





## **NEWS BULLETIN 11TO 15 M&Y 2021**











## **CSIR-CMERI** transfer 125 different technologies to MSMEs





New Delhi, May 14 (KNN) CSIR-CMERI in the last five years has transferred 125 different technologies to the MSMEs for empowering the sector at large and setting up specialized manufacturing hubs to improve the technical capabilities of the National Industry Base and Human Resource Profile, said Prof. Harish Hirani, Director, CSIR-CMERI.



He said this addressing a webinar which was organized by MSME-DI, Thrissur entitled 'Oxygen Enrichment Technology & Latest Credit Facilities from SIDBI to MSMEs' on the occasion of National Technology Day- 2021 on Tuesday.

"CSIR-CMERI has recently organized a series of virtual interactive sessions with various state MSMEs, to maximize the infusion of the technological advancements in the products/process and capacitate the MSMEs to lead the economic and social development of the country. Equipping the MSMEs with technology know-how will facilitate increasing the quality and productivity and thereby making them globally competitive," he added.

He said that MSMEs are the key drivers of economic growth, empowering and enabling them through carefully-researched technologies will also help generating employment opportunities.

"Numerous skill development and awareness generation programs are being continuously organized by CSIR-CMERI to empower the MSMEs and the humanity at large with CSIR-CMERI scientific Know-How," he said.





The Oxygen Enrichment Unit developed by CSIR-CMERI is a decentralised oxygen generation solution. The CSIR-CMERI OEU is an in-situ solution, which can assist the oxygen generation capacity of the nation as a whole for various medical needs.

"This technology has already been delivered to nine MSME partners, thereby expanding the oxygen generation base of the nation and aiming to transform India as a manufacturing powerhouse of OEU. An affordable 50 LPM unit may also be set up for rural health facilities with slight modifications. A strengthened MSME network in India empowered by technology can help India tackle any unforeseen crisis in the future," he added.

GS Prakash, Jt. Director, MSME-DI, Thrissur, stated that oxygen capacity today is inadequate as per the current demands. More than oxygen generation, the major issue faced is oxygen transportation and storage capacities.

"CSIR-CMERI has come up with a very timely technology to address the requirements through the Oxygen Enrichment Technology. Since, the Industries have had to surrender their Oxygen, prolonged denial of this essential component will pose a huge challenge to the MSMEs," he said.

The MSME- Technology Centre and the MSME parks can also be roped in for providing adequate manufacturing infrastructure for the MSMEs to kick-start manufacturing of this very crucial technology, he added.







### **Coronavirus** genetic material found in Hyderabad's Hussain Sagar, two other lakes





The presence of genetic material of the novel coronavirus in Hussain Sagar and other lakes in Hyderabad could act as an early warning signal for future waves of the COVID-19 pandemic. A study conducted on a few lakes in Hyderabad including Hussain Sagar, Pedda Cheruvu (in Nacharam) and Nizam Talab — showed a surge in the SARS-CoV-2 genetic material



present in the water samples starting from February 2021, coinciding with the onset of the second wave.

The study was conducted by monitoring lake water samples over seven months, by scientists from the Council Of Scientific And Industrial Research–Indian Institute Of Chemical Technology (CSIR-IICT) and CSIR-CCMB (CSIR-Centre for Cellular and Molecular Biology) in Hyderabad, and AcSIR (Academy of Scientific and Innovative Research) in Ghaziabad. The presence of fragments of the virus in urban lakes has been attributed to the release of untreated sewage discharge from the surrounding population. While these genetic materials cannot further spread the disease, they can be used as a surveillance tool to understand and predict the onset and spread of infection in the community.

Similar wastewater based epidemiology (WBE) studies are being carried out in many countries to track the virus, CCMB Director Dr Rakesh Mishra said. The material present in the lake water is only genetic fragments of the coronavirus and not the actual virus, and therefore there is no possibility of waterborne or fecal–oral transmission, he said. "Wherever





there's human activity and sewage release, viral components will be present. This means the presence of the virus can be monitored, and based on its increase and decrease, we can predict future waves," he said, adding that efforts are on to set up similar surveillance across Indian cities, to track other pathogenic viruses as well.

