CSIR IN MEDIA

CSIR

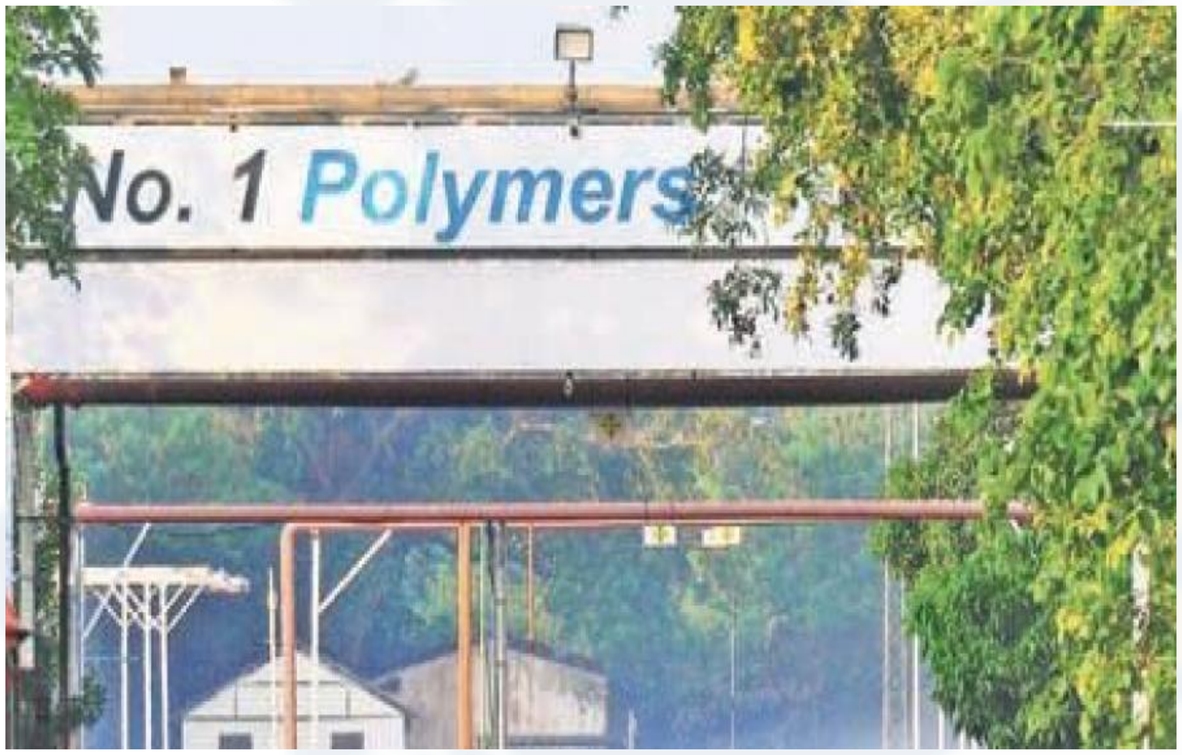
NEWS BULLETIN
16 TO 20 JUNE 2020

Produced by Science Communication and Dissemination Directorate, (SCDD), CSIR, Anusandhan Bhawan, New Delhi

HPC to hold its final meet today

CSIR –NEERI

20 June, 2020



Referring to the boating control room, he said the rooms were set up by the State government after the boat tragedy in Godavari river.

VISAKHAPATNAM: The High Power Committee (HPC), constituted by the State government to probe reasons for styrene vapour leak from the LG Polymers plant at RR Venkatapuram on May 7, will hold its last meeting here on Saturday before submitting its report. Speaking to mediapersons on Friday after inauguration of tourism boating control room at Rushikonda beach, District Collector V Vinay Chand said further studies are being conducted on water resources in the affected areas of styrene gas leak. Referring to the boating control room, he said the rooms were set up by the State government after the boat tragedy in Godavari river. About 30,000 to 40,000 tourists visit Rushikonda beach for boating every year.

Meghadrigedda water safe: NEERI

The National Environmental Engineering Research Institute (NEERI) Committee has recommended that Meghadrigedda reservoir water can be used for drinking purpose after filtration and disinfection, District Collector V Vinay Chand said in a statement here on Friday.

Published in: New Indian Express

Civic officials to test water from Meghadrigedda reservoir

CSIR –NEERI

20 June, 2020

If required, supply will be resumed Monday, says GVMC Commissioner

Post styrene monomer vapour leak from LG Polymers plant in RR Venkatapuram, the Meghadrigedda reservoir was closed for water supply and fishing. The reservoir is located in close proximity to the chemical plant.

There was apprehension that styrene monomer vapour, which is said to be heavy, might have settled down on the surface water of the reservoir. Based on caution from the National Green Tribunal (NGT) and the National Environmental Engineering Research Institute (NEERI), the GVMC and the district administration had closed the reservoir for all activity.

Now after about 50 days after the incident, the NEERI, which had collected samples from the reservoir, has given a green signal to draw water from the reservoir, after conducting a number of tests to ascertain the toxicity of the water.

Speaking to *The Hindu*, GVMC Commissioner G. Srijana said that even though the NEERI has given its clearance, civic officials would conduct another round of test and if required supply would be resumed from Monday. The 1.1 tmcft capacity reservoir is a storage reservoir for the city and water is drawn from it only when required. “Right now we may not draw water from the reservoir, as we have seen through the summer and there are other regular sources of supply. But the water from the reservoir is absolutely safe for consumption after the normal filtration process,” she said.

Speaking to *The Hindu*, environmentalist Bolisetti Satyanarayana said that styrene monomer does not dissolve in water. But after the incident, it settled down on the surface of the water. But immediately there was heavy rains for a couple of days, and the settled styrene was washed away. It is happy to hear that the NEERI has given a green signal, he said.

Speaking about the filtration process of the water at the reservoir, GVMC Superintending Engineer (Water) K. Venugopal said that the water when supplied would go through a proper filtration process. After the basic filtration, the water is subjected to alum and chlorine treatment, before the supply, and it is absolutely safe.

Published in: The Hindu

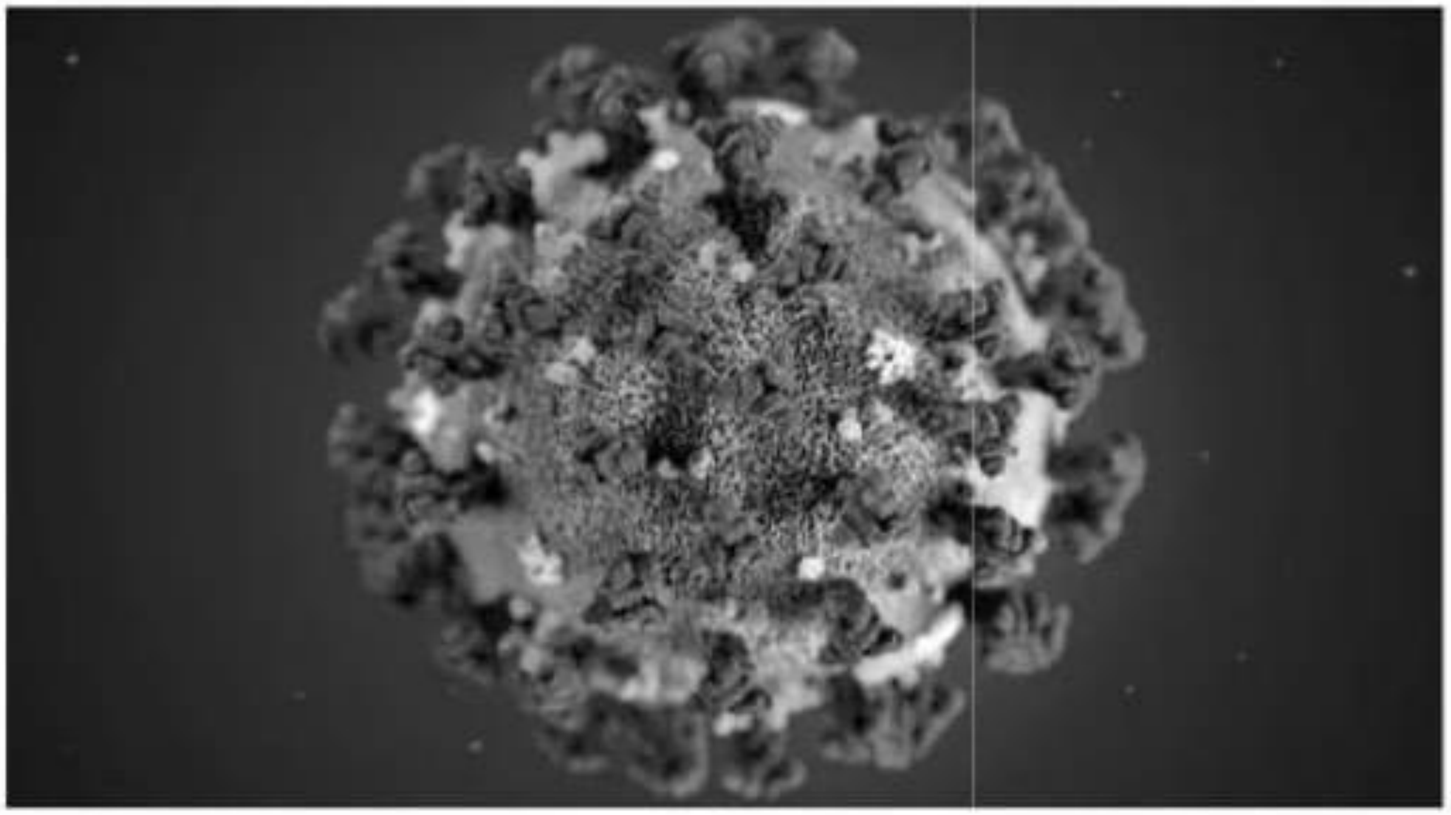
CSIR-IICB

20 June, 2020

Scientists: Virus may infect respiratory centre of brain

Coronavirus could enter brain through nose and reach brain's olfactory bulb

PRESS TRUST OF INDIA
NEW DELHI, 19 JUNE



A team of researchers at the CSIR, Indian Institute of Chemical Biology (IICB), Kolkata, has explored the neuro-invasive potential of Covid-19 and suggested the virus may infect the respiratory centre of the brain, a statement said.

The researchers suggest attention should be focused on the respiratory centre of the central nervous system to learn about mortality due to coronavirus.

The paper published in *ACS Chemical Neuroscience* and supported by Science & Engineering Research Board (SERB), a statutory body of the Department of Science & Technology (DST), implies that coronavirus could enter the human brain through the nose and reach the olfactory bulb of the brain.

From there, the virus might infect PreBotzinger complex (PBC), the primary centre of the brain that controls the respiratory rhythm generation. This explains that collapse of the respiratory centre in the brain may be responsible for breakdown of Covid patients.

The team of researchers comprising Dr Prem Tripathi, Dr Upasana Ray, Dr Amit Srivastava and Dr Sonu Gandhi suggested that while the lung is one of the most infected organs, several other organs, including the brain, are also affected by Covid-19.

This is the first report that highlights SARS-CoV-2 may target the PBC of the brain stem that controls respiration and causes respiratory collapse of patients.

The scientists have suggested that cerebrospinal fluid of Covid-19 patients and postmortem of the brain of the deceased should be assessed to better understand the route of SARS-CoV-2 entry and its spread to the respiratory centre of the brain.

The PreBotzinger complex functions as the primary respiratory oscillator and it has been proposed as a centre of respiration. It has been earlier shown that disruption of PBC causes lethality due to respiratory failure, suggesting its central role in respiratory rhythm generation.

It is possible that SARS-CoV-2 may shut down respiratory centre, and in turn breathing by infecting and destroying the PBC of the brain stem, it said, adding this hypothesis needs to be validated for SARS-CoV-2.

