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India's CSIR-CDRI and Marc Labs to develop drug for stroke





India's Council of Scientific and Industrial Research (CSIR)'s constituent Central Drug Research Institute (CDRI) has teamed up with domestic drugmaker Marc Laboratories to develop a compound for treating heart attack and stroke. The CSIR-CDRI recently obtained permission to initiate Phase I clinical trials for the drug.

The drug company is looking at the development of a synthetic compound S-007-867 as a modulator of the blood coagulation cascade, in particular as an inhibitor of collagen-induced platelet aggregation. The drug will be developed for coronary and cerebral artery diseases.

As an official pointed out, arterial thrombosis is an acute complication that develops on the chronic lesions of atherosclerosis leading to heart attack and stroke. Therefore, inhibition of platelet-collagen interaction is anticipated to be a promising therapeutic strategy to treat intravascular thrombosis.

The compound, S-007-867, significantly inhibits collagen-mediated platelet activation and subsequently reduces release of ATP from dense granules and thromboxane A2 via COX1 activation. It effectively maintains blood flow velocity and delays vascular occlusion and inhibits thrombogenesis without compromising hemostasis.

The drug has less bleeding risk as compared to existing therapies. In animal experiments, the compound elicited better antithrombotic protection than the standard of care with minimal bleeding tendency, the official added.

Application in treatment of COVID-19 complications? Prophylactic use of this compound also could be useful for COVID-19 induced complications.



In COVID-19, critical patients with acute respiratory distress syndrome (ARDS) have high Ddimer and reduced prothrombin time, suggesting a pro-thrombotic state. In addition, these patients have high numbers of circulating neutrophils, inflammatory mediators/cytokine, CRP and lymphocytopenia.

Therefore, drugs reducing platelet reactivity and neutrophil activation could be beneficial, the official said.

Prof Tapas Kundu, director of the CDRI, termed it a great moment for the research institute to license out an in-house developed compound and said it was part of the Institute's commitment of affordable healthcare for all.





Thepharmaletter





Scientists launch study to understand evolution of SARS-CoV2 variants

CSIR-CCMB, IGIB

25th August, 2021

Indian scientists have launched a multi-city project to track the emergence of various SARS-CoV2 variants in the country in the past with a \$9.5-million funding from Rockefeller Foundation. The insights gained from the three-year project, launched in four cities – Bengaluru, Delhi, Hyderabad and Pune – are expected to help the country develop better capabilities for real-time surveillance and epidemiology.

"The project is to understand how various variants have fared in different parts of the country. We will have samples for four cities, maybe six cities, with proper metadata from hospitals. Sequencing them may help us how the variants have evolved," said Rakesh Mishra,

former director of the Centre for Cellular and Molecular Biology (CSIR-CCMB), a Council Scientific and Industrial Research lab based in Hyderabad.

Top scientists involved

Mishra, currently an advisor at CSIR-CCMB, will spearhead the project with a few other top scientists in other cities. Apart from Mishra, who will lead the efforts in the Hyderabad cluster, Satyajit Mayor, Director of Bengaluru-based National Centre for Biological Sciences; LS Shashidhara of Indian Institute of Science Education and Research, Pune; and Anurag Agrawal of Institute of Genomics and Integrative Biology (CSIR-IGIB) in New Delhi, will be in charge of respective clusters.

"We have around 40,000 sequences in mind, but it may go up to 60,000 a year. The funds, provided by Rockefeller Foundation, will be used mainly for consumables and human resources, with building and infrastructure support coming from the existing labs," said Mishra.





A number of research institutions in these four cities are participating in this SARS-CoV2 genomic sequencing effort. "What is unique in this project is that we will sequence only those samples for which there is a reasonable amount of metadata such as age, date of infection, symptoms available, so that we can link the phenomenon that was observed to mutation or

emergence of variant if there is any," said Mishra.

The scientists said the project will be complimentary to what the Indian SARS-CoV-2 Consortium on Genomics (INSACOG) is doing. Even though its primary objective is retrospective sampling, they will also be sequencing fresh samples, particularly those picked up from vaccine breakthrough cases and reinfections.

"Since we are also part of INSACOG, this project will help increase the scale, which, in turn, will help get more granular data for better understanding of the pandemic and also for taking

steps for prevention and control of future waves," said Mishra.

Shashidhara, who is also associated with Ashoka University in Sonipat, said INSACOG has already scaled up its sequencing efforts.

"But it is not enough, considering the scale. The new variant can emerge anywhere. The attempt is to map four-five megacities to understand how variants are evolving and spreading. These are the places where a large number of cases reported. They are also the places that had reported cases throughout the year," he said. He said there is a possibility of extending

the study to Chennai and Mumbai.

Gets approval According to Mayor, who is coordinating the efforts of the Bengaluru cluster, they have already been able to secure approvals from the Karnataka government for collection of samples.





They plan to collect around 10,000 samples from cases reported in the last few months for genomic analysis.

"The objective is somewhat more rarefied than very broad kind of efforts. It is more about looking at what is the nature of variations that happened in the viral genome," said Mayor, adding that this could help them understand how and when variants emerge.



Published in:

Thehindubusinessline





Niti Aayog member bats for investment in rare earth sector





BHUBANESWAR: With rapid adoption of green energy throughout the world, it is necessary for the countries like India to ensure supply of rare earth elements which are extracted from minor resources for different usages, NITI Aayog member VK Saraswat said. Addressing the platinum jubilee celebration of IREL (India) Ltd (formerly Indian Rare Earths Limited), he



said rare earth materials are considered the 24th century materials and India has a huge potential to attract investment in the minor resources sector.

