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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*

## IISc Bangalore researchers show how worms hitchhike on wasps

An Indian Institute of Science (IISc) Bangalore study has shown how microscopic worms called nematodes that live in fig trees hitch a ride on fig wasps so that they can move from one tree to another, thus aiding in pollination. The nematodes sniff out volatile compounds that the wasps emit by standing on their tails and waving their heads around.

## Indian researchers help cut nitrogen fertilizer waste

Group of scientists at the Guru Gobind Singh Indraprastha University, Delhi have identified phenotypes of rice varieties that determine the efficiency with which cultivated rice varieties (cultivars) use nitrogen or the crop's nitrogen-use efficiency (NUE) in order to improve it and reduce wastage of nitrogen fertilizers applied to them. India was the first country to study 25 phenotypic features in any crop, comparing different cultivars, nitrogen-forms and doses, where twenty of them were found to respond to nitrogen-fertiliser while only eight actually account for NUE.

## SCTIMST and CSIR-NAL researchers develop native stent

Researchers from Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) Thiruvananthapuram, and National Aerospace Laboratories of CSIR (CSIR-NAL) have developed an indigenous flow diverter stent made of superelastic Nickel-Titanium alloy, which can withstand twists and turns of complex artery system without losing grip or shape. The metal mesh is radio-opaque which means better visibility for accurate placing of the stent in the blood vessel.

## Sir Dr. Bose's Crescograph

Sir Dr. Jagdish Chandra Bose is known for his work on radio and microwave optics, and for his seminal work on plant physiology. Dr. Bose invented the Crescograph, an electrical instrument, that could measure the plant's response to different kinds of stimuli like microwaves, chemical inhibitors, and temperature. Dr. Bose is the founding Fellow of the Indian National Science Academy.

## Two new Doppler Weather Systems launched by IMD in India

India Meteorological Department (IMD) has launched two new Doppler Weather Radars (DWR) in Uttarakhand and Himachal Pradesh. DWRs provide precise information about thunderstorms, dust storms, hailstorms, rainfall and wind patterns. The Multi-mission Meteorological Data Receiving and Processing System (MMDRPS) was also launched installed in collaboration with the Indian Space Research Organisation (ISRO). It has the latest tools and process to process INSAT (Indian National Satellite System) data in less than seven minutes.

## COVID -19 Vaccine Intelligence Network

A dedicated web portal called Co-WIN (COVID -19 Vaccine Intelligence Network) has been launched as an extension of the existing electronic Vaccine Intelligence Network (eVIN) module for it to be a comprehensive cloud-based IT solution for planning, implementation, monitoring, and evaluation of COVID-19 vaccination in India. The Co-WIN system is an end to end solution that has utilities for the entire public health system from national up to the vaccinator level. Co-WIN system on a real time basis will track not only the beneficiaries but also the vaccines, at national, state and district level. This will allow the system to monitor the utilization, wastage, coverage of COVID-19 vaccination at the National, State, District and Sub-District level.

## NIOT develops biodegradable Plastic using marine seaweed

The National Institute of Ocean Technology (NIOT) has developed a bio-plastic film using marine seaweed and Polyethylene glycol 3000 (PEG-3000). Researchers from NIOT have successfully developed and tested bioplastic films by opting environment-friendly techniques utilizing seaweed, called Red algae *Kappaphycus alvarezii*, which they cultivated in the Gulf of Mannar region. Utilisation of renewable seaweed is one of those options researchers found viable. The result of the present NIOT study revealed that bio-plastic polymers can biodegrade naturally in a short time without producing any toxic wastes. These can also be disposed of through an ordinary food waste collection mechanism. The study suggests that commercial manufacturing of bio-plastics from this seaweed would be a game-changer in the coming time.

## Special Update: National Expert Group on Vaccine Administration for COVID-19

National Expert Group on Vaccine Administration for COVID-19 (NEGVAC) has been constituted under chairpersonship of Member (Health) NITI Aayog and Co-chairpersonship of the Secretary (Ministry of Health and Family Welfare) with the representation from Secretaries from Ministry of External Affairs, Department of Biotechnology, Department of Health Research, Department of Pharmaceuticals, Ministry of Electronics and Information Technology and Director General Health Services, Director of AIIMS Delhi, Director NARI representatives from the National Technical Advisory Group on immunization (NTAGI), Ministry of Finance and 5 State Governments representing all the regions in India. NEGVAC aims to guide on all aspects of the COVID-19 vaccine introduction in India including regulatory guidance on vaccine trials, vaccine selection, equitable distribution of vaccine, procurements, financing, delivery mechanisms, prioritization of population groups, vaccine safety surveillance, regional cooperation and assisting neighboring countries, communication & media response etc.

Further details can be found at:

<https://www.mohfw.gov.in/pdf/COVID19VaccineOG111Chapter16.pdf>