Another recent study from a group of scientists at King's College London, UK, highlighting that loss of smell was one of main symptoms of Covid-19 patients, hinting at the involvement of the same route through which coronavirus may enter the brain.

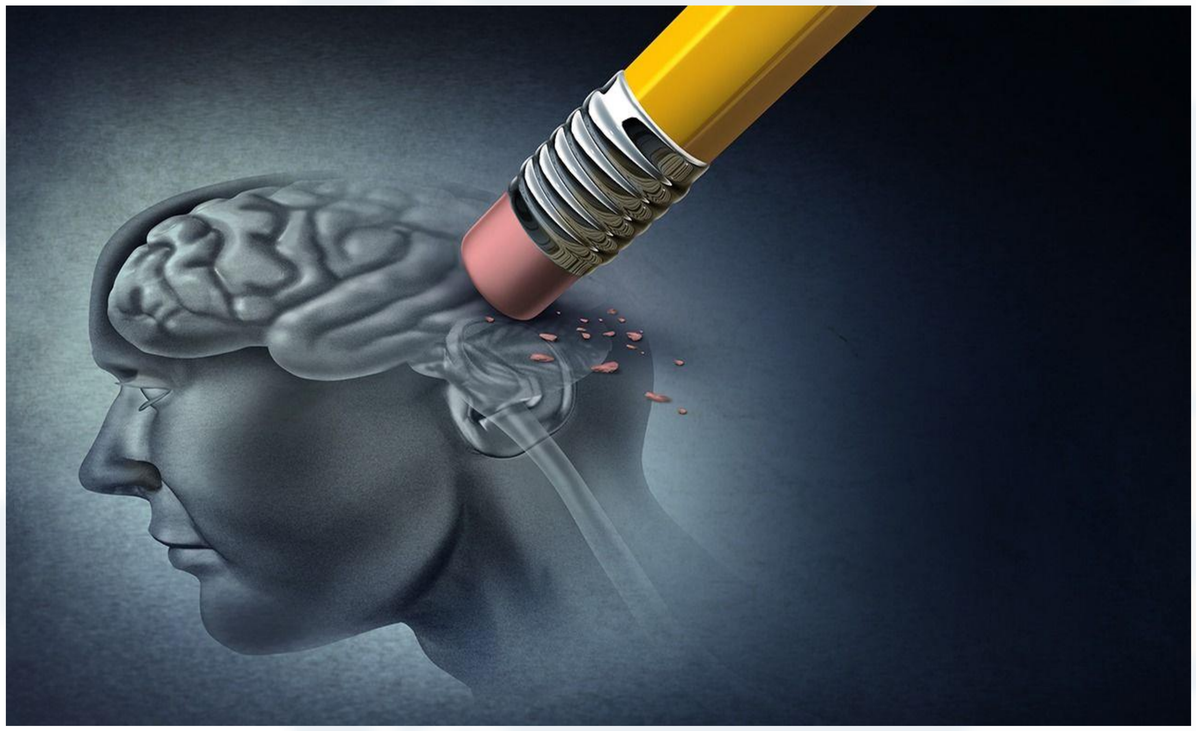
The study highlights that it is important to not only screen the Covid-19 patients for neurological symptoms but also further segregate when the symptom appears.

Published in: The Statesman

IICB explores neuro-invasive potential of SARS-CoV-2

CSIR –IICB

19 June, 2020



The scientists have suggested that cerebrospinal fluid of COVID-19 patients and postmortem brain of deceased patients should be assessed

The team of researchers at CSIR-Indian Institute of Chemical Biology (IICB), Kolkata has explored the neuro-invasive potential of SARS-CoV-2 and suggested that the virus may infect respiratory centre of the brain and attention should be focused on the respiratory centre of the central nervous system to search for mortality due to COVID 19.

The paper published in ACS Chemical Neuroscience and supported by Science & Engineering Research Board (SERB), a Statutory Body of the Department of Science & Technology (DST), implies that SARS-CoV-2 virus might enter the human brain through the nose and reaches the olfactory bulb of the brain.

From there, SARS-CoV-2 virus might infect PreBötzinger complex (PBC), the primary center of the brain that controls the respiratory rhythm generation. This explains that collapse of the respiratory center in the brain may be responsible for breakdown of COVID-19 patients.

Team of researchers Dr. Prem Tripathi, Dr. Upasana Ray, Dr. Amit Srivastava and Dr. Sonu Gandhi discussed that although, lung is one of the most infected organs, several other organs, including the brain, are also affected.

This is the first report that highlights the SARS-CoV-2 may target the PBC of the brainstem that controls respiration and causes respiratory collapse of COVID-19 patients.

The scientists have suggested that cerebrospinal fluid of COVID-19 patients and postmortem brain of deceased patients should be assessed to better understand the route of SARS-CoV-2 entry and its spread to respiratory center of brain.

Published in: Biospectrum India

CSIR receives over 16,000 applications for Summer Research Training Programme

CSIR –NEIST 19 June, 2020

Dr Sastry was speaking on the occasion of the curtain raiser of CSIR-SRTP (2020) hosted by CSIR-NEIST, the coordinating institute of the programme.

The Council of Scientific and Industrial Research (CSIR) has received an overwhelming response by way of over 16,000 applications from all across the country for its Summer Research Training Programme (CSIR-SRTP). It is informed by Dr G. Narahari Sastry, Director, CSIR- North East Institute of Science and Technology (NEIST), based in Jorhat, Assam.

Dr Sastry was speaking on the occasion of the curtain raiser of CSIR-SRTP (2020) hosted by CSIR-NEIST, the coordinating institute of the programme. The event was inaugurated online by Dr Shekhar C. Mande, Director General (DG) of CSIR, and Secretary, Department of Scientific and Industrial Research (DSIR), Government of India.

"The concept of this online Summer Research Training Programme started budding with the lockdown triggered by the COVID-19 pandemic that sent the academic scenario throughout the country into the doldrums. To dissolve the lull created by the pandemic in the academics of the nation and to uplift the constructive spirit among the students' fraternity of the country, Dr Shekhar C. Mande has given the mandate to CSIR-NEIST to conceptualize this programme, which is happening for the first time in the academic history of India", said Dr G. Narahari Sastry.

The last date of receiving the applications was extended from 5 June to 8 June 2020. Dr Sastry lauded the dedicated team of CSIR-NEIST for accomplishing the Herculean task of processing the plethora of applications on war-footing in a span of two days and then having the list of shortlisted candidates declared by 10 June 2020.

Dr Sastry concluded by saying that the best of the innovation in science and technology have come about during the times of war, pandemic, and natural disasters. Therefore, this pandemic has posed a challenge and given an opportunity to science and technology to give its best.

Published in: Devdiscourse

CSIR-NEERI

19 June, 2020

श्री डी सेवा के लोकार्पण अवसर पर आयुक्त तुकाराम मुंढे, राकेश कुमार, राम जोशी व अन्य.

श्री डी इमेज से मिलेगी कोविड की जानकारी

मनपा आयुक्त के हाथों सेवा का लोकार्पण

नागरिकों को कोविड-19 के प्रति सतर्क और सुरक्षित रखने के ध्येय से नागपुर मनपा ने राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान (नीरी) और इंडियन इंस्टीट्यूट ऑफ पेट्रोलियम देहरादून के सहयोग से थ्री डी डिजिटल सेवा शुरू की है. इसमें कोविड के मरीजों की जानकारी थ्री डी स्टाइल में मनपा की अधिकृत वेबसाइट पर उपलब्ध कराई गई है.

गूगल अर्थ एप्लीकेशन का आधार लेकर यह तैयार हुआ है. उसी प्रकार नागपुर स्मार्ट सिटी प्रोजेक्ट की तरफ से कोविड-19 की जानकारी देने के लिए डैशबोर्ड तैयार किया गया है. मनपा आयुक्त तुकाराम मुंढे के हाथों सेवा का लोकार्पण हुआ. इस दौरान नीरी के निदेशक डॉ. राकेश कुमार, मनपा के अपर आयुक्त राम जोशी, नीरी के मुंबई जोन के प्रमुख व वरिष्ठ मुख्य वैज्ञानिक डॉ. रितेश विजय, प्रकल्प सहायक कौस्तुभ जिचकार व स्मार्ट सिटी के महाप्रबंधक शील घुले उपस्थित थे. आई.आई.पी. के सुनील पाठक का सहयोग मिला.

आयुक्त ने कहा कि नागरिकों को सहजता से कोविड मरीजों की जानकारी मिले, इसके लिए यह सेवा शुरू की गई है. नीरी के सहयोग से शाला, उद्यान, कार्यालय की जानकारी भी नागरिकों को इसी प्रकार उपलब्ध कराई जाएगी.

डॉ. राकेश कुमार ने कहा कि नागरिकों की मदद के लिए प्रशासन की पहल सराहनीय है. उसका उपयोग नागरिक करें.

Published in: Lokmat Chamachar

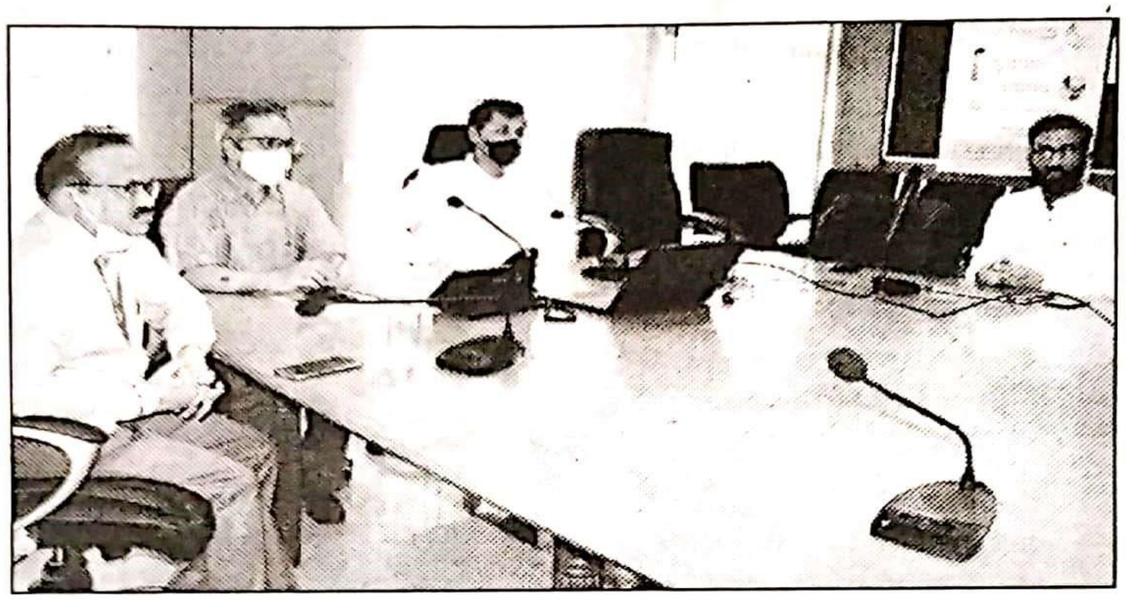
CSIR-NEERI

19 June, 2020

थ्री डी इमेजवर कोविडची अद्ययावत माहिती

नीरी व स्मार्ट सिटीचे सहकार्य

मनपा आयुक्तांच्या हस्ते लोकार्पण



बैठकीत तुकाराम मुंढे, डॉ. राकेश कुमार, राम जोशी.