"As green energy is rapidly taking over the oil dominance, we need to make availability of rare earth elements that are being used in many sectors. The IREL has developed many technologies that can be used to reduce carbon footprint," he said. CMD of IREL (India) Ltd and president of Rare Earths Association of India (REAI) D Singh underlined the importance

of rare earth elements and stressed the capacity expansion.

"Rare earth plays an important role in clean and renewable energy production process. We will expand our capacity to three times to have qualitative superiority," he said.

Stating that India has around six per cent of the world's rare earth resources, Additional Secretary of NSCS Dr Ram Mohan said, it produces only two per cent of the rare earth oxides manufactured globally.





There is a huge potential of economic and strategic exploitation of the resources for downstream products, he added.

Secretary of Department of Atomic Energy KN Vyas said IREL is setting up India's first-of-

its-kind Rare Earth Permanent Magnet (REPM) plant at Vizag that will produce Samarium Cobalt (SmCo).

Director of Bhaba Atomic Research Centre (BARC) AK Mohanty highlighted that the rare earth magnets developed in the country not only make India self reliant and fulfil the need of the country but also open the scope for export to other countries.

"Those are permanent magnets with high energy density and high magnetic energy and can be used in various sectors, including atomic energy setup," he said.

IREL monograph and a souvenir on Rare Earths Road Map for Energy Security of Self Reliant India (REES-2021) were released on this occasion. Lifetime achievement award was handed over to Dr M PL Reddy, a retired chief scientist of CSIR-NIIST for his contribution to the field of rare earth research.

Published in:

<u>Newindianexpress</u>





CSIR-CMERI organises virtual programme for MSMEs





New Delhi, Aug 25 (KNN) In a bid to Small and Medium Micro, empower Enterprises (MSMEs), CSIR-CMERI organised a virtual program to provide them access to high-end equipment and facilities of the institute. According to an official statement by CSIR-CMERI on Tuesday, the webinar was attended by over 65 officials from the Central Tool Room and Training



Centre, Kolkata, Bhubaneswar, Patna and

Guwahati and Nagaland, and entrepreneurs.

"CSIR-CMERI has already opened-up its CNC bay which includes five advanced axis milling machines," the statement added. The other advanced Infrastructure options for the Industry and MSMEs of the Nation include Fluid-Bed Heat Treatment Services, Wire-Arc Additive Manufacturing and 3D printing services.

Apart from these, it also include casting-MIM and forging, CNC- coordinate measuring machine, universal profile projector, non-contact 3D surface profiler, horizontal length measuring machine, laser interferometer measurement system, used lubricating oil analysis services, NDT-metallurgical and vibration services, development of customized inspection and monitoring systems, in-situ structural stability and analysis certification check, destructive testing and certification (NABL Accredited) and advanced water testing facilities, the statement said.





Speaking on the occasion, Prof. Harish Hirani, Director, CSIR-CMERI, Durgapur, shared that India aspires to be a 'Global Manufacturing Powerhouse' of the Future.

"The Government of India is also taking rapid strides in establishing the foundations of a

robust 'Manufacturing Economy'. India also aims to be a 'Zero-Defect' manufacturing economy, where there is a minimum tolerance for deviation from precision parameters," he added.

He also said that the primary challenge for the Indian manufacturing sector is enhancing the cost-effectiveness of technologies without compromising the quality parameters.

However, there is an absence of a linkage between a sustained innovative mind-set and the Indian manufacturing sector. The requirement of continuous and Incremental-Innovation for

the Industry is huge, he said.

"This will help the manufacturing industry to understand the Indian industry and markets better and develop customised manufacturing practices tailor-made for the nation," he added.

He said that CSIR-CMERI embraces a 'Collaborative Model with the Markets' whereby the innovation potential of the institute is shared with the MSMEs and Start-Ups and partners them through their growth process.

"CSIR-CMERI is undergoing a continuous process of 'Developing New Mechanical Systems' as per the requisites of the Industries and the MSMEs of the Nation. However, to achieve global standards in manufacturing, an integrated manufacturing ecology is required which will have a grid of the latest technology facilities along with advanced testing and measurement facilities," he added.

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Knnindia





Turning putrid waste into fragrant smells





A new technology from a CSIR lab could address the problem of disposing biomedical waste safely

If you thought biomedical waste from a hospital (blood, body tissues or parts included) smells only of ruination, repose or even death, you might need to change your perceptions.



You might be able to smell the fragrance of life in rotting waste if a new technology transferred by the National Institute for Interdisciplinary Science and Technology (NIIST), a constituent laboratory of the Council of Scientific and Industrial Research (CSIR), gains eventual traction.

The technology involves a solidifying agent, which reduces the risk of spillage and aerosolization, and a disinfectant that helps dispose of the waste as non-regulated medical waste - a 'magic wand' that would convert mounds of stink into rolling hills that waft the

fragrance of a rose garden.

Covid-time peak of waste

The technology, 'Disinfection-Solidification System for Pathogenic Biomedical Waste Disposal,' has been transferred to Bio Vastum Solutions.(CML Group), Thrissur. This comes when the generation of biomedical wastes has witnessed a sharp increase due to the Covid-19 pandemic, NIIST said.





Now, after the successful development of the prototype of biodegradable plates, the startup will be looking to establish their first manufacturing unit to develop various biodegradable products. This will help protect the environment, create jobs and increase revenue of farmers.

Joshy Varkey, Managing Director, Bio Vastum Solutions (CML Group), the transferee company, told BusinessLine that an otherwise putrefying biomedical waste (including liquid) will now solidify thanks to the NIIST technology, to which his company will add fragrance agent of a suitable choice.