Apart from the three urban lakes mentioned earlier, a peri-urban lake (Edulabad Lake near Ghatkesar) and a rural lake (Pothuraju lake) were also monitored in the study. However, the novel coronavirus genes were not detected in these lakes, but only in the urban lakes "having direct functional attributes from domestic activity in the community," the study said. This means that urban waste water bodies can act as a proxy for surveillance studies, and help in understanding the spread of the virus in the community residing in the lake's catchment area, the study concluded.



## Published in:

#### <u>Thenewsminute</u>





## **National Technology Day celebrated, awards presented**





CSIR-IICT celebrated 'National Technology Day' on a virtual platform by conferring the AV Rama Rao Technology Award 2021 on Prof. Sandeep Verma, Secretary, Science and Engineering Research Board, Department of Science and Technology.

Dr. A.V. Rama Rao Young Scientist Awards, which are also instituted by CSIR-IICT and sponsored by AVRA Laboratories, were conferred on eminent researchers below 40 years of age and this year, the awards were presented to Dr. Chandra M. R. Volla, Associate Professor, Department of Chemistry, IIT Mumbai, and Dr. P. Anbarasan, Associate Professor, Department of Chemistry, IIT Chennai.

The Technology award carries a memento and a cash prize, while the young scientist awards carry a citation, memento and a cash prize.

CSIR-IICT director S. Chandrasekhar said the awards have been instituted in honour of Dr. AV Rama Rao, former director of CSIR-IICT, and founding chairman and managing director, AVRA Laboratories Pvt. Ltd.

Prof. Sandeep Verma delivered the award lecture in which he discussed about his research work on the technological processes for identifying nitric oxide, a critical input for various drugs/chemical formulations, dopamine release and estimation, stem cells biomechanisms, and peptide design and monopoly evaluation, a press release said.

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Thehindu





### **CEO & MD of Tata Steel lauds role of Indian Institute of Metals**





Kolkata, May 13 (UNI) T V Narendran, CEO & Managing Director of Tata Steel, has stressed upon the unique role played by the Indian Institute of Metals (IIM) in the development of metals and metallurgical sciences in the country.

Speaking at a virtual function held to commemorate the platinum jubilee of IIM, Mr. Narendran underscored the significance of IIM as a common platform for engineers, scientists, metallurgists, academia and researchers and stressed upon how the premier professional organization has evolved over time to contribute to the world of metallurgical sciences.

The virtual program was attended by almost 350 attendees representing various industries, institutes and research organizations from across the country. IIM was established in 1946 and presently has 56 chapters and about 10,000 members across the country representing industry, academia, R&D establishments and institutes from private and public sectors. IIM recognizes and rewards eminent scientists, engineers and students for their significant contribution to the domains of metals, materials and metallurgical sciences. The institute has completed 75 years in the service of the nation in February 2021.

To commemorate its platinum jubilee celebration, IIM has initiated a series of lectures every month under the `IIM@75-Monthly Webinar Series' (MWS). As a part of this MWS programme, few selected chapters will organise webinars. The programme, which has taken off in January 2021, will continue till February 2022.

The lecture held at Jamshedpur on May 10 was delivered by Dr. Indranil Chattoraj, Director of CSIR-NML, Jamshedpur.





#### He spoke on the topic 'Corrosion Failures and Prevention Strategies'.

In his address, Dr Chattoraj said failure analysis was an engineering approach to determine why and how equipment and components fail. He dwelt at length on various factors influencing the corrosive degradation of components. He concluded his lecture by discussing various prevention strategies.







## Virus variant in India can infect those vaccinated, but unlikely to cause severe Covid: Study





New Delhi: The Covid-19 variant known as B.1.617, first identified in India, may evade antibodies induced by the Pfizer mRNA and Covishield vaccines, preliminary research shared by the Indian SARS-CoV-2 Genomic Consortia (INSACOG) shows.