कोविडची संपूर्ण माहिती एका क्लिकवर उपलब्ध व्हावी, त्याचा उपयोग करून नागरिकांनी कोरोनापासून सतर्क राहावे या उद्देशातून नागपूर महानगरपालिकेने प्रारंभापासूनच तंत्रज्ञानाचा वापर केला. आता एक पाऊल पुढे टाकत कौन्सिल ऑफ सायंटिफिक ॲण्ड इंडस्ट्रीयल रीसर्च अंतर्गत असलेल्या नागपूर येथील नॅशनल एन्व्हायर्नमेंटल इंजिनीअरिंग रीसर्च इंस्टिट्यूट अर्थात नीरी आणि इंडियन इन्स्टिट्यूट ऑफ पेट्रोलियम डेहरादूनच्या सहकार्याने नागपूर महानगरपालिकेने गूगल अर्थ अप्लिकेशनचा वापर करीत एक ३-डी डिजिटल सर्व्हिस तयार केली आहे. तसेच नागपूर स्मार्ट सिटीने एक कोविड - १९ ची माहिती देणारा डॅशबोर्ड तयार केला आहे. याची लिंक मनपाच्या वेबसाईटवर उपलब्ध असून या लिंकच्या आधारे नागपुरातील कोविड-१९ ची अद्ययावत माहिती ३-डी मध्ये उपलब्ध होणार आहे. ३-डी वर कोविडसंबंधी अद्ययावत माहिती देणारी नागपूर महानगरपालिका देशातली बहुधा पहिली ठरली आहे. नागपूर महापालिकेने नीरी, आईआईपी आणि स्मार्ट सिटी सोबत घेतलेली ही मोठी भरारी आहे.

या सर्व्हिसचे लोकार्पण बुधवारी मनपा आयुक्त तुकाराम मुंढे यांच्या हस्ते झाले. यावेळी नीरीचे संचालक डॉ. राकेश कुमार, मनपाचे अतिरिक्त आयुक्त राम जोशी, नीरीचे मुंबई झोनल प्रमुख आणि वरिष्ठ मुख्य वैज्ञानिक डॉ. रितेश विजय, प्रकल्प सहायक कौस्तुभ जिचकार व स्मार्ट सिटीचे महाव्यवस्थापक शील घुले उपस्थित होते. आयआयपीचे सुनील पाठक यांचेही यात सहकार्य लाभले. संगणकाची बटन दाबून तुकाराम मुंढे यांनी कोविडसंदर्भातील अद्ययावत माहितीसाठी तयार करण्यात आलेल्या ३-डी डिजिटल सर्व्हिस व डॅशबोर्डचे लोकार्पण केले. याप्रसंगी बोलताना आयुक्त तुकाराम मुंढे म्हणाले, तंत्रज्ञानाचा अधिकाधिक वापर करून कोविड संदर्भातील माहिती नागरिकांना सहज उपलब्ध व्हावी, यासाठी मनपा प्रयत्नरत आहे. गूगल अर्थचा वापर करून आता एका क्लिकवर कोविडची माहिती ३-डी इमेजेसमध्ये उपलब्ध करून देण्यात आली आहे.

नीरीचे संचालक डॉ. राकेश कुमार म्हणाले, अशा माहितीमुळे नागरिकांच्या ज्ञानात भर पडते. नागरिकांनी प्रशासनाच्या या प्रयत्नाचा वापर करावा.

काय मिळेल माहिती ?

या प्रोग्रामच्या माध्यमातून नागपुरात कोविडचे आजचे रुग्ण किती, ॲक्टिव्ह केसेस किती, प्रतिबंधित क्षेत्र कोणते, प्रतिबंधित क्षेत्राचे इपिसेंटर कोणते, जवळचे कोविड हॉस्पिटल कोणते यासंदर्भातील सर्व माहितीचा 'रिलिस्टीक व्ह्यू' येथे दिसेल. ३-डी इमेज हा या सर्व्हिसमधील महत्त्वाचा भाग असून यूजर्सला सहज समजेल, अशा पद्धतीने हे तयार करण्यात आले आहे. नागपूरकरांनी याचा अधिकाधिक उपयोग करून कोरोनाचे संक्रमण रोखण्यात मदत करावी, हाच या मागील उद्देश आहे. ही माहिती नागपूर महानगरपालिका व स्मार्ट सिटीच्या फेसबुक आणि ट्विटरवर पण उपलब्ध राहील.

(तभा वृत्तसेवा)

Scanned with CamScanner

Published in: Tarun Bharat

Another Earthquake! Low intensity tremor hits Rohtak near Delhi; check details

CSIR –NGRI 18 June, 2020

The magnitude of the earthquake has been recorded 2.1 on the Richter scale and it took place at 4:18 am.

Earthquake in Haryana: A low intensity earthquake has today hit some parts of Haryana including Rohtak wherein some mild tremors were felt early morning. According to information provided by the National Centre for Seismology, the magnitude of the earthquake has been recorded 2.1 on the Richter scale and it took place at 4:18 am. The epicenter of the earthquake, on the other hand, has been found to be 15 km southeast of Haryana's district Rohtak with a depth of 5 km. No damage has yet been reported.

With the recent tremor felt in Haryana, it can be noted that the occurrence of earthquakes (low intensity) has been quite frequent in India over the last two-three months. Yesterday, a low intensity earthquake hit Maharashtra as well. The readings of Richter scale noted an intensity of 2.5 and happened at 11:51 am, approximately 103 km north of Mumbai. Not two days ago, Jammu and Kashmir too felt strong tremors and the Seismology department noted three earthquakes in the state within 24 hours. The earthquake with an intensity of 5.8 occurred in Tajikistan due to which tremors were felt in Jammu and Kashmir.

In the National Capital also, as many as eleven minor earthquakes have been recorded in and around since May. According to the data provided by the Seismology department, in Delhi, the most powerful tremors that had been felt had a magnitude 3.4. As the continuous tremors took place, many have raised questions on the possibility of increased seismicity in and around Delhi wherein a fear of a big earthquake has set in.

Meanwhile, according to a report by the IE, Vineet Gehlot, who is affiliated with National Geophysical Research Institute (NGRI) in Hyderabad and was former head of the National

Centre for Seismology in Delhi said that there is no unusual seismic activity going on around Delhi. He added that Delhi does not even lie on the fault lines. There may or may not be a big earthquake which, however, is too early to predict, the report said.

The report citing Gehlot highlighted that as far as Himalayan regions are concerned, it " is seismically one of the most active regions in the world," and according to scientists, a large earthquake of around magnitude 8 is due as there is energy trapped with one tectonic plate trying to move and beneath other. Even in this case, while it is predicted that energy will be released, there is no certainty of it happening or its timeline.

Published in: Financial Express

Uttar Pradesh: CDRI to start clinical trials of Umifenovir for Covid treatment

CSIR –CDRI

18 June, 2020

LUCKNOW: CSIR-Central Drugs Research Institute (CDRI) has received permission from the Drug Controller General of India (DCGI) to conduct clinical trials of antiviral drug, Umifenovir, at three city hospitals for the treatment of Covid-19.

CDRI is the first government scientific institution in the country to get approval from the regulatory authority to hold clinical trials of a drug.

"Umifenovir is already being used in the treatment of influenza and also in clinical trials for Covid-19 in China and Russia. Clinical trials will be done on Covid-19 patients having mild to moderate symptoms at two government hospitals - King George's Medical University (KGMU) and Ram Manohar Lohia Institute of Medical Sciences (RMLIMS) - and a private hospital, ERA's Lucknow Medical College and Hospital," CDRI director Prof Tapas Kumar Kundu said.

'Drug can be manufactured in India & is economical'

Stating that Umifenovir was considered for trial after screening of around 5,000 drug molecules, Prof Kundu said: "It is safe for humans as it is already in use for two decades for treatment of influenza in China and Russia. The drug can be indigenously manufactured in India hence we will not be dependent on any country. Moreover, it's very economical as compared to other drugs being considered for Covid-19 treatment."

A team of CDRI scientists Nilanjana Majumdar, Ajay Kumar Srivastava, Chandra Bhushan Tripathi and Nayan Ghosh, led by Dr

Ravishankar Ramachandran, screened the drug molecule. The formulation and documentation team included PR Mishra, V Bhosale, RK Tripathi and S Sharma.

"Umifenovir may help in prevention as well as treatment of Covid-19. CSIR laboratories across the country screened 25 drugs for Covid-19 treatment of which 16 were shortlisted. CDRI is conducting research on five drugs and one of them, Umifenovir, has reached the clinical trial stage," Kundu added.

Prof Kundu said a series of lab tests were being conducted since March to find out effective drug molecules for Covid-19 treatment. "This drug has a good safety profile and prevents entry of the virus into human cells by priming the immune system," he added.

He said keeping in view the emergency situation, CDRI would go for a short-term clinical trial which would be about a month or so.

"The next steps of the trial are being fast-tracked to ensure availability of the drug to Indian patients at the earliest. If all goes well, the drug will be in use for Covid treatment by August," the director said.

CDRI spokesman Sanjeev Yadav said the scientific institute had developed the process technology (chemical processing used to refine raw material into finished product) for Umifenovir in record time.

"CDRI has provided the licence of economical process technology for manufacturing and marketing of the drug to Medizest Pharmaceuticals Ltd., Goa, which has already received a test licence from DCGI," he said.

Yadav said Covid-19 was declared a pandemic by the World Health Organization on March 11 and from March 15, CDRI started working round-the-clock to find out a drug for Covid-19 treatment.

Published in: Times Of India

Polio vaccine for COVID-19 'testable', may offer limited protection: Scientists

CSIR –IIIM,IICB 18 June, 2020

New Delhi, Jun 18 (PTI) Indian scientists have responded cautiously to a suggestion by global researchers that the oral polio vaccine be tested for COVID-19, saying it is a â€œtestable ideaâ€□ based on a sound scientific concept but may offer only limited protection against the infection. Â

With a vaccine for COVID-19 at least a year away, scientists say repurposing already safe and effective vaccines is the way to go for immediate relief against COVID-19. The repurposed vaccines could includeÂ the oral polio vaccine (OPV) and the Bacillus Calmetteâ€"Guerin (BCG)Â used against tuberculosis, both part of the immunisation given to Indian children. Â

It is worth conducting a clinical trial, said Ram Vishwakarma, director of the CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM) in Jammu. Â

He was responding to a study last week by an international team of researchers in the journal Science. The researchers, including Shyamasundaran Kottili and Robert Gallo from the University of Maryland School of Medicine in the US, said the OPV should be tested to see if it might protect people from the SARS-CoV-2 virus. Â

They noted that the vaccine used to prevent poliomyelitis infections has been around since the 1950s, and is found to provide some protection against other viral infections. Â

The stimulation of innate immunity by attenuated vaccines -- live but with substantially reduced virulence -- in general and OPV in particular could provide temporary protection against COVID-19, the scientists noted. Â

Innate immunity is one of the two main immunity strategies found in vertebrates, including humans. Â

According to Vishwakarma, the idea proposed by Gallo, an internationally renowned virologist who co-discovered that HIV causes AIDS, is based on the fact that people who have undergone polio vaccination boost their innate immunity. Â

â€œIt is a sound scientific concept but we do not know what will eventually happen because this has multipleÂ phases. It may help patients in the early phase, with mild and moderate symptoms but may not help serious patients,â€Vishwakarma told PTI. Â

Â â€œIt is a testable idea based on a scientific hypothesis that is in turn based on the concept of what we call trained immunity, a non-specific way to boost innate immunity for our immune system to fight out the virus,â€Â Vishwakarma explained. Â

India has been implementing a pulse polio programme since 1995 with an aim to eradicate polio, added virologist Upasana Ray. This is in accordance with a resolution passed by the World Health Assembly in 1988 for polio eradication globally. Â

â€œEvery year, children between 0-5 years age are immunised with polio vaccine.Â It is a very widespread and well established programme,â€Ray,Â senior scientist at CSIR-IICB, Kolkata, told PTI. Â

Immunologist Satyajit Rath added that it is best to keep in mind that Gallo and his team are not talking about the function of the OPV as a "vaccine" which generates a specific immune response. Â

â€œInstead, it is simply the idea of giving people a viral infection, any viral infection, so that there is activation of innate antiviral and inflammatory immunity, which might reduce the chances of another virus (SARS-CoV-2) infection which enters at the same time,â€Rath, from the National Institute of Immunology (NII) in New Delhi, told PTI. Â

â€œDo I think this might work? It might, to some very modest extent, would be my guess, and not enough to make it particularly worthwhile,â€he said. Â

Noting that repurposing vaccines is a good idea, Ray said there is a chance of cross protection to some extent if the proteins of two pathogens have similar sequences even at some epitopes.

