharides (SPs) for Combating Against COVID-19*, SPs can be used as a coating material on the sanitary items for COVID-19 prevention.

## Special Update: National Institute of Pharmaceutical Education and Research (NIPER)

National Institute of Pharmaceutical Education and Research (NIPER), located in District Kamrup, Assam, is the first national level institute in India in pharmaceutical sciences with a proclaimed objective of becoming a centre of excellence for advanced studies and research in pharmaceutical sciences. The Government of India has declared NIPER as an 'Institute of National Importance'. It is an autonomous body set up under the aegis of Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Government of India. The Institute is conceived to provide leadership in pharmaceutical sciences and related areas not only within the country, but also to the countries in South East Asia, South Asia and Africa. NIPER is a member of Association of Indian Universities and Association of Commonwealth Universities.

Further details can be found at:  
<http://www.niperguwahati.ac.in/index.html>