The researchers, however, add that while the B.1.617 does enough to cause breakthrough infections (infections in fully vaccinated people), it does not lead to severe or life-threatening versions of the disease. The World Health Organization (WHO) had Tuesday classified B.1.617 as a variant of concern at the global level.

In the study that is yet to be peer-reviewed, researchers from the INSACOG, along with the Covid-19 Genomics UK (COG-UK) Consortium, studied the effect of blood samples from vaccinated individuals against a pseudotyped virus system with HIV-1 particles that enveloped the SARS-CoV-2 spike.

Pseudotyped viruses are viral particles formed with a structural and enzymatic core of one virus and the envelope of another. These particles are unable to replicate, and therefore allow scientists to study dangerous viruses in a lower-risk setting.

The team found that the mutation P681R, found in all the sublineages of B.1.617, increases the formation syncytium (multiple nuclei). Previous research has shown that the spike protein of SARS-CoV-2 induces syncytia.

A cell normally contains only one nucleus, which acts as its information centre. Viral proteins sometimes cause an infected cell to fuse with neighbouring cells, leading to the formation of enlarged cells with more that one nuclei. These multi-nucleated cells are called syncytia.





In simpler terms, B.1.617.1 — one of at least three sub lineages of the variant found in India (the other two being B.1.617.2 and B.1.617.3) — potentially contributes to faster spread of Covid-19 and quicker infection growth rates. Anurag Agrawal, one of the authors of the study, however, told ThePrint that clinical data still needs to be looked at to determine what

#### the increased syncytia formation means for the disease in real world settings.

"For now the data supports at least one molecular mechanism of increased syncytia formation," said Agrawal, who heads the CSIR Institute of Genomics and Integrative Biology (CSIR-IGIB)

**'Healthcare workers got infected despite vaccine'** The researchers also found at least 33 healthcare workers in a Delhi hospital (not named) who got infected with Covid-19 despite being fully vaccinated with the Covishield vaccine.

Most of these breakthrough infections were dominated by B.1.617.1, although the research notes that this may be because this was the most prevalent variant at the time of the study (during March and April). But importantly, none of these infections turned severe.

Agrawal said this could be because while B.1.617 does cause breakthrough infections, vaccines do not completely lose their efficacy against it. He added that he believes these findings can be generalised to Covaxin as well, although the data for Covaxin is lacking since only a small proportion of people have received this vaccine.

"In my opinion, enough number of breakthrough infections have taken place at AIIMS Delhi and LNJP (Lok Nayak Jai Prakash Narayan Hospital), both of which primarily used Covaxin," he said. "However, even these have not seen a huge number of severe cases among those infected after vaccination."