AnÂ epitope is a part of anÂ antigenÂ or aÂ foreign substanceÂ that is recognised by theÂ immune system cells, specifically by antibodies, B cells and T cells. Â

â€œFor polio also, we first need to see if any of the polio proteins show overlapping T or B cell epitopes as compared to that of SARS-COV-2. If there are, it might provide some protection... To what extent? That needs validation,â€said Ray. Â

Vishwakarma said the Council of Scientific & Industrial Research (CSIR) is currently testing a repurposed vaccine against COVID-19 on the similar lines of a polio vaccine. Â

It isÂ testing Cadila Pharmaceuticals" Sepsivac against COVID-19 in a Phase 2 clinical trial. Â

This immunotherapy treatment, which boosts "innate immunity", has been approved by the Drug Controller General of India (DCGI) for clinical trials,Â he said. Â

Rath noted that there are major potential limitations to using the polio vaccine for COVID-19. Â

First, it is likely that this "protection" by ongoing innate immune activation is likely to be of short duration. Â

Second, the likelihood is that a lot of people in India, particularly children, are immune to polio, and therefore will not actually let the OPV Â "work" as an infection, he said. Â

â€œInstead, polio-immune individuals would be "protected" against yet more vaccine, which would defeat the SARS-CoV-2-related purpose,â€Rath noted. Â

â€œIn fact, even amongst those who do not have current anti-polio antibodies, this "protection"

would likely be a transient one-time effect for a few days which is unlikely to be repeatable since this first exposure would make them polio-immune,â€he said.

Agreeing with Rath, Ray noted that most people in India are already vaccinated against polio in childhood. Â

â€œAren"t those people getting infected? Say yes, still they are.....then the next question could be, are they getting sick similar to non-vaccinated ones?â€she said. Â

â€œNext, is it possible that for polio it is providing life-long protection. Is it possible that in case some epitopes are matching that vaccination could help? All these are blind spots. Need time testing,â€said Ray. PTI SAR MIN MIN MIN

Published in: Outlookindia

CSIR Young Scientist Awardee 2019 in Chemical Sciences, John Mondal, is presently working as Scientist at CSIR-IICT, Hyderabad. He has been working on a promising special project on converting waste into wealth

CSIR –IICT 18 June, 2020

Dr John Mondal, CSIR Young Scientist Awardee 2019 in Chemical Sciences, is presently working as Scientist at CSIR-Indian Institute of Chemical Technology (IICT), Hyderabad. Dr Mondal has a PhD degree from the Indian Association for the Cultivation of Science (IACS, Kolkata) under the supervision of Prof. Asim Bhaumik. He was also awarded NASI-Young Scientist Platinum Jubilee Award in 2018 and the Telangana Academy of Sciences (TAS) Young Scientist Award in Chemical Sciences in 2016.

He has been working on a promising special project on converting waste into wealth. Following is his interview with India Science Wire:

Why biomass called fuel of the future?

Biomass includes wood, crops, garbage, landfill gas, food wastes, municipal waste, and industrial waste. Biomass-derived fuel is called "biofuel" or "bio-oil", and it is an environment-friendly fuel. As this fuel is based on renewable energy sources, it can reduce our dependence on petroleum-based fuels.

Compared to normal diesel fuel, biofuel produces no sulphur, no net carbon dioxide, less carbon monoxide, and more oxygen. More free oxygen leads to the complete combustion and reduced emission. Biofuel can enhance the engine efficiency of a vehicle and reduce pollution along with the environment temperature.

How your work could help in creating wealth from waste?

In view of the present demand and energy crisis, my research group at CSIR-IICT identified new synthetic strategies. The process we developed promises to produce rigid organic cage/sponge-like

molecules called ***Porous–Organic–Polymer*** (POP) thus providing a new dimension to various catalytic applications. Recent years have witnessed tremendous research breakthroughs, thanks to the unique pore structures and versatile skeletons of porous polymers. Consequently, exploring novel materials with task-specific applications is of fundamental importance for the sustainable development of economy.

Natural sponges are aquatic animals with excellent reversible compressibility consisting of pores on their body surfaces, which control a steady water flux through their bodies to filtre food, absorb oxygen, and eliminate waste products. Therefore, these unique features of natural sponges gave us the idea of mimicking them in artificial catalysts. Similar to these sponges, the organic artificial sponges are lightweight materials, stable to moisture and heat-resistant.

How do artificial sponge catalysts work?

Artificial sponge catalyst works best under high pressures similar to a kitchen sponge, which swells in water. The tiny spaces between the molecules of the artificial sponge swell slightly when it soaks in organic biomass. Catalyst development and engineering of the inside cage of the organic sponge address the present scientific challenges. This makes the task easy, as it is a fusion of inorganic metal and artificial sponges.

Can they be reused?

Our organic framework cage-based catalyst can be reused multiple times by washing and simple drying after each catalytic reaction. This could also bring down the cost of catalyst development substantially. Further, the separation of our catalyst has been found to be much faster than the conventional methods. In particular, these artificial sponge-based catalytic systems can work with similar stability even under dynamic reaction conditions, which may be essential to make the process renewable.

How can the process be a sustainable energy solution?

The economically viable organic sponge-based catalysts not only reduce CO_2 concentration in the environment but also transform them into synthetic hydrocarbons or fuels, most notably for transportation purposes and value-added chemicals of pharmaceutical importance.

How artificial sponge is going to help in long term perspectives? Commercial success can only be sustained and grown through an innovation-driven approach, which is grounded in the fundamental science and engineering underpinning new catalyst development. Our porous materials can be used in the automobile exhaust catalytic converters, which can efficiently improve air quality around for several decades. An attractive opportunity would entail integrating the current catalytic approaches to the precision synthesis of functional materials with process intensification, biocatalysis, and traditional polymer science.

What is the future plan?

Our future plan would be the prospective utility of POP-based catalysts for ***Synthetic Waste-Plastics transformation to liquid fuel***. The widespread use of large volumes of plastics has created serious environmental issues, which demand proper end-of-life management of plastic wastes. Polyethylene is remarkably inert and difficult to degrade without any special treatment. Thermal and catalytic pyrolysis at high temperatures (typically >400 °C) has been applied to degrade these plastic wastes. However, these processes suffer from low energy efficiency and lack of product control, often resulting in the formation of complex product compositions, including hydrocarbon gas, oil, wax, and char. My research group is looking for some catalysts in future with special emphasis on the topologies of POP cage, which may efficiently transform synthetic waste plastics to wax-free transportation fuel.

As a student, you are supposed to drive your own learning, which means being more self-motivated and independent of your teacher. You are supposed to come up with your own ideas and theories rather than just learning about other people's findings. You will be encouraged to do research around the topic you are interested in, but will not always be given set tasks to complete within a time frame. Finally, passion, commitment, patience and vision can eventually push you to choose research as your career. (India Science Wire)

Published in: Eet India

CSIR-CDRI

18 June, 2020

सीडीआरआई ने चीन-रूस में इस्तेमाल हो रही एंटीवायरल दवा तैयार की

कोरोना के मरीजों पर होगा क्लीनिकल ट्रायल, उमीफेनोविर की प्रॉसेस टेक्नोलॉजी अब तक रूस-चीन के ही पास थी

यह दवा शरीर की प्रतिरक्षा प्रणाली को करती है सक्रिय जिससे वायरस नहीं कर पाते कोशिकाओं में प्रवेश

अमर उजाला ब्यूरो

लखनऊ। सीएसआईआर की लैब सेंट्रल ड्रग रिसर्च इंस्टीट्यूट (सीडीआरआई) ने चीन और रूस में फ्लू के इलाज में इस्तेमाल हो रही दवा उमीफेनोविर के कंपाउंड के उत्पादन के लिए जरूरी प्रॉसेस टेक्नोलॉजी विकसित कर ली है। कोरोना के मामलों में इसके क्लीनिकल ट्रायल को ड्रग कंट्रोलर जनरल ऑफ इंडिया से हरी झंडी मिल गई है। जुलाई के पहले सप्ताह में केजीएमयू सहित लखनऊ के तीन अस्पतालों में इसका कोरोना मरीजों पर क्लीनिकल ट्रायल शुरू हो जाएगा।

सीडीआरआई के निदेशक डॉ. तापस कुंडू बताते हैं कि यह दवा प्रतिरक्षा प्रणाली को सक्रिय करती है। इससे वायरस का कोशिकाओं में प्रवेश रुक जाता है। क्लीनिकल ट्रायल सफल रहा तो यह इलाज के लिए सस्ता विकल्प हो सकता है।

सीडीआरआई के प्रवक्ता डॉ. संजीव यादव कहते हैं कि क्लीनिकल ट्रायल सरकरी संस्थानों में केजीएमयू, लोहिया इंस्टीट्यूट और प्राइवेट संस्थान में एरा मेडिकल कॉलेज में 130 मरीजों पर होगा। खुद पर ट्रायल के लिए रजामंदी देने वाले मरीजों का अगले 15 दिनों में चयन की प्रक्रिया पूरी कर ली जाएगी। ट्रायल दो महीने चलेगा।

उमीफेनोविर है क्या? : उमीफेनोविर एक एंटी वायरल दवा है। अभी तक रूस और चीन के पास ही इसे बनाने के लिए जरूरी प्रॉसेस टेक्नोलॉजी है। उनके पेटेंट का हम उपयोग नहीं कर सकते हैं और अन्य किसी देश में यह उपलब्ध नहीं है। हाल ही में कोविड-19 के रोगियों के लिए इसके संभावित उपयोग को चिह्नित किया गया है। ऐसे में सीडीआरआई ने तीन महीने में इस दवा के देसी वर्जन के लिए अपनी प्रॉसेस टेक्नोलॉजी विकसित कर ली।

120 में चुने गए 30 कंपाउंड में से पहला : सीडीआरआई ने कुल 120 कंपाउंड कोरोना की संभावित दवा के लिए चुने थे। उसमें से 30 को प्रभावी पाया गया। यह पहला कंपाउंड है जिसका क्लीनिकल ट्रायल शुरू हो रहा है। खास बात है कि इसके उत्पादन के लिए किसी भी एक्टिव फार्मास्युटिकल्स इंग्रीडिएंट को आयात करने की जरूरत नहीं होगी।

गोवा की फार्मा कंपनी बनाएगी देसी दवा

गोवा की निजी फार्मा कंपनी को टेक्नोलॉजी ट्रांसफर सीडीआरआई ने की है। फार्मा कंपनी भी अलग से डीजीसीआई से क्लीनिकल ट्रायल की अनुमति ले चुकी है। दवा के निर्माण और बिक्री का लाइसेंस उनके पास है जिससे क्लीनिकल ट्रायल सफल रहने पर न्यूनतम समय में उत्पादन करने में आसानी होगी।