According to Varkey, this could potentially render the difficult task of biomedical waste processing like a breeze, with fragrance added for 'good' measure. "There is no technology available anywhere in the world that facilitates at-source (in situ) disinfection of the waste."

Ferrying waste for incineration

Currently, assorted waste is collected and incinerated at respective hospitals. Those hospitals in Kerala with no incinerators depend on an Indian Medical Association (IMA) division and the State Pollution Control Board to take it to Palakkad for incineration at the IMA's facility.

One significant advantage of NIIST technology is that it solidifies liquid waste. Even if it has to be carted out to Palakkad, this ensures that there's no spillage along the way and prevents inadvertent mixing or contamination in the unlikely event of a mishap involving the toppling of the carrier.

Since the technology carries out disinfection on the spot and liquid wastes are solidified, it could progressively allow for mixing with even municipal waste, not currently possible under the law. After all, pathogens and infective agents will have already been eliminated to allow for safe mixing.

No scavenging threats





Solidified biomedical mixed with municipal waste would also rule out the ugly prospect of birds foraging in the raw litter, picking on it, and letting go at random in flight.

The technology also rhymes well with the Make in India, Made in India, Swachh Bharat,

Swasthya Bharata campaigns of the Central government. "Over the next five-six months, we propose to tie up with virology labs for third party certification, followed in due course by verification," says Varkey.

Plans factory next

Bio Vastum has also given a lead time of one year for these processes to happen and also reach out to experts, the Pollution Control Board, hospitals, municipalities, people's representatives and the people at large to convince them of the efficacy of the technology and its ecologyfriendliness.

"We will then think of setting up a factory. Statistics say the country produces 800 MT of biomedical waste in a single day. So, we need to set up a factory with a capacity of 300,000 MT of the two products. States can have own factories to produce in required quantities," says Varkey.

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Thehindubusinessline





Guru Nanak Dev University, Amritsar, releases science journal

SciRox, the Science Club of Guru Nanak Dev University, released a peer-reviewed quarterly science education journal, Inertia. District Education Officer (SE), S Satinderbir Singh, today released the first issue of Inertia; An Interdisciplinary Science Education Journal in an inaugural function held at Government Girls Senior Secondary School, Mall Road.

The first issue of the journal consists of messages and articles from eminent personalities, which includes Prof (Dr) Jaspal Singh Sandhu, Vice-Chancellor, Guru Nanak Dev University, Amritsar, Prof Arvind, Vice-Chancellor, Punjabi University Patiala, Prof RC Singh, university honorary professor, GNDU, Dr Somdatta Karak, science communication officer at CSIR-CCMB, Hyderabad, and many more.

SciRox, Science Club, GNDU, with a vision that open access provides an equitable way to disseminate scientific ideas started this journal that aims to publish science articles for non-experts so as to promote scientific temperament among people belonging to different age groups, background and demographics. The journal will be published on a quarterly basis and will also invite write ups and contributions from eminent scientific scholars and scientists from the region. Addressing the gathering, university honorary professor, Prof RC Singh said the primary focus of this journal was to popularise science in regional languages and take the message of science to the society.

Published in:

Tribuneindia

'We will have our fully 'Made in India' PSA unit ready within a month

PUNE Dr Ashish Lele, director, National Chemical Laboratory (NCL) in Pune to Dheeraj Bengrut about the role NCL played during the pandemic and new research projects going on at the institute. Dr Lele was former chief scientist at CSIR-NCL and took charge of NCL on April 1, 2021.

Dr Lele has also served as senior VP and head, Advanced Materials and Alternative Energy Group, Reliance Industries, prior to take this posting.

How do you plan to take NCL forward now that you are director? In last five months since I have joined NCL, there are few things I am trying to bring in. I am trying to re-emphasise this. These are fundamental things, as there is a purpose for this laboratory, which is why it was started. It is to advance knowledge and use chemical science for the good of people. We actively encourage our scientists and our research students to take a leadership role in science in their own areas. And the second part is to apply science for the good of people, which means we need to take science and convert it for uses for our country, as well globally.

The other thing which we do is work with the industry... we interact with them, work and develop technologies with them. How do we make this happen? For that first we have to choose the right problems to work upon. There are certain important trends happening in India and the planet, for example climate change is a problem. All these are difficult problems and we have to break it up in different parts to work on. We then protect that knowledge of good science, and work towards converting it for real life usage. It is worked in stages – laboratory, bench, pilot experiment and then scale for production.

What new research projects and initiatives are currently related to the Covid pandemic?. NCL developed Pressure Swing Absorption (PSA) technology which allows continual supply of oxygen taken from the air. CSIR NCL has developed this technology and we have set up

more than 200 PSA units across the country, which is saving lives of patients in this critical times. There is a material in that PSA unit which actually separates oxygen from air - it is called zeolite, and we are currently importing it from other countries. So we are bujilding the entire plant, but its heart - the zeolite is brought from outside. We took up the challenge to develop zeolite on our own. After I joined, we put a team of 10 to 12 scientists from different divisions on the project. I am happy to tell that we are finally made the 'zeolite' material as a pilot and there are many aspects of technology which we called basic engineering. So we will have our fully 'Made in India' PSA unit in our country and within a month it will be on the market. This will not stop here and we will continue to develope multiple zeolites and other products. Another important project which we are working or rather participating in which is done across the country is genome surveillance. It is an all India effort, several institutions are participating in it and every week we collect around 200 Covid samples and we upload data. This surveillance helps us understand the spread of the virus, and who are more vulnerable, among other things.

Any new academic courses or skill development projects for research students coming up at NCL?