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#### CSIR-NBRI,IITR

## राष्ट्रीय प्रौद्योगिकी दिवस के उपलक्ष्य



## में स्वदेशी कोविड रोधी औषधि के विकास पर वेबिनार का आयोजन हुआ भारत कनेक्ट संवाददाता

गुणन को कम करने की क्षमता है। डॉ. भट्ट ने कहा कि इस औषधि से वायरस सीएसआईआर-लखनऊ। आस पास की अन्य कोशिकाओं को एनबीआरआई एवं सीएसआईआर-फिर से संक्रमित करने की क्षमता भी खो आईआईटीआर, लखनऊ द्वारा सयुक्त रूप से आज राष्ट्रीय प्रौद्योगिकी दिवस देता है, जिसका मतलब है कि वायरस नई कोशिकाओं में प्रवेश नहीं कर पाता पर एक वेबिनार का आयोजन किया है, उन्होने दवा के वाईरस पर असर पर गया, वेबिनार में इंस्टिट्यूट ऑफ चर्चा करते हुए बताया कि वाईरस न्युक्लियर मेडिसिन एंड अलाइड साइंस, डिफेन्स रिसर्च डेवलपमेंट जनित बीमारी की तीन प्रमुख अवस्थाएँ होती हैंय वाइरस का गुणन, उच्च आगेर्नाइजेशन, मिनिस्ट्री ऑफ डिफेन्स, गवर्नमेंट ऑफ इंडिया के प्रतिरोधक प्रतिक्रिया एवं श्वसन तंत्र का नष्ट होना। उन्होने बताया कि 2 डीजी वरिष्ठ वैज्ञनिक डॉ. अनंत नारायण भट्ट दवा इनमें से पहली दो अवस्थाओं के मुख्य वक्ता के रूप में मौजूद थे, डॉ. भट्ट उस टीम के मुख्य सदस्य है जिसने दौरान ही वाईरस पर प्रभाव डाल कर कोरोना वायरस के विरुद्ध एक कारगर उसे बेअसर करने में कारगर है। उन्होने स्वदेशी दवा '2-डी जीझ की हाल ही में बताया कि यह दवा वाइरसों के गुणन खोज की हैं, डॉ अनंत नारायण भट्ट ने के द्वारा नए वाइरसों के जन्म के समय उनके वाईरस के बाह्य प्रोटीन आवरण स्वदेशी कोविड रोधी औषधि का की संरचना को प्रभावित करती है विकास विषय पर अपने सम्बोधन में डीआरडीओ द्वारा विकसित कोविड जिसके कारण यह नए उत्पन्न हुए रोधी औषधि 2-डीजी के विषय में चर्चा वाईरस आस पास की नई कोशिकाओं को संक्रमित करने में असमर्थ हो जाते की। डॉ. भट्ट ने बताया कि इस स्वदेशी दवा में शरीर में वायरल संक्रमण के हैं।

#### Published in:

Bharat Connect, Dishera Times, EK Sandesh, In Dino, Jan Madhyam, Kannauj Post, Lucknow ka abhiman Nispaksh Sahara Times, Shaan Times, State News Times, Swadesh Prakash, Vishwa Vijeta Times **Produced by Science Communication and Dissemination Directorate, (SCDD), CSIR, Anusandhan Bhawan, New Delhi** 



#### CSIR-NBRI,IITR

12<sup>th</sup> May, 2021

# 'Indigenous 2-DG drug can reduce viral infection, subsequent multiplication'

The National Botanical Research Institute (NBRI) and Indian Institute of Toxicology Research (HTR) jointly organised a webinar on the occasion of National Technology Day on Tuesday. Dr Anant Narayan Bhatt, senior scientist at Institute of Nuclear Medicine and Allied Sciences (INMAS), Defence Research Development Organisation (DRDO), was the guest speaker. He is one of the lead members of the team which discovered 2-DG (2-Di-oxy glucose) drug against COVID-19. Dr Bhatt, in his address on 'Development of indigenous anti-Covid medicine, said that this wonder indigenous drug had the capability

"This wonder indigenous drug had the capability to reduce the viral infection and its subsequent multiplication in the body due to which the virus lost the ability to re-infect the other host cells"

due to the anti-cancer activity of this drug, it was possible to use it in the treatment of cancer in future. "This drug got clinical trial approval from Drugs Controller General of India for further trials on humans," he said, adding that soon 2-DG may prove to be the solution for COVID-19. Earlier, welcoming the participants, Prof SK Barik said that different scientific fraternities of the country had joined hands in the fight against COVID-19 pandemic in various ways.

and its subsequent multiplication in the body due to which the virus lost the ability to reinfect the other host cells.

Throwing light on how the virus infects the humans, he said that there were three main stages of virus-borne diseases; multiplication of virus, high resistance response and destruction of respiratory system. He said the 2-DG drug was very effective during the first two stages of the infection by neutralisthat the 2-DG drug affected the structure of the new virus' outer layer envelope proteins in multiplication of new viruses, making it unable to infect the surrounding new cells. He also disclosed that