Published in: Amar Ujala

CSIR-CDRI

18 June, 2020

सीडीआरआई कोरोना की दवा बनाने के करीब

अच्छी खबर

लखनऊ | निज संवाददाता

कोरोना वायरस के बढ़ते प्रकोप के बीच एक राहत देने वाली खबर आई है। सीडीआरआई ने कोरोना की सटीक दवा खोजने का दावा किया है। संस्थान को एंटीवायरल ड्रग उमिफेनोविर को कोविड-19 के इलाज के लिए फेज थ्री क्लीनिकल ट्रायल की भारत सरकार के औषधि महानियंत्रक (डीसीजीआई) से इजाजत मिल गई है। यह ट्रायल केजीएमयू, लोहिया संस्थान और एरा मेडिकल कॉलेज में भर्ती मरीजों पर होगा।

सीडीआरआई के निदेशक प्रो. तपस कुंडू ने बुधवार को बताया कि 15 मार्च से संस्थान के वैज्ञानिकों की टीम ड्रग री-पर्पजिंग मेथड से कारगर दवाई खोजने में जुटी थी। शुरुआती चरण में वैज्ञानिकों ने 120 संभावित मॉलिक्यूल को चिन्हित (स्क्रीनिंग) किया। स्क्रीनिंग करते हुए पहले 30 और आखिर में 4-5 कारगर मॉलिक्यूल खोज निकालने में कामयाबी मिली।

कोशिका में वायरस का प्रवेश रोकेगी दवा : प्रो. तपस कुंडू के मुताबिक, इस दवा की खासियत यह है कि यह वायरस को मानव कोशिकाओं में प्रवेश करने और उससे जुड़ने से रोकेगी। कोशिका से जुड़ न पाने पर यह मानव शरीर को नुकसान नहीं पहुंचा पाता। जिसके बाद मानव शरीर की प्रतिरक्षा प्रणाली की कोशिकाएं इसे नष्ट कर देती हैं। यहीं नहीं, दवा वायरस को हर स्टेज में रोकने में सक्षम है। यह वायरस मुंह, नाक आदि से प्रवेश करता है। अगर वायरस मुंह में है तो इसको मुंह से आगे बढ़ने से रोक देगी। अगर वायरस गले में पहुंच गया है तो इसको गले से आगे नहीं बढ़ने देगी। यह रोगी की प्रतिरोधक क्षमता को सक्रिय करती है।

10-12 रुपये होगी कीमत

प्रो. कुंडू ने बताया कि दवा बहुत सस्ती होगी। निर्माण के बाद इसकी कीमत 10-12 रुपए प्रति टैबलेट आएगी। हालांकि अभी यह तय नहीं है कि यह टैबलेट या कैप्सूल के रूप में आएगी। इस दवा के लिए भारत में उपलब्ध है। यह दवा राष्ट्रीय कार्यक्रम का हिस्सा हो सकती है।

15 मार्च से संस्थान के वैज्ञानिक ड्रग री-पर्पजिंग मेथड से दवाई खोजने में जुटे थे

03 अस्पतालों केजीएमयू, लोहिया और एरा में भर्ती मरीजों पर ट्रायल होगा

वैज्ञानिकों के प्रयासों की सराहना

सीएसआईआर के महानिदेशक डॉ. शेखर मांडे ने सीडीआरआई के युवा वैज्ञानिकों डॉ. अजय कुमार श्रीवास्तव, चंद्र भूषण त्रिपाठी, नयन घोष और नीलांजना मजूमदार की टीम एवं डॉ. रविशंकर रामचंद्रन नोडल वैज्ञानिक के प्रयासों की सराहना की। ड्रग के फॉर्म्यूलेशन की टीम में डॉ. पीआर मिश्रा, विवेक भोंसले, आरके त्रिपाठी, एसके रथ और शरद शर्मा शामिल हैं।

Published in: Hindustan

CSIR-CDRI

18 June, 2020

CDRI to start clinical trials of drug for Covid-19 treatment

PNS ■ LUCKNOW

In the battle against Covid-19, CDRI has received permission from the Drug Controller General of India to conduct clinical trials of a drug which it has come up with recently. CDRI director Tapas Kundu said it would be one of the cheapest drugs for the treatment of Covid-19 .

"Central Drug Research Institute has received permission for carrying out controlled trials of efficacy, safety and tolerability of antiviral drug 'Umifenovir'. The phase-III clinical trials will be carried out at KGMU, RMLIMS and Era's Lucknow Medical College & Hospital," media spokesperson Sanjeev Yadav said.

"This drug has a good safety profile and it acts by preventing entry of virus into human cells and also by priming the immune system. CDRI came up with this drug by carrying out a repurposing of drugs where they screened a number of drugs. We have also developed a process technology for manufacturing it. 'Umifenovir' is mainly used for treatment of influenza and is available in China and Russia, and has recently come into prominence due to its potential use for Covid-19 patients. To evaluate its efficacy in Indian patients, CDRI has taken up the clinical trials. Further, it has developed the process technology for 'Umifenovir' in record time and licensed the economical process technology for manufacturing and marketing the drug to M/s Medizest Pharmaceuticals Private Ltd (Goa) that has already received test license from DCGI," he explained. Kundu said all the raw materials for the drug are indigenously available and if the clinical trial is successful, 'Umifenovir' can be a safe, efficacious, affordable drug against Covid-19 and can be part of the National Programme against the disease. Prof. He added that this drug has the potential for prophylactic use.

An autorickshaw driver shows a bottle of sanitiser which he uses in view of the coronavirus pandemic **Pioneer**

CSIR Shekhar Mande Shekhar Mande said the clinical trial is an integral part of the CSIR strategy of repurposing drugs for Covid-19 and complimented the team of CDRI scientists. The clinical trial application was processed on high priority as per the DCGI's initiative against Covid-19. The next steps of the trial are being fast-tracked to enable the availability of the drug to patients as soon as possible.

Published in: The Pioneer

CSIR-CDRI

18 June, 2020

कोरोना से जंग सीडीआरआई ने विकसित की दवा निर्माण की प्रॉसेस टेक्नॉलजी

उमीफेनोविर के क्लिनिकल ट्रायल को मंजूरी

■ एनबीटी, लखनऊ

कोविड-19 के खिलाफ चल रही जंग के बीच उमीफेनोविर दवा को नई उम्मीद के तौर पर देखा जा रहा है। सीएसआईआर-सेंट्रल ड्रग रिसर्च इंस्टिट्यूट (सीडीआरआई) ने इस दवा के निर्माण की प्रॉसेस टेक्नॉलजी विकसित कर ली है। इसके साथ इस दवा के क्लिनिकल ट्रायल के लिए भी मंजूरी मिल गई है। संस्थान के निदेशक प्रो. तपस के कुंडू ने बताया कि इसका क्लिनिकल ट्रायल केजीएमयू, डॉ. राम मनोहर लोहिया संस्थान और एरा मेडिकल कॉलेज में किया जाएगा।

संस्थान के निदेशक प्रो. तपस के कुंडू के मुताबिक, उमीफेनोविर दवा वायरस को कोशिकाओं में जाने से रोकने के साथ रोग प्रतिरोधक क्षमता बढ़ाने में भी कारगर साबित हो सकती है। फिलहाल सिर्फ रूस और चीन में इंफ्लूएंजा के लिए इसका इस्तेमाल किया जाता है। बाकी किसी देश में यह दवा उपलब्ध नहीं है। कोविड-19 का संक्रमण शुरू होने पर कई जगह इसके इस्तेमाल पर रिसर्च शुरू हुई है। इस बीच संस्थान ने रेकॉर्ड समय में इस दवा को बनाने के लिए प्रॉसेस टेक्नॉलजी तैयार कर ली है।

कंपनी को दिया लाइसेंस

संस्थान के निदेशक ने बताया कि दवा का असर जांचने के लिए तीसरे चरण रेंडम, डबल ब्लाइंड प्लेसबो नियंत्रित क्लिनिकल ट्रायल की मंजूरी मिल गई है। क्लिनिकल ट्रायल सफल रहा तो तो इस दवा को किफायती दर पर देश में ही बनाया जा सकेगा। संस्थान ने यह दवा बनाने के लिए गोवा की मेडिजेस्ट फार्मास्यूटिकल को प्रॉसेस टेक्नॉलजी का लाइसेंस दिया है।

जल्द शुरू होगा ट्रायल

सीएसआईआर के महानिदेशक डॉ. शेखर मांडे ने कहा कि उमीफेनोविर दवा का क्लिनिकल ट्रायल बहुत महत्वपूर्ण है। मंजूरी मिलने के बाद जल्द से जल्द दूसरे चरणों पर विचार किया जा रहा है, ताकि आम लोगों को जल्द ही दवा उपलब्ध हो।

इस टीम ने विकसित की तकनीक

उमीफेनोविर के निर्माण की प्रॉसेस टेक्नॉलजी डॉ. अजय कुमार श्रीवास्तव, चंद्रभूषण त्रिपाठी, नयन घोष, नीलांजना मजूमदार, डॉ. रविशंकर रामचंद्रन की टीम ने विकसित की है। इन वैज्ञानिकों का दावा है कि इस दवा की रोग निरोधक क्षमता बहुत अधिक है। यह कोविड-19 महामारी के खिलाफ बेहद किफायती और प्रभावी दवा साबित हो सकती है।

Published in: Navbharat Times

Assam well fire continues, OIL says production getting affected in big way

CSIR –NEIST 17 June, 2020

Guwahati, Jun 17 (PTI) Gas continued to flow "uncontrollably" and the fire raged on at a natural gas well of OIL in Assam"s Baghjan on Wednesday with multiple agencies engaged in efforts to stop the leakage and douse the blaze, officials said.

Oil India Ltd (OIL) continued to face public ire over the incident and its production is getting affected in a big way with the company losing 6,132 MT of crude oil and 7.97 MMSCM of natural gas output in the last 22 days due to the bandhs and blockades, they said.

The PSU major said nine trucks loaded with materials for constructing a bailey bridge are being mobilised from 3 Corps of the Indian Army at Misamari in Sonitpur district and it is in transit.

"Two more trucks are being loaded and six more will be loaded with remaining materials for the bridge and shall depart for Baghjan," the company said in a statement.

Earlier, Tinsukia Deputy Commissioner Bhaskar Pegu had sought help from the Army to construct a bridge of around 150-metre length over a water body adjacent to the blowout well in Baghjan.

The state-run company also said vehicles carrying materials are being mobilised from ONGC Rajamundry and it is in transit. Besides, two more trucks carrying equipment are coming from ONGC"s Vadodara base in Gujarat.

Talking about production loss due to agitation by the locals and some groups, OIL said there was an output cut of 288 MT of crude oil and 0.44 MMSCM of natural gas as reported on Tuesday.

"Cumulative production loss since May 27, 2020 due to bandhs and blockades: 6,132 MT Crude oil, 7.97 MMSCM of natural gas," it added.

According to the statement, various assessments and impact studies of the blowout are being done by multiple agencies such as TERI, CSIR-NEIST and the Assam Agricultural University.

The well no. 5 at Baghjan in Tinsukia district has been spewing gas uncontrollably for the last 22 days and it caught fire on June 9, killing two of OIL"s firefighters at the site.

The blaze at the well is so massive that it was seen from a distance of more than 30 km with thick black smoke going up several metres high, endangering the local biodiversity in the Dibru-Saikhowa National Park following the blowout on May 27.

Though there is no fire in the periphery of the well site at present, the company has declared an area up to 1.5 km of radius as "red zone" to avoid any untoward incident and damage to the general public.

At present five inquiries are taking place to find out the facts — a three-member probe by the Ministry of Petroleum and Natural Gas, a one-member probe by the Assam government and an internal five-member inquiry by the OIL.

Besides, two more crucial independent investigations of technical nature are being carried out by Directorate General Of Mines Safety (DGMS) and Oil Industry Safety Directorate (OISD).

Chief Minister Sarbananda Sonowal had also ordered the Additional Principal Conservator of Forest (Wildlife) to conduct a study on the effects of the explosion on the environment and ecology of the surrounding areas, including on flora and fauna in adjacent Dibru-Saikhowa National Park.