We want to go beyond our research Phd students and for that we are offering skilling

programmes for industry professionals. So industries send their engineers and young people for traininig and we have a year long calendar every year. This year two new skill development programmes would be added. One about green hydrogen technology to generate energy. And also the sewage surveillance system which we are currently doing for the Pune Municipal Corporation (PMC). We can always help other research institutes to set up a course and call other scientific institution students to the NCL for training. Published in: Hindustantimes

CSIR-IIP

24th August, 2021

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Sahara News Bureau

Third COVID-19 Wave Likely to Peak Around Late October; Experts Submit Report to PMO

23rd August, 2021

A committee of experts constituted under the National Institute of Disaster Management (NIDM) has warned of a third COVID-19 wave that could peak around late October. The committee was set up under the direction of the Home Ministry which had sought better preparedness for children who might be at high risk. The report has been submitted to the PMO.

The study titled "Third Wave Preparedness: Children Vulnerability and Recovery" has details about the possibility of COVID-affecting children and the required strategies to deal with the pandemic. The report has underlined that the "paediatric facilities like doctors, staff,

equipment like ventilators, ambulances, etc are nowhere close to what may be required in case a large number of children become infected".

The report said the third wave is already upon us if we look at the rising R-value, the reproduction rate of COVID-19, which has increased from 0.9 to 1 over the last week of July.

The report has called for prioritising vaccination among children with co-morbidities and a special focus on those with disabilities. Even with "strict interventions", the peak of the third wave is expected to arrive by late October, the experts have concurred with earlier

assessments of different institutions. Several studies have spoken of the likelihood of a third wave but these are estimates.

The report has categorically underlined two important points - kids as vulnerable because they haven't been vaccinated and are more prone to severe infections though it can pass the virus to others. However, the other estimates have said the third wave may prove to be less severe than the second.

The committee has suggested "a holistic home care model, immediate increase in paediatric medical capacities and prioritising mental health issues among children". It has mooted structuring of COVID wards in a way that allows children's attendants or parents to safely stay with them through their recovery.

The experts in the committee have expressed concern over about 82 per cent shortage of paediatricians in primary health centres and 63 per cent vacancies in community health centres.

The report said, "The situation is already dire, and might worsen due to lack of adherence to COVID Appropriate Behaviour (CAB), insufficient medical facilities and lagging vaccination". The report further added that about 60- 70 per cent of children during the second wave got hospitalised due to COVID had co-morbidities and their low immunity was the primary cause

behind many developing MIS-C (Multi-system Inflammatory Syndrome), a "rare but serious condition" developed post-COVID recovery.

The committee of experts included Anurag Agarwal, director of CSIR-IGIB; MC Mishra, exdirector of AIIMS; Naveen Thacker, president of the Indian paediatricians Association; Gagandeep Kang, professor of CMC, Vellore and A.K. Pandey, chairman of state monitoring committee on shelter for urban homeless.

The report has called for "a scientific approach coupled with focused public spending" to deal

with pandemic management.

Published in:

Weather

'No wetlands planned along proposed Western Bypass'

Panaji: The Goa State Wetland Authority (GSWA), in its report to the state government, said that no water bodies along the path of the proposed Margao Western Bypass are being considered for declaration as wetland. "The nearest water body under consideration for identification as a wetland is approximately 200m from the proposed Margao Western Bypass. Barringtonia

acutangula, a freshwater mangrove, was

observed to be very prominent at all locations except at location 6," the report said.

"A few water bodies have been observed which most probably are used for irrigation of the adjoining agricultural land. There is also the presence of freshwater mangroves along the proposed Western Bypass at the inspected sites," the report observed.

The joint site inspection was conducted by GSWA and Goa State Biodiversity Board personnel on water bodies around the site of the bypass, which will go through the villages of Seraulim, Benaulim and Varca.

After the visit, the data was cross-referred with a CSIR-NIO study on wetlands in Goa. The team also observed prominent biodiversity in and around the inspected areas. The team was accompanied by representatives of the technical support group who are preparing the people's biodiversity register in the village panchayat of Cana-Benaulim.

The prominent floral species observed include barringtonia acutangula, samanea saman, sida acuta, sedge grass, reed grass, needle grass, hydrilla sp, cayratia trifolia, cucurbit asp, salvinia sp, colocasia sp, pennisetum sp grass, cassia tora, brachiaria spp grass, ricinus cummunis, polygonum sp, oryza sp, Cyperus sp, lymnohila sp, scirpus sp grass and cocos nucifera.

In accordance with NGT directives, the state has constituted a 10-member committee to prepare and execute a plan of action for the construction of the remainder of the bypass through Benaulim and Seraulim, and the report has been placed before the committee. A similar report has been prepared by the PWD and WRD, a senior official said.

Union Minister Jitendra Singh: India Will Add 100 More Earthquake Observatories By 2026

During his address at the inaugural ceremony of the Joint Scientific Assembly of International Association of Geomagnetism and Aeronomy (IAGA) – International Association of Seismology and Physics of the Earth's Interior (IASPEI), Minister of State (MoS) for Science and Technology, Jitendra Singh announced that since the Indian subcontinent is considered as one of

the world's most disaster-prone areas in

terms of earthquakes, landslides, cyclones, floods, and tsunamis, the government plans to set 35 more earthquake observatories by the end of this year. Along with this, he also said that the country is aiming to add 100 more earthquake observatories by 2026. The Joint Assembly of IAGA and IASPEI is being hosted by the CSIR-NGRI with the support of the Ministry of Earth Sciences.