#### to reduce the viral infection ing the virus. He explained

#### Published in:

#### Pioneer,





#### CSIR-IHBT



सैनिटाइजर और चाय आधारित दी। उन्होंने कहा कि संस्थान ने इम्यूनिटी बढ़ाने वाले उत्पादों को तकनीक हस्तांतरण के लिए 117 विकसित किया है। संस्थान ने एमओय समझौतों पर हस्ताक्षर किए हैं और एमएसएमई के माध्यम से 'विटामिन डी से समृद्ध शिटाके पारंपरिक उद्योग के उत्थान के लिए मशरूम के लिए भी तकनीक फंड स्कीम के तहत प्रौद्योगिकी विकसित की है।

#### **Published in:**

Amar Ujala, Dainik Jagran, Punjab Kesari, <u>Tribuneindia</u>





#### CSIR-IHBT







भी बढोतरी करने पर बल देगा। रहा है। कृपोषण का मुकाबला संस्थान ने तकनीक हस्तांतरण के लिए 117 एमओयू समझौतों पर करने के लिए लौह, प्रोटीन और संस्थान ने लाहौल और स्पीति में हस्ताक्षर और एमएसएमई के फाइबर युक्त खाद्य पदार्थों के हींग तथा चंबा, कुल्लू और मंडी माध्यम से 'पारंपरिक उद्योग के निर्माण के अलावा, संस्थान ने जिलों में केसर की खेती की भी उत्थान के लिए फंड' स्कीम के कोविड-19 के प्रबंधन के लिए एक महत्त्वपूर्ण पहल की है। तहत प्रौद्योगिकी प्रसार के लिए वैज्ञानिक रूप से मान्य हैंड संस्थान ने ठंडे पहाड़ी क्षेत्रों के लिए सात क्लस्टर विकसित किंए हैं। सेनेटाइजर और चाय आधारित नाइट सॉयल और जैविक अपशिष्ट सीएसआईआर-आईएचबीटी में इम्युनिटी बढ़ाने वाले उत्पादों को क्षरण के लिए प्रौद्योगिकी विकसित वर्चुअल मोड में राष्ट्रीय प्रौद्योगिकी विकसित किया है। संस्थान ने की है। मुख्य अतिथि प्रो. कुलदीप दिवस के आयोजन के दौरान विटामिन-डी से समृद्ध शीटा के सिंह, निदेशक, आईसीएआर-मशरूम के लिए भी तकनीक एनबीपीजीआर, ने भारत में खाद्य संस्थान के निदेशक डा. संजय कुमार ने कहा कि इन क्लस्टरों में विकसित की है। उन्होंने कहा कि और पोषण सुरक्षा सुनिश्चित करने डेढ़ हजार से अधिक उद्यमियों को संस्थान फूलों की खेती के क्षेत्र में के लिए कृषि-विविधता का शिटाके मशरूम उत्पादन, कंपोस्ट भी अग्रणी भूमिका निभा रहा है। संरक्षण' पर राष्ट्रीय प्रौद्योगिकी खाद निर्माण और फूलों की खेती इस क्षेत्र में संस्थान 'सीएसआईआर दिवस व्याख्यान दिया।

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Divya Himachal,





## **CSIR-CMERI** celebrates National Technology Day by interacting with MSMEs





CSIR-CMERI celebrated the National Technology Day- 2021 on 11th May 2021 by interacting with MSME Representatives in a Webinar organised by MSME-DI, Thrissur entitled 'Oxygen Enrichment Technology & Latest Credit Facilities from SIDBI to MSMEs' and by handing over the Technology of Oxygen Enrichment Unit to two MSMEs i.e. M/s Mech Air Industries, Vadodara, Gujarat and M/s Auto Malleable, Jaipur, Rajasthan.

Prof. Harish Hirani, Director, CSIR-CMERI, while delivering the Chief Speaker Address in the interactive Webinar, shared that CSIR-CMERI has recently organised a series of virtual interactive sessions with various state MSMEs, to maximize the infusion of the Technological Advancements in the products/process and capacitate the MSMEs to lead the economic and social development of the country. Equipping the MSMEs with Technology Know-how will facilitate increasing the Quality and Productivity and thereby making them Globally Competitive. MSMEs are the key drivers of Economic Growth Engine, empowering and enabling them through carefully-researched technologies will also help to generate employment opportunities. CSIR-CMERI in the last five years has transferred 125 different Technologies to the MSMEs for empowering the sector at large and set up specialised Manufacturing Hubs to improve the technical capabilities of the National Industry Base and Human Resource Profile. Numerous Skill Development and Awareness Generation programs are being continuously organised by CSIR-CMERI to empower the MSMEs and the humanity at large with CSIR-CMERI Scientific Know-How.