Already two officials of the OIL have been suspended for alleged negligence of duty at the gas well site, while a show-cause notice has been issued to John Energy Pvt Ltd, the outsourced private operator of the well.

An FIR has also been registered against Oil India and its outsourced private well operator for the Baghjan gas well blowout, which has polluted the environment and village surroundings.

Published in: Outlookindia

NEERI team visits Lonar lake

CSIR –NEERI

17 June, 2020

NEERI team members collecting samples of water for testing at Lonar lake.

"The researchers of National Environment Engineering Research Institute (NEERI) have collected the water samples from six areas in Lonar Sarovar to find out the reasons behind the water turning pinkish red. However, the exact cause behind this phenomenon would be clear only after detailed research in a week," informed Atul Maldhure, senior scientist of NEERI. A team of NEERI including Chief Researcher Dr Gajanan Khadse, Senior Scientist Atul Maldhure and Mahesh Kumar reached Lonar on Tuesday afternoon.

Range Forest Officer of Wildlife Division S B Napte, forest guards D L Shinde, H J Mane, G R Shinde, K B Sarkate and K E Nagare showed the entire area to the team. The team entered the lake water and collected samples from four sides and centre of the lake. "There are many examples of changes in the colour of lake water at international level in the past due to bacteria and algae. Generally, temperature increases in India during May 15 to June 15.

Algae also grows fast during this period and some bacterias generate from it. But, the physio-chemical property of water in Lonar lake is different than other lakes. The water in Lonar lake is salty like sea, hence the micro-biological activity here is different. The bacteria and algae might have grown due to high temperature, leading to pigmentation (change in lake water)," hoped Maldhure. But, he made it clear that it would be right to give more details only after detailed research.

Published in: The Hitavada

Lonar lake: HC seeks report on colour change

CSIR –NEERI

17 June, 2020

Court also prohibits construction of the Lonar-Kinhi Road until further orders

The Nagpur Bench of Bombay High Court has sought reports on the environmental impact assessment of Lonar lake from National Environmental Engineering Research Institute (NEERI) and the Geological Survey of India.

A Division Bench of Justices Sunil Shukre and Anil Kilor was hearing a petition filed by one Kirti Nipankar, raising concerns over the lake water which has turned pink in colour.

The Bench said a court-appointed committee, including the judges themselves, would visit the site.

The State Forest Department informed the court it has already collected samples from the lake which have been sent to NEERI, in Nagpur, and the Agarkar Research Institute in Pune.

Advocate Anand Parchure, appearing for the petitioner, told the court that an expert team which is probing the colour change could also examine findings submitted by NASA expert Dr. Shawn Wright.

As per Dr. Wright's findings, there is a glass formation over the surface of the bed rock of the Lonar crater, which is a basalt rock. This is a new feature not found anywhere else on the Earth and only on the beds of craters existing on moon.

The Bench directed NEERI and Agarkar Research Institute to submit their reports to the court within four weeks. It said, "The expert team from NEERI and the Geological

Survey of India shall examine the findings regarding glass formation on surface of the crater lake by collecting requisite samples and analysing them, and submit their reports within a period of four weeks."

The forest department also informed the Bench that since the area is an eco-sensitive zone, the construction of Lonar-Kinhi road would be a problem, as there is a large quantity of a unique material called ejecta blanket, which contains is a substance found on the moon.

The court accepted this argument and directed the Buldhana district collector to take immediate steps to protect the material from possible theft and pilferage. It also prohibited construction of the Lonar-Kinhi Road until further orders, and posted the matter for hearing on June 29.

Published in: The Hindu

CSIR-NEERI

17 June, 2020

आज से जांच शुरू करेगा नीरी

लोणार झील के पानी का रंग गुलाबी होने का मामला

नागपुर। 16 जून। लोस सेवा

लोणार झील का पानी गुलाबी होने का कारण जानने के लिए राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान (नीरी) द्वारा बुधवार से जांच आरंभ की जाएगी. नीरी की टीम मंगलवार को पानी के नमूने लेकर नागपुर पहुंची है.

दरअसल, पिछले सप्ताह बुधवार को बुलढाणा जिले की लोणार झील के पानी का रंग पूरी तरह गुलाबी हो गया था. ऐसा पहली बार हुआ है इसलिए नागरिकों में जिज्ञासा पैदा हो गई है कि आखिर पानी गुलाबी कैसे हो गया.

इसकी जांच करने के लिए बुलढाणा के वन्यजीव विभाग ने पानी के नमूने नागपुर स्थित नीरी में भेजे थे लेकिन प्रोटोकॉल के तहत नमने संकलित करने के लिए नीरी की टीम खुद लोणार पहुंची थी.

झील के पानी के नमूने लेते नीरी के अनुसंधानकर्ता.

नीरी के वरिष्ठ प्रधान वैज्ञानिक व जल प्रौद्योगिकी और प्रबंधन विभाग के प्रमुख डॉ. पवन कुमार लाभसेटवार ने बताया कि हमारी टीम नमूने संकलित करने के लिए सोमवार को लोणार गई थी जो नमूने संकलित कर मंगलवार को वापस नागपुर लौटी है. बुधवार से इन नमूनों की जांच आरंभ की जाएगी. हम दो सप्ताह के भीतर अपनी रिपोर्ट देंगे. हमें हाईकोर्ट से भी रिपोर्ट पेश करने के लिए दो सप्ताह का समय मिला है

Published in: Lokmat Chamachar

CSIR-NEERI

17 June, 2020

जलवायू परिवर्तनाचे दिसतील गंभीर परिणाम : वैज्ञानिकांचा इशारा

पृथ्वीलाही 'लॉकडाऊन'ची गरज

निशांत वानखेडे
लोकमत न्यूज नेटवर्क

नागपूर : तापमान आणि हवामान बदल याच घटकांवरून जलवायू परिवर्तनाचे आकलन करता येणार नाही. मात्र कोरोनासारखा कोणताही आजार आला की माणसाच्या शरीराचे तापमान वाढते त्याचप्रमाणे पृथ्वीचे तापमान वाढत आहे, याचा अर्थ पृथ्वी आजारी आहे आणि हा आजार दूर करण्यासाठी 'लॉकडाऊन'सारख्या उपचाराची नक्कीच गरज आहे. जलवायू परिवर्तनाचा अभ्यास करणारे वैज्ञानिक याबाबत गंभीर इशारा देत आहेत.

राष्ट्रीय पर्यावरण अभियांत्रिकी संशोधन संस्थे(नीरी)च्या जलवायू परिवर्तन विभागाचे प्रमुख व प्रधान वैज्ञानिक डॉ. जे. एस. पांडे यांनी गेल्या काही वर्षांतील वातावरणात झालेले बदल अधोरेखित केले आहेत. दरवर्षी पावसाळ्यात थोड्या अधिक फरकाने पण जून, जुलै व ऑगस्ट महिन्यात निर्धारित व नियमित स्वरूपात येतो. गेल्या वर्षी मात्र जून संपल्यावर पाऊस सुरु झाला आणि पुढे हिवाळ्यापर्यंत गेला आणि वर्षभर थोड्या थोड्या दिवसाने हजेरी लावली. तापमान २ ते ३ अंशाने वाढलेच आहे. हा वरवर दिसणारा फरक झाला. मात्र जलवायू परिवर्तनामुळे पृथ्वीवरील अनेक प्राणी आणि पक्षी नामशेष होण्याच्या स्थितीत पोहचले आहेत. एवढेच नाही तर काही वनस्पतीही नष्ट झाल्या आहेत. भविष्यात कदाचित या संकटामुळे काही वनस्पती बहरणार नाही. यामुळे जैवविविधतेवर अदृश्य असे परिणाम होत आहेत.

कार्बन सायकल व हायड्रोलॉजिकल सायकल (पाणी) हे दोन महत्त्वाचे घटक आहेत. टाळेबंदीमुळे जलवायू परिवर्तनात मोठी आणि सकारात्मक घट झाली. यासाठी कोणते मोठे तंत्रज्ञान व खर्च करण्याची गरज पडली नाही. हेच नियोजन पुढे करणे गरजेचे आहे. औद्योगिकीकरण, 'रेसिडेन्सियल ॲक्टिव्हिटी' करताना पर्यावरणाला हानी होणार नाही, याची काळजी घ्यावी लागेल.

'ग्रीन कव्हर' वाढविणे व 'कार्बन फूटप्रिंट' कमी करणे काळाची गरज आहे. सर्वात मोठे म्हणजे शिक्षण आणि जनजागृती करणे अत्यावश्यक असल्याची भावना डॉ. पांडे यांनी व्यक्त केली.

सामूहिक शेतीची गरज

आज देशात ८० टक्के शेतकरी अल्पभूधारक आहेत आणि प्रत्येक शेतकरी आपल्या पिकांसाठी नियोजन न करता पाण्याचा अमर्याद वापर करतो. यामुळे भूजल पातळी घसरून 'हायड्रोलॉजिकल फूटप्रिंट'वर परिणाम झाला. यासाठी एकतर सामूहिक शेती किंवा कुणाला किती पाणी द्यायचे याचे नियोजन व नियंत्रण ठेवणारी स्वतंत्र स्वायत्त संस्था निर्माण करण्याची गरज डॉ. पांडे यांनी व्यक्त केली.

Published in: Lokmat Marathi

CSIR-NEERI

17 June, 2020

NEERI team visits Lonar lake

NEERI team members collecting samples of water for testing at Lonar lake.

District Correspondent
BULDANA, June 16

"THE researchers of National Environment Engineering Research Institute (NEERI) have collected the water samples from six areas in Lonar Sarovar to find out the reasons behind the water turning pinkish red. However, the exact cause behind this phenomenon would be clear only after detailed research in a week," informed Atul Maldhure, senior scientist of NEERI.

A team of NEERI including Chief Researcher Dr Gajanan Khadse, Senior Scientist Atul Maldhure and Mahesh Kumar reached Lonar on Tuesday afternoon. Range Forest Officer of Wildlife Division S B Napte, forest guards D L Shinde, H J Mane, G R Shinde, K B Sarkate and K E Nagare showed the entire area to the team. The team entered the lake water and collected samples from four sides and centre of the lake. "There are many examples of changes in the colour of lake water at international level in the past due to bacteria and algae. Generally, temperature increases in India during May 15 to June 15. Algae also grows fast during this period and some bacterias generate from it. But, the physio-chemical property of water in Lonar lake is different than other lakes. The water in Lonar lake is salty like sea, hence the micro-biological activity here is different. The bacteria and algae might have grown due to high temperature, leading to pigmentation (change in lake water)," hoped Maldhure. But, he made it clear that it would be right to give more details only after detailed research.

Published in: The Hitavada

Let's not miss the sodium-battery bus

CSIR –CECRI

16 June, 2020

India was late to semiconductor and lithium-ion battery manufacture but is well up on research here, says M Ramesh

Earlier this month, a less-known UK-based company called Faradion put out a press release that spoke of a "major partnership" with an Indian company called Infraprime Logistics Technologies for "developing Sodium-ion batteries for commercial vehicles in India.

The announcement was eyebrow-raising. Sodium-ion batteries ready for commercial vehicles? Well, that meant something.

In the world of electrochemical batteries, lithium-ion is the king — due to its light weight, long life and ability to pack more power. There is one problem, though — lithium is scarce. Cobalt, which is usually a part of the battery chemicals cocktail, is rarer. Also, lithium-ion batteries heat up quickly, which means you need to spend more on building up safety. Therefore, there is a search worldwide for alternatives to li-ion.

Sodium-ion batteries have been knocking around for some time, but it was said that because they can't pack much power (low energy density), they will be bulky. For this reason, it was always assumed that SIB would be more useful where space is not an issue, such as for large storage systems woven into electricity grids. Sodium-ion batteries for transportation would come, if at all, later.