News agency PTI quoted Jitendra Singh as saying, "The government is planning to take all

necessary steps to meet these challenges of natural disaster. In the wake of the same, India is going to have 35 more earthquake observatories by the end of this year and 100 more such observatories in the next five years."

Jitendra Singh also claimed that after Independence, i.e. in the last six-and-a-half decades India had managed to set only 115 earthquake observatories. But under the leadership of Prime Minister Narendra Modi, there is going to be a tremendous leap in the number of earthquake observatories in the country.

The minister, in his address also talked about how geology as a recognized science has probably reached its zenith today with human society's struggles with challenges at multiple levels of interactions with Mother Earth. He further hoped that the Joint Scientific Assembly of IAGA-IASPEI will act as a pathway in bringing on board a greater number of researchers

and practitioners from a global community who can work on issues related to giving science to society.

Jitendra Singh impressed upon India's commitment to supporting various projects of earth system science to quantify the seismic hazard for better land use and urban planning and creating disaster-resilient infrastructures for reducing risks.

Singh said that the linkage between the deep earth structure and geomagnetism, and the role of fluids in earthquake nucleation are a few examples to emphasize the significance of the

Joint Scientific Assembly of these two Associations to promote cross-disciplinary research.

About Jitendra Singh

Under Modi 2.0, we witnessed the first cabinet reshuffle in July 2021. In the reshuffle, Dr. Jitendra Singh was trusted with the role of Ministry of Science and Technology and the Ministry of Earth Sciences with an independent. While taking charge of the office, Singh shared the both he and PM Narendra Modi have similar goals.

Talking about the same, Singh said, "We will work towards using science for promoting ease of living. We will also try to fulfill the vision of Prime Minister Narendra Modi Ji of bringing a Blue economy."

Published in:

Womansera

CSIR-NEIST focusses on 'Aroma Mission', 'Jigyasa' & Medical R&D

22nd August, 2021

JORHAT/ITANAGAR: In sync with Prime Minister Narendra Modi's vision of new India and SSR (Scientific Social Responsibility) of the Science community and Institutions, a team of scientists from CSIR-NEIST, Jorhat, led by its Director, G Narahari Sastry, visited several farmers and their field locations and schools to propagate the scientific temper in Arunachal Pradesh

'JIGYASA' is one such ambitious programme. It aim at creating the academia-scientific ecosystem. Under the aegis of 'JIGYASA', a team of scientists led by Dr G. Narahari Sastry, Director of CSIR-NEIST, Jorhat, Assam distributed books, laboratory apparatus and saplings of medicinal plants in three schools of Upper Assam town of Moran. These schools are viz. Batamara High School, Nehru Hindi Vidyalaya and Moran Higher Secondary School. It is a major endeavour on the part of CSIR to reach out to schools in order to provide a linkage to research institutions so as to implement a well-planned and systematic research laboratory-

oriented teaching and learning. Similar exercises were also carried out in three Dibrugarh schools, namely Dibrugarh Government Girls HS and MP School, Dibrugarh VKV and Dibrugrah Bengali High School.

The team also visited ICMR-Regional Medical Research Centre, (ICMR-RMRC) Dibrugarh on 18 August, 2021 and called upon the Director, ICMR-RMRC and had a meeting a core scientist of the institute on SARS-CoV-2 genome sequencing. It may be mentioned that thre

insititutions of NE India -- CSIR-NEIST, ICMR-RMRC and DBT-IHBT, Imphal -- are jointly working for genome sequencing of SARs-CoV-2 variants.

On August, 2021 Dr Sastry inaugurated the seventh 'Multilocational Trial & Regional

Research Experimental Farm' established by the CSIR-NEIST under the 'CSIR Aroma Mission' at Dhemaji, Assam. Under the CSIR-AROMA MISSION Phase-II an Essential Oil Distillation Unit was commissioned at Laimekuri, Dhemaji District, Assam. This has been done to boost Rural Entrepreneurship and to augment the living of the rural dwellers. CSIR-NEIST has the mandate to cater to all the NE India states. Thus, similar distillation units were also commissioned in Oyun and Runne of East Siang District, Arunachal Pradesh. CSIR-NEIST can take bow for achieving a feat by installing 29 such distillation units throughout the NE India under the 'CSIR Aroma Mission'.

The team from CSIR-NEIST winded up the tour by holding meeting with Dr Raina Dukhum, Joint Director, Health Services, Pasighat in Arunachal Pradesh. They discussed various aspects connected with the screening and confirmatory tests of COVID-19 samples of Pasighat. Both the sides agreed to cooperate in all endeavours.

CSIR Award for Police DAV school students

Two students of Police DAV Public School have won a major recognition as their project has been selected among the top 14 proposals from across Indian in a nationwide competition organised by Council of Scientific and Industrial Research (CSIR)-Innovation Award for School Children 2021. The project titled 'SALIL' is a Smart Water Dispenser created by Prabhnoor

Kaur of Class VIII and Jasnoor Kaur of Class X under the guidance of Sanjeev Mahajan, Jatinder Kaur and Cinny Malhotra. Police DAV is the only school from Punjab which has bagged the recognition.

Entries are selected on the basis of the novelty and utility for any new concept/ idea/ design or solution to an existing societal problem. Any Indian school going student below 18 years of age can submit the proposal through school.

Students observed that a lot of water is wasted in school water purifiers, about 3 litre of water for every litre of water purified. So they conceived the idea of a Smart Water Purifier to avoid this wastage of water. Explaining the concept, the students said 'SALIL' was designed to dispense right amount of water for a particular purpose. For example, if the user swipes once in front of the sensor, it dispenses lesser amount of water. If the user swipes twice, more water is dispensed. The system is based on Arduino board and IR Sensor. A flow sensor is incorporated to check the exact amount of water dispensed. There are two switches on the panel to increase and decrease the amount of water required. Mode selection can be made by

pressing both switches momentarily. A liquid crystal display is also incorporated to make system interactive."