The Oxygen Enrichment Unit developed by CSIR-CMERI is a Decentralised Oxygen Generation solution. The CSIR-CMERI OEU is an in-situ solution, which can assist the Oxygen Generation Capacity of the Nation as a whole for various Medical Needs. This technology has already been delivered to nine (9) MSME partners, thereby expanding the





Oxygen Generation Base of the Nation and aiming to transform India as a manufacturing powerhouse of OEU. An affordable 50 LPM unit may also be set up for Rural Health facilities with slight modifications. A strengthened MSME Network in India empowered by Technology can help India tackle any unforeseen crisis in the future.

Shri Sandip Shah, CEO, M/s Mech Air Industries, Gujarat, expressed his confidence in the CSIR-CMERI developed Oxygen Enrichment Unit and shared his interest in the other CSIR-CMERI Technologies, to ensure that the MSMEs play a role in bringing forth technologies to the society. He shared that CSIR-CMERI technologies will play a significant role in the 'Make in India' ambitions of the Nation. The first units of the Oxygen Enrichment Technology will be rolled out within 15-20 days.

Shri Mahendra Mishra, M/s Auto Malleable, Rajasthan, stated that the major force behind the CSIR-CMERI technology was to reach out to society and help fellow citizens. Shri Mishra shared that currently 50 Oxygen Concentrators are being rented out to patients at a meagre rent of Rs 100/day and a Caution Deposit, as a Social Service gesture. In response to the rental proposal of Oxygen Concentrators, Prof. Harish Hirani urged for kind usage of N95 Face Masks along with Nasal Cannula attachment of Oxygen Concentrators. This will help reduce the spread/transmission of the Viral Load in the nearby radius, especially in Isolation Wards/Quarantine Spaces. Further, Prof. Hirani also requested to appropriately dispose-off Nasal Canula after usage of the same by an individual.

Shri GS Prakash, Jt. Director, MSME-DI, Thrissur, stated that Oxygen Capacity today is inadequate as per the current demands. More than Oxygen Generation, the major issue faced is Oxygen Transportation and Storage Capacities. CSIR-CMERI has come up with a very timely technology to address the requirements through Oxygen Enrichment Technology. Since the Industries have had to surrender their Oxygen, prolonged denial of this essential component will pose a huge challenge to the MSMEs. The MSME- Technology Centre and the MSME parks can also be roped in for providing adequate Manufacturing Infrastructure for the MSMEs to kick-start manufacturing of this very crucial technology.





Shri Kiran Kumar R, a representative of the Kozhikode Industry Forum, shared that in a short span of time Kerala slumped from being an Oxygen Surplus State to an Oxygen Deficient. Owing to the surrendering of Industrial Oxygen, the Industry Clusters need to collectively come together to create Captive Oxygen Production Units, to keep the Industries moving in times of this Health Emergency. For this purpose, Prof. Harish Hirani was requested to kindly provide assistance in terms of Technological Requisites for creating Captive Oxygen Generation Plants. Prof. Hirani shared that CSIR-CMERI can either provide joint assistance in the form of Technical Services, whereby the Industries need to physically set up facilities based upon CSIR-CMERI's Technology Inputs.

Shri Joseph J Tharun, Manager, SIDBI, Kochi, shared the SHWAS and AROG Financial Assistance Schemes with the MSME Participants. These schemes will provide Capital Assistance up to Rs 2 Crores for Manufacturing Entities dealing with Oxygen-related

products and other Counter-COVID products such as PPEs, Oximeters, Ventilators, Permitted Drugs etc.

#### **Published in:**

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