Faradion's press release, therefore, meant that the technology had matured quite fast. If so, where does India stand in sodium-ion technology?

From a close look at the status of research in India's laboratories, it appears that India is not a laggard. In the past, India missed being in semiconductor and lithium-ion battery manufacture, but in sodium battery manufacture, which has a huge potential globally, the opportunity is still wide open.

Intense research is going on in several IITs and CSIR laboratories, such as the Central Electro Chemical Research Institute (CECRI). The search is for the right material for the four key components — cathode, anode, electrolyte and separator — and some good candidates have been discovered. CECRI, for one, is almost ready to offer the technology to the industry, other institutions are not much behind.

Scientists upbeat

Scientists are usually coy about talking of their ongoing research because of the uncertainty of outcomes, but in the case of sodium-ion technology their confidence is palpable. "Based on today's advancement in battery technology, sodium-ion batteries can strongly compete with lead-acid and lithium-ion batteries that are being used in UPS, grid storage applications and future electric buses," says Prof Venimadhav Adyam of IIT Kharagpur. Adyam's team has worked in this area and is awaiting grant of patents for inventions of 'gel polymer electrolyte' and 'nitrogen-doped nano carbon anode'.

Adyam has told *BusinessLine* that the cathode material developed at IIT Kharagpur is all locally sourced and has "storage capacity comparable to commercially available li-ion chemistries". He also said that the gel polymer electrolyte makes the batteries flame-resistant, stable at temperatures up to 300 degrees C, and therefore, safe. Having achieved this, IIT Kharagpur is now looking forward to working with the industry for further research and commercialisation.

Prof Sagar Mitra of IIT-Bombay, who has also dirtied his hands working on Sodium-ion battery technology for five years, is similarly confident. "The future of sodium-ion battery in India is bright in terms of raw materials availability and ambient temperature operation," Prof Mitra told *BusinessLine*. "However, we need to target correct chemistries for different power and energy applications."

Mitra, like CECRI, has developed a complete cell (a battery is a collection of cells). Mitra's cell, which uses a sodium-titanium oxide anode and vanadium oxide cathode, is of 1,000 mAH (or 1 AH) storage capacity and nominal voltage of 2.9 V and boasts of a life of 4,000 cycles. Efforts are on to raise the capacity to 2,000 mAH. (To compare, the conventional Duracell AAA (or thin) cell is 750 mAH and 1.5 V; a 6.5 cm tall Samsung cylindrical lithium-ion battery is 2,200 mAH and 3.6V.) Also, the energy density characteristic appears to be quite high — 180-200 Watt-hour per kg — which means it can pack more power. The energy density, then, gets close to 265 Wh/kg of lithium-ion batteries. (Petrol has 12,700 Wh/kg). These numbers show that sodium-ion is getting close to lithium-ion in performance, while being safer and cheaper.

Mitra's cell shows "excellent performance in terms of specific capacity and energy density and can be well compared with Faradion." And, since all the raw materials could be sourced within India, the cost of the product will be low.

CECRI has completed development of a 1,000 mAH, 3.2V sodium-ion cell and is ready to commercialise it. Dr A S Prakash, Principal Scientist, who is working on this, tells *BusinessLine* that several large companies are talking to CECRI to buy the technology. CECRI, incidentally, is building a factory with an investment of ₹100 crore to produce lithium-ion cells — a rare instance of a government-owned research institution getting into commercial manufacture. The facility, expected to be commissioned next year, would provide a platform to produce sodium-ion cells too, condensing the lab-to-market time.

Trial runs under way

So, there is good stuff happening in India, though the proof-of-pudding is in scaling up to commercial production. Mitra observes that "the sodium-ion battery is most suitable for large stationary storage applications." However, sodium batteries for automotive applications is slowly getting within reach.

The first automotive user of sodium batteries is obviously commercial vehicles. Subodh Yadav, CEO of Infraprime Logistics Technologies, expects to put a sodium-ion battery powered truck on the roads possibly by January 2021. The company has been trial-running two electric trucks

of 55-tonne capacity with lithium-ion batteries in the last six months and says they have clocked 90,000 km. About 50 vehicles are "in various stages of production." These trucks, Yadav told *BusinessLine*, can save up to ₹15 a km in fuel cost, compared with diesel vehicles.

A sodium-ion battery powered truck could potentially be even more economical — costs would depend upon the number of batteries produced. Infraprime Logistics is trying to get sodium-ion powered trucks included in the government's FAME-II scheme, to make them eligible for subsidies. If that happens, "we can achieve price parity with the diesel trucks," says Yadav.

In sum, India is sitting on a unique opportunity to lead in an area that the entire world is interested. Importantly, sodium-ion technology provides a way out of dependence on China for batteries. A good research foundation exists, but then, in India, many technologies (including semiconductors and lithium-ion) have disappeared into the deep chasm between laboratories and the industry. Scientists' focus is typically on getting their findings published in a high impact-factor journal; the industry is too risk-averse to bet on new technologies.

This is true anywhere in the world, but other countries have mechanisms to bridge the gap. For instance, the US' 'Advanced Research Projects Agency-Energy' (ARPA-E) provides a sort of a venture funding to emerging technologies.

"Similar high risk-high gain funding is essential for enabling Indian scientists and researchers to explore and demonstrate the commercialisation potential of their innovations which have been verified in lab-scale prototypes. Inventions happening in sodium-ion batteries will also benefit immensely from such a funding programme," says Dr Satyajit Phadke, Manager R&D at Customized Energy Solutions. Phadke too believes there is immense potential for sodium-ion batteries.

The government of India does provide research funding to academics under the Impact Research Innovation and Technology (IMPRINT) schemes, but that is only for research and accordingly, the funding is also small. For instance, under the first phase of IMPRINT, 259 projects were provided

funding of about ₹600 crore. IMPRINT does provide for a private sector participant in the research.

Whether the government should provide risk capital, or it is up to the industry to take a bet on potential technologies is a moot point. What is clear, however, is that a mechanism of technology transfer needs to be evolved quickly to ensure that India does not miss the sodium-battery bus.

Published in: The Hindu Businessline

Jamia Hamdard organizes an International webinar on "Post COVID-19 Era: Road Ahead"

CSIR –CRRI 16 June, 2020

In continuation of Jamia Hamdard COVID-19 Series, School of Unani Medical Education and Research (SUMER), Jamia Hamdard organized 4th International Webinar on "Post COVID-19 Era: Road Ahead"

The webinar attracted more than 568 delegates enthusiastically. The participants were academicians, researchers, clinicians, science scholars, students, and medical officers from different parts of India and abroad including Iraq, Iran, Sri-Lanka, UAE, Saudi Arabia, and South Africa.

This international Webinar was an interdisciplinary insight into the COVID-19 and post COVID-19 challenges that are expected to be faced by the world and our nation in particular. The webinar was overall more about how Information communication technology (ICT) and artificial intelligence (AI) platform which is not only being used as a tool of awareness these days but is also giving a comprehensive understanding of how to be safe, socially, and mentally. It also emphasized on immune-boosting measures available not only to health professionals but for common people as well.

A principal Scientist of Central Road Research Institute (CRRI) an organizational Unit of CSIR, Dr. Mukti Advani, who is IIT Delhi graduate delivered a lucid lecture on how in such a changing times after nCoV era ends, the urban transport might be planned and executed if the SARS-nCoV persists. As not sooner it's going to vanish from the world.

Another IIT Delhi graduate Dr Farhat Azad and a principal Scientist at CRRI spoke on the technology-driven initiatives of Govt of India during the COVID-19 outbreak in order to make the people of the country get acquainted with tools and apps. Like the apps of Sanjivni, Arogya setu. CRRI- CSIR has also recently launched an App "ArogyaPath" to which she was involved as a development scientist. The app will be a guide for authentic and genuine tools, devices, masks PPE Kits Sanitizers.

Considering Corona pandemic and Covid19 outbreak as a disaster senior scientist Dr. Amir Ali Khan of NIDM (National Institute of Disaster Management, MHA, Govt of India) spoke on preparedness and up-gradation of health infrastructure available to us in coming future as if ecological turbulence and COVID 19 affects us as an outbreak then we ought to be ready with all preparedness for it to be handled on the identical model of Natural Disaster. Dr. Khan has been associated as an advisor with the UNDP program of disaster management not only in Asia but in Europe too.

Professor Jugal Kishore, Head of Department, a renowned Medical speaker and Head of Community Medicine at Safdarjung hospital Delhi spoke on information meddling of non-professionals wherein many a times fake information creates a fear, furor, and fright amongst the larger population of the country which is actually alarming us for derailed social and mental health along with physical health. Pandemic and COVID-19 infections in India is showing a balancing equilibrium between the infection and recovery rate, which shows that we have to simply observe the preventive measures to combat successfully the freakiness of nCov Infection.

Dr. Afashan Muzaffar Shawl, a speaker and an expert in Improvement Performance specialist who is an alumnus of Jamia Hamdard, and at present working for King Saud Medical City, KSA- beautifully elaborated that how due to lockdown, with very limited human resource and the work from home mechanism can be utilized for optimum utilization of capabilities of front line health warriors. She shared her exceptional design which has been in practice in King Saud Medicity KSA and is being not only exponentially utilized but also helping the health professionals and other hospital and clinical staff to be restrained from exposure to the risk of infection.

Prof Suhail Fatima, Dean SUMER, and Organizing Chairman of Jamia Hamdard COVID- 19 Webinar Series conclude the webinar with very generous and encouraging words. The Programme was congenially moderated by Dr. Khursheed Ahmad. Ansari, Associate Professor of SUMER. The formal vote of thanks was proposed by Dr. Shahid S. Chaudhary, Assistant Professor from SUMER, Jamia Hamdard.

Published in: India Educationdiary

India needs one million tests daily: CCMB chief

CSIR –CCMB 16 June, 2020

HYDERABAD: India needs to ramp up Covid-19 testing by roughly 10 times — at least one million samples daily — to fight the Covid-19 pandemic.

This was stated on Monday by Rakesh Mishra, the director of the Centre for Cellular and Molecular Biology (CCMB), during a video conference with Telangana governor Tamilisai Sounderajan and others.

Between 1.15 lakh and 1.5 lakh people have been tested daily across the country between June 10 and 14, according to figures provided by the Union health ministry. "It (testing) should be more than one lakh and can be one million per day," Mishra said during the conference.

Later, in an interaction with TOI, he said that testing is essential as demonstrated in Dharavi, the Mumbai mega slum, where the infection is being controlled with increased testing.

"One million tests per day is possible but by using different technologies of testing," Mishra added. "In the RT PCR method, the result time is eight hours if everything is meticulously followed. The RNA isolation process takes a lot of time. In other methods, the isolation of RNA is not required and therefore the result time is only half that of the RT PCR test."

Several prestigious institutes, including CCMB, have developed such models. "We are seeking permission for our models. The government can even try next generation testing technologies where 10,000 tests can be done at a time, but they are useful only when a large number of tests (pooling of tests for example in a containment zone) are to be done because of the cost," the CCMB director said.

According to Mishra, the cost of tests will also come down slowly.

He also said that there are no “less dangerous” or “more dangerous” strains of the virus in the country and that the overall mortality of Indian “is much less”.

Speaking at the conference, former Union health secretary, K Sujata Rao said, “It is surprising to see that despite having the best medical and health infrastructure in the state, extensive testing wasn’t done in Telangana earlier. It is good that the state has now decided to increase testing,” she said.

Telangana does not make public the number of tests it conducts. Chief minister K Chandrasekhar Rao had, however, said on Sunday that his government would soon test 50,000 people in 30 assembly constituencies in and around Hyderabad.