They added, "A prototype was created and it was firstly tested in the lab for 10 days and

thereafter installed in 10 different houses. The observations were quite promising as it could save gallons of water."

Principal Rashmi Vij congratulated the students and school.

NGRI to host virtual scientific meet on geomagnetism, seismology

 21^{st} August, 2021

The National Geophysical Research Institute (NGRI) here will be hosting a week-long virtual 'Joint Scientific Assemblies (JSA) of International Association of Geomagnetism and Aeronomy (IAGA) and International Association of Seismology and Physics of the Earth's Interior (IASPEI) in which scientists from across globe will be participating starting from Saturday.

Union Minister for Science & Technology Jitendra Singh and top scientific heads including CSIR-DG Shekhar C. Mande, DST secretary Ashutosh Sharma and former Earth Science secretary Madhavan Nair Rajeevan will address the inaugural session at 3.30 p.m.

It is the only third such major scientific meet with the first one held in Madrid (Spain) way back in 1969 and the second one in Hanoi (Vietnam) in 2001. This edition is being hosted by NGRI to commemorate its diamond jubilee celebrations.

About 850 participants from 57 countries are scheduled to attend the meeting which was originally slated to be held in HICC but due to the ongoing COVID pandemic, it was shifted to the virtual space, said chief scientist & head of the seismology observatory D. Srinagesh on Friday.

The 13th General Assembly of the Asian Seismological Commission will be coterminous with the JSA, adding to the variety and diversity of the scientific program, said Director, CSIR-NGRI and chair, local organising committee V.M. Tiwari. The virtual conference will open up new vistas through interaction and could lead to fruitful collaborations to further science. Deliberations will be updated through the website (<u>http://iaga-iaspei-india2021.in/</u>).

Dr. Srinagesh said the joint assemblies of IAGA and IASPEI, two major associations forming the International associations of scientists of International Union of Geodesy and Geophysics (IUUG), will foster cross-disciplinary ideas and promote joint research programs for improving understanding of the coupled earth processes and their impact on society.

Aeronomy from the Earth's internal structure, earthquake genesis to observation, simulation of solar and planetary magnetic field, space weather, linkage between the deep earth structure and geomagnetism, and the role of fluids in earthquake nucleation are among subjects to be discussed.

The scientific program will include plenary and public lectures, technical sessions and posters in themes belonging to the core scientific activities of both associations, he said and pointed out that the pursuit of aspects of geomagnetism started in the 19th century when the world's

second oldest observatory was set up in 1826, at Colaba, Bombay. India also has a history of pioneering seismological research in the solid earth science that resulted in the discovery of the Core of the Earth, he added.

Delhi: How green is my lake! That sparkle hides a secret

NEW DELHI: The first phase of reviving Sanjay Van lake in south Delhi has been completed. The so-called floating rafters holding hormonally treated plants to extract excess pollutants from the water have done their work. A grid-based aeration system to enable bubble diffusion is now being installed to boost the level of dissolved oxygen in the water levels to catalyse the water purification

An official overseeing the project said DJB had settled for a combination of wetland restoration system and aeration. "The waterbody falls under the Delhi Development Authority's jurisdiction, but we are carrying out its rejuvenation under the City of Lakes project," the official said. "There are five ponds in Sanjay Van and we selected this particular one because of its relatively high contamination level having received water from an untreated drain. This lake has a holding capacity of 149 million gallons per day of water."

The official disclosed that such interventions were also being made in the waterbodies at Jaffarpur Kalan, Nangloi, Rajokri and Sonia Vihar, while an aeration system had been installed in the Rani Khera lake. Delhi Jal Board proposes to revive and significantly improve the water quality at 50 sites at least by the yearend.

The floating rafter technology, developed by CSIR-NEERI, employs hormone-treated species such as cyperus and canna to soak up pollutants. Each square rafter is made from PVC pipes

and each is lined with geo-netting to support the plants. A blend of different plants is used on each float to increase the nutrient uptake from the water. These small floating islands in the lake are also being used by ducks for nesting.

The official explained that aeration techniques to raise the dissolved oxygen levels have to be used in conjunction with floating rafters to enhance efficiency. "In the absence of such an aeration mechanism, only 10–12% of the desired purification is achieved," the DJB official explained. "The roots of the plants provide the surface for bacteria to grow. Dissolved oxygen at 1–2 levels will be consumed by the oxidation process alone and constant aeration needs to be done to keep driving the process forward."

The number of rafters depends on the volume of water and the pollution load. DJB officials stated that the number of floating rafters employed in different waterbodies are 150 in Rani

Khera, 294 in Jaffarpur Kalan A, 47 in Jaffarpur Kalan B, 401 in Nangloi, 597 in Sanjay Van and 1,375 in Sonia Vihar.

DJB vice-chairman Raghav Chadha said that the board was working to realise the vision of Delhi becoming the City of Lakes. "We have successfully cleaned Sanjay Van lake and deployed floating rafters to enhance its water quality. This will not only beautify the lake, but also improve groundwater table," he claimed.

Agilent donates AriaMx Real-Time qPCR instruments to five hospitals for COVID-19 research

Agilent Technologies announced the contribution of Agilent AriaMx Real-Time qPCR instruments to five research hospitals Vision in India to support their COVID-19 Agilent is initiatives and help them serve the community at large. As part of this effort, labs and diagnostics Agilent India partnered with Tata Memorial Hospital, Mumbai, Tata Medical Center Kolkata, Gujarat Technological University (GTU), Institute of Genomics and Integrative Biology Delhi (CSIR-IGIB), and Kidwai Memorial Institute of Oncology, Bengaluru. "It's an honour for Agilent to partner with these eminent institutes and hospitals in their pursuit of fostering innovation, supporting scientific development and furthering research initiatives in these trying times," said, Bharat Bhardwaj, Country GM, Agilent India. Dr Mohammed Faruq, Principal Scientist, CSIR-IGIB, "We thank Agilent and their entire team for extending their support in furthering our COVID-19 research initiatives at IGIB. Since the onset of the pandemic in India, the team at IGIB has been offering various research-based genome sequencing services to numerous government health centres and academia." Dr Faruq further added, "Currently, IGIB is supporting the Government of India in RT-PCR tests daily. This instrument from Agilent will make our setup more efficient and help increase the number of tests done every day. We also hope that it would prove its utility in various research exercises which IGIB is undertaking that includes high throughput molecular surveillance, vaccine breakthrough genome sequencing and reinfections sequencing of SARS-CoV-2."

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Biospectrumindia

The apple tree prune waste, generated annually in orchards and used as a fuel, is now being put to use for making biodegradable plates, cutlery and packaging material by a local startup. Tonnes of wood waste from apple trees, which are pruned every year to get rid of the unwieldy growth, are being utilised for the environment-friendly production. With its

no other use, the pruned twigs and branches are normally burnt as a fuel during winters by villagers.

Himjoy Enterprises is founded by a Himachali couple, Bhanu Uday Singh Kanwar and Devangini Kanwar. They are from the apple belt of Kotkhai. Bhanu, a civil engineer, quit his job to return to his apple orchards.

They have successfully developed the prototype of biodegradable plates using apple tree prune waste with the help of CSIR-NIIST, Kerala. They have also received a financial grant from IIT, Mandi, to further develop the technology for the commercial use.

"The apple prune waste is generated on annual basis in apple farms, which is burned by the farmers, so we thought of putting it to some use," said Bhanu. Both, central and state government are working to minimise the use of plastic and plastic-based products. "The innovation can be helpful for everyone as plastic products are non-biodegradable and have chemicals," he said.

Now, after the successful development of the prototype of biodegradable plates, the startup will be looking to establish their first manufacturing unit to develop various biodegradable products. This will help protect the environment, create jobs and increase revenue of farmers.

CSIR-CEERI

20th August, 2021

सीरी के प्रथम निदेशक पद्मभूषण डॉ. अमरजीत सिंह का निधन

वैज्ञानिक जगत को अपूरणीय क्षति - डॉ. पी सी पंचारिया

बहुत सम्मान से लिया जाता है। वह निर्वात के साथ साथ अन्य सहकर्मी भी उपस्थित थे। समर सहारा / पिलानी / सुनील कुमार नलिका इलेक्ट्रॉनिकी क्षेत्र के एक उत्कृष्ट कार्यक्रम का संचालन करते हुए मीडिया एवं शमो वैज्ञानिक होने के साथ-साथ अत्यंत परिश्रमी जनसंपर्क अधिकारी रमेश बौरा ने उपस्थित स्थित के पिलानी जिले झुझुनू एवं मानवीय गुणों से परिपूर्ण व्यक्तित्व थे। कार्मिकों के समक्ष डॉ. सिंह का संक्षिप्त सीएसआइआर-सीरी के वैज्ञानिक निदेशक माइक्रोवेव ट्यूब्स के क्षेत्र में आज भी डॉ. परिचय प्रस्तुत किया। पद्मभूषण स्वर्गीय डॉ. पद्मभूषण डॉ अमरजीत सिंह का कोई सानी नहीं है। अपने संक्षिप्त अमरजीत सिंह का जन्म 19 नवंबर 1924 सिंह का 17 अगस्त उद्बोधन में डॉक्टर पंचारिया ने कहा कि को हुआ था। वे पहली बार सीरी में सहायक 2021 को अमेरिका के सीएसआइआर - सीरी के निर्माण में डॉ. निदेशक एवं प्रभारी अधिकारी के रूप में

शाकाकुल पारवार म उनकी पत्नी और तीन पुत्र हैं। संस्थान के सहकर्मियों ने सभागार में आयोजित कार्यक्रम में स्वर्गीय डॉ. अमरजीत सिंह को श्रद्धा सुमन अर्पित किए। संस्थान के निदेशक डॉ. पीसी पंचारिया ने सभी सहकर्मियों की ओर से स्वर्गीय टॉकरर फिंट को श्रद्धा सुमन	त कार्यकाल ने भी नवाजा के लिए वर्ष (FICCI) 1 भूषण से वा पिलानी	
पंचारिया ने सभी सहकर्मियों की ओर से स्वर्गीय डॉक्टर सिंह को श्रद्धांजलि देते हुए तेन्यनियों अधिकारियों पत्नं अन्य पहत अनेक सम्मानित करने के अलाव	ग भूषण स त्रा पिलानी	
कहा कि उनके निधन से वैज्ञानिक जगत को ने स्वर्गीय डॉ. सिंह को श्रद्धा सुमन अर्पित उन्होंने वर्ष 1963 से 1983 अपरणीय क्षति हुई है। उन्होंने बताया कि डॉ	रूप म मा तक कार्य	

अमरजीत सिंह का नाम वैज्ञानिक जगत में किए। सभागार में अमरजीत सिंह का नाम वैज्ञानिक जगत में कार्यक्रम में वरिष वै

किए। सभागार में आयोजित किए गए इस किया तथा आई ई ई ई के वे आजीवन फेलो कार्यक्रम में वरिष्ठ वैज्ञानिकों एवं अधिकारियों रहे।

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Samar Sahara

CSIR-IHBT

20th August, 2021

केंद्र शासित प्रदेश है, जिसे सगंधित फसल (क्लेरी सेज, और कारगिल (कारगिल, संकू गया है। भारतीय फूलों की खेती विशिष्ट जलवायु परिस्थितियों के वाइल्ड मैरीगोल्ड, डैमस्क रोज, और कुर्बाथांग गांव) जिलों के का बाजार 2018 में 15700 कारण ठंडे रेगिस्तानी क्षेत्र के रूप लैवेंडर, मिंट, ड्रेकोसेफालम, सात गांवों में लिलियम बल्ब रुपए करोड़ था और 2024 तक में जाना जाता है। यहां दिन भर आर्टेमिसिया) और पुष्प कृषि प्रदान किए। पुष्प कृषि मिशन के 47200 करोड़ रुपए तक पहुंचने शुष्क हवाएं चलती हैं, गर्मियां फसल (लिलियम, ट्यूलिप और वरिष्ठ वैज्ञानिक सह नोडल डा. का अनुमान है। गर्म और आर्द्र होती हैं जबकि ग्लैडियोलस) जो लद्दाख में 6 संस्थान लदाख में सगंधित फसलों और फूलों की खेती को सर्दियों में तापमान में बहुत खेती के लिए उपयुक्त हैं तथा अधिक गिरावट होती है। यह इनकी खेती और प्रचार के लिए बढ़ावा देने पर ध्यान केंद्रित कर रहा है। संस्थान ने उद्योग और क्षेत्र प्राकृतिक सिंचाई सुविधाओं समझौता ज्ञापन पर हस्ताक्षर वाणिज्य विभाग, लद्दाख के साथ उच्च मूल्य वाले सगंधित से वंचित है व सुगंधित फसलों किए हैं। प्रधान वैज्ञानिक फसल और पुष्प कृषि फसल, जो लदाख में खेती के लिए और फूलों की खेती के लिए (रासायनिक अभियंता) ई. उपयुक्त हैं की खेती और प्रचार के लिए समझौता ज्ञापन पर उपयुक्त है। संस्थान ने उद्योग मोहित शर्मा ने बताया कि हस्ताक्षर किए हैं और वाणिज्य विभाग के सहयोग संस्थान नुब्रा घाटी में अरोमा से केंद्र शासित प्रदेश लदाख के मिशन के तहत एक प्रसंस्करण डा. संजय कुमार निदेशक, सीएसआईआर-आईएचबीटी

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Divya Himachal

'Affordable alternative, infra needed before imposing complete ban on single-use plastic'

In a welcome step to curb pollution caused due to rampant use of plastic, the Central Government has issued a notification banning single-use plastic across the country from 2022. While majority of States have banned use of plastic bags, what the Central Government needs is a foolproof strategy with affordable alternatives and infrastructure, say environment experts. India today is battling relentless inflow of plastic-waste touted at more than 15,000 tonnes per day. A study of plastic waste

characterisation performed by Central Pollution Control Board (CPCB) in 60 major cities of the country suggests, 66% of plastic waste generated was constituted by high and low density polyethylene (HDPE/LDPE) materials with plastic carry bag as one of the major components. Maharashtra Government has implemented a blanket ban on single-use plastic in 2018. However, notwithstanding the ban, use of plastic bags has continued with its presence evident with most fruits or vegetable vendors and the choked drains in cities.

Owing to the large area under impact, the capacity of the State government to impose a ban ensuring the necessary monitoring mechanism remains a challenge. Would a blanket ban solve the crisis? Though the idea of restricting the inflow by imposing a ban could have been a welcome idea, the question on the economics, availability and applicability of alternatives remains unanswered. Plastic bans can be less effective if users simply switch to other singleuse bags which include paper bags. "The recent notification pushed ban on plastic by one more year. By some reason or other, the ban on single-use plastic is getting extended. Maharashtra already imposed ban on plastic, however, the implementation completely failed,"

said Kaustav Chatterjee, Founder, Green Vigil Foundation to The Hitavada. Chatterjee said, "To implement ban on single use plastic, we need to provide affordable alternatives in the market and also need to have a infrastructure to implement the same, which were the main reason behind failure of plastic ban in Maharashtra." In Maharashtra, the thickness of plastic

carry bags has been increased to 75 micron from September 30, 2021. But, there exists a huge volume of stock of 50 micron which is difficult to be consumed in stipulated time period.

Extended Producer responsibility has been introduced but it will be challenging to implement unless an infrastructure is erected for collection, segregation and transportation of used plastic for reuse to cement kilns, pyrolysis, road construction etc., he added. Plastic ban can be less effective if users simply switch to other single-use bags like paper bags. However, switching to paper bags also has its own environment concerns like its production require substantial water to produce and heavier than single-use plastics escalating greenhouse gas emissions relating to its transport. Therefore, there is an urgent need to rethink on the available alternate options including its costing and availability to implement the ban from 2022. "There is no doubt that plastic is choking our environment. Ban on single-use plastic should be implemented even voluntarily. But most importantly, we must learn to start waste segregation so other kinds of plastic can be reused. Lack of segregation is the real culprit. Once it gets mixed with other solid waste, it looses its resource value and goes into environment, choking even our oceans," said Dr Atya Kapley, Head, Director's Research Cell (DRC) and Senior Principal Scientist, CSIR-NEERI.

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