Published in: Times Of India

CSIR-CIMFR's 'Controlled blasting technique' facilitating in Metro Rail Projects

CSIR –CIMFR 16 June, 2020

CSIR-Central Institute of Mining & Fuel Research, Dhanbad extended valuable contributions to the development of urban infrastructure projects by contributing technical support to the design of controlled blasting for rock excavation of Bangalore Metro-Phase-I & II and Mumbai Metro Rail Project.

CSIR-CIMFR is the blasting consultant for all the packages of Reach Two which involve underground stations. The opencut rock excavation for station boxes started in the year 2019 and it is expected to be ready by 2024, informed Dr. More Ramulu Senior Principal Scientist of CIMFR.

CIMFR also extended scientific consultancy services on controlled blasting for rock excavation of underground station box at North-South corridor at Bangalore Metro Rail Project, Phase 1, which was completed in June, 2017. The Phase-2 of Bangalore Metro Rail Project involves the construction of two new lines on standard gauge tracks and the extension of both corridors built-in Phase-I in all four directions, he said.

The stations at Bangalore Metro Phase-I include City Market, Chikpet and Majestic stations and Bangalore Metro Phase-II include Cantonment station, Vellora station and 6 stations in Mumbai include MIDC, Marol Naka, SEEPZ, Cuffe Parade, Hutatma Chowk and Church Gate) and 2 TBM Launching sites (Pali Ground Shaft and Seepz ramp) belong to package-1 and 7 of UGC Line-3, informed Ramulu. PNS

All the proposed stations are situated at densely populated places in the heart of the Mumbai city and hence rock excavation by safe blasting for station box cuttings is an essential activity. The proposed blasting zones are surrounded by very sensitive and critical structures like temples, high rise structures, old buildings etc. at a minimum distance range of 10-30m, making the blast design as the most challenging task, he said.

The rock excavation required at Bangalore Metro was 1.5 lakh cubic meters and at Mumbai Metro was 2.5 lakh cubic meters for both Package-1 and 7. The Mumbai Metro Underground Corridor project is a 33.5 km-long sub-surface transport system, connecting Colaba in South Mumbai to SEEPZ (Colaba-Bandra-SEEPZ) in suburban Andheri, which is going to be 'Game Changer' for heavily packed Mumbai traffic, said Ramulu.

"As the underground corridor is constructed at about 100 feet below the ground, it requires excavation of soil as well as the rock at all the 26 of 27 stations below the grade level. The rock is hard basaltic formation at an average depth of 3-4m at all the stations, which requires blasting for fast and bulk excavations. The opencut rock excavation for station boxes started in the year 2017 and it is still in progress," added Ramulu.

The conventional rock blasting has got the disadvantageous side effects of flyrock ejection, ground vibrations, air blasts and dust generation, which obviously creates annoyance to the local habitats. Meeting the production targets at the same time keeping the side effects under threshold limits has become a challenging task of the project, said Ramulu.

CIMFR overcome all the local resistance by adopting habitat friendly blasting techniques which ensured total control of all the environmental problems due to blasting, said Ramulu adding "And thus, CSIR-CIMFR is taking part in nation-building by its stellar technical contributions to Civil and infrastructural projects."

These projects of national repute are being carried by the Scientific team compromising of Dr. P. K. Singh, Director CIMFR, Dr. More Ramulu, Senior Principal Scientist and Project Leader, Dr. Partho B. Choudhury, Senior Principal Scientist, Abdur Rahman and Banti Kumar Dhar Technical Assistants.

Published in: Daily Pioneer

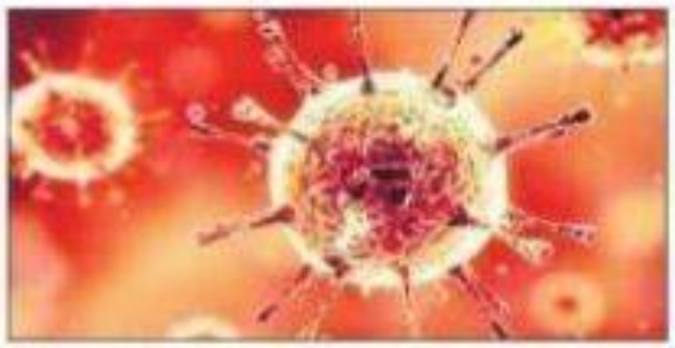
CSIR-NEERI

15 June, 2020

कोविड-19 के मरीजों की जांच व प्रबंधन में अहम साबित होगा

आर्टिफिशियल इंटेलिजेंस

- नीरी की ओर से आयोजित पैनल डिस्कशन में शामिल हुए देश-विदेश के विशेषज्ञ



भास्कर संवाददाता | नागपुर

कोविड-19 के मरीजों की जांच के लिए आर्टिफिशियल इंटेलिजेंस का उपयोग मरीजों की जल्द से जल्द पहचान में अहम भूमिका निभा सकता है। यह विचार यूके के एआईफोर लिमिटेड के सीईओ डॉ. वैभव देशपांडे ने नीरी में 'नीरी में फाइट अगेंस्ट कोविड-19 ए पीक इन टू ग्लोबल सीन' विषय पर आयोजित पैनल डिस्कशन में व्यक्त किए।

बीमारियों का पता लगाने प्रभावी सॉफ्टवेयर तैयार करें

डॉ. देशपांडे ने कोविड-19 के मरीजों की जांच में आ रहे तकनीकी बदलाव के महत्व पर प्रकाश डालते हुए कहा कि उन्होंने वैज्ञानिकों से ऐसा प्रभावी सॉफ्टवेयर तैयार करने को कहा है जिससे छाती के एक्सरे से कोविड-19 के पॉजिटिव मरीजों का पता लगाया जा सके। यह सारी, न्यूमोनिया समेत अन्य बीमारियों का पता लगाने में भी सक्षम होगा। उन्होंने कहा कि आर्टिफिशियल इंटेलीजेंस अस्पताल प्रबंधन में भी अहम भूमिका निभा सकता है। पैनल डिस्कशन सीएसआईआर के डायरेक्टर जनरल और डीएसआईआर के सचिव डॉ शेखर मांडे, जापान के सिटी काउंसिलर योगेंद्र पुराणिक, एआईफोर लिमिटेड यूके के सीईओ डॉ. वैभव देशपांडे, वीपीफार्मा चीन के डॉ. दीपक हेगडे, फ्लोरिडा स्थित यूनिवर्सिटी हॉस्पिटल की डॉ. अस्मिता गुप्ते, केईए हॉस्पिटल मुंबई की डॉ. अमिता आठवले, यूएसए स्थित पीस सीईओ डॉ. विक्रम पत्ररकिने, सीएसबाईआर पुणे के डॉ. अमोल कुलकर्णी और नीरी के डायरेक्टर डॉ. राकेश कुमार शामिल हुए।

रोकथाम के लिए पांच स्तरों पर काम

डॉ. मांडे ने बताया कि कोविड 19 के प्रसार को रोकने के लिए अपेक्षित उपाय खोजने हेतु सीएसआईआर पांच स्तर पर काम कर रहा है। इनमें डिजिटल और मॉलिक्युलर निगरानी, तीव्र और कम खर्चीला निदान (डाइइग्नोस्टिक्स), नई दवाएं व वैक्सीन, अस्पतालों के लिए सुरक्षा यंत्र, पीपीई किट, सपोर्ट सिस्टम की आपूर्ति शामिल हैं। इसके लिए निजी क्षेत्र में काम करने वाली बड़ी कंपनियां भी सहयोग कर रही हैं।

साफ-सफाई व मास्क की आदत से जापान में कम मामले

योगेंद्र पुराणिक ने बताया कि जापान में लोगों के मास्क पहनने और साफ-सफाई की आदत के कारण कोविड-19 के मामले अपेक्षाकृत कम सामने आए हैं। यहां तक कि जापान में कभी भी पूर्ण लॉकडाउन अपनाने की जरूरत नहीं पड़ी।

Published in: Dainik Bhasker

CSIR-NEERI

15 June, 2020

COVID-19: CSIR begins clinical trials for 10 drugs

- AI can be a game-changer in detecting, managing patients, say experts during an online panel discussion organised by NEERI

■ **Staff Reporter**

"COUNCIL of Scientific and Industrial Research (CSIR) has begun clinical trials for 10 drugs and has devised five verticals to work on and develop requisite science and technology-based solutions to combat COVID-19," said Dr Shekhar C Mande, Director General of CSIR and Secretary of Department of Scientific and Industrial Research.

Dr Mande was speaking during an on-line panel discussion organised by CSIR-National Environmental Engineering Research Institute (NEERI) on 'Fight Against COVID-19: A Peek into the Global Scene'.

The five verticals devised by CSIR to develop science and technology-based solutions to combat COVID-19 are digital and molecular surveillance; rapid and economical diagnostics; new drugs/ repurposing of drugs/vaccines; hospital assistive devices and personal protection equipment (PPEs); supply chain and logistics support systems.

According to Dr Mande, CSIR institutes are already working with private sector giants like Reliance for PPEs and diagnostics; Tata for hospital assistive devices; Intel and TCS for digital surveillance; Cipla for repurposed drugs; Cadila for coronavirus therapy; Bharat Biotech for inactivated vaccine development; BHEL for electrostatic spray and ventilator; BEL for thermometer and Oxygen enrichment unit, etc.

Dr Mande was the lead panelist in the discussion.

The other expert panelists included Yogendra Puranik, City Councillor, Japan; Dr Vaibhav Anand Deshpande, Chief Executive Officer, Ai4World Limited, UK; Dr Deepak Hegde, Vice-President, Pharma, China; Dr Asmita Gupte, University Hospital, Florida, USA; Dr Amita Athavale, KEM Hospital, Mumbai; Dr Vikram Pattarkine, Chief Executive Officer, Peace, USA; and Dr Amol Kulkarni, CSIR-NCL, Pune.

Other experts who participated in the on-line panel discussion stressed that Artificial Intelligence (AI) could prove to be a game-changer in detection and management of COVID-19 patients.

Shedding light on the steps taken in Japan to battle COVID-19, Puranik said that the number of COVID-19 cases in Japan remained significantly lower because the habit of wearing masks was widespread in Japan and people maintained utmost cleanliness in their routine life. He informed that the call centres were instituted in each city to take COVID-19 inquiries in different languages as a lot of foreigners lived in Japan. To support the economy, Japan never opted for complete lockdown, he added.

Dr Deshpande signified the importance of AI in rapid detection of COVID-19 patients. He urged scientists to develop an effective AI software that could find out with a chest X-ray if one

(Contd on page 2)

Published in: The Hitavada

CSIR-NEERI

15 June, 2020

व्यापार प्रतिनिधि

CSIR-NEERI में चर्चासत्र

नागपुर. सीएसआईआर-नीरी की ओर से 'कोरोना के बढ़ते मामलों के बीच इसके खिलाफ लड़ाई' विषय पर आयोजिन आनलाइन चर्चासत्र में विभिन्न देशों के विशेषज्ञों ने शिरकत की. डा. वैभव देशपांडे ने कहा कि बीमारी की बड़े पैमाने पर जांच में आर्टिफिशियल इंटेलिजेंस बड़ी भूमिका निभा सकता है. हमें ऐसे एआई साफ्टवेयर को विकसित करने का प्रयास करना चाहिए जो छाती के एक्स-रे से यह पता लगा सके कि मरीज कोरोना पॉजिटिव है या नहीं. यह न्यूमोनिया और अन्य बीमारियों का भी पता लगाए. इतना ही नहीं यह अस्पताल प्रबंधन जैसे वेंटिलेटर, बेड्स और अन्य उपकरणों की सप्लाई में भी अहम रोल निभा सकता है. डा. विक्रम पट्टरकाइन ने कहा कि लॉकडाउन के दौरान हमें पर्यावरण में अविश्वसनीय बदलाव देखने को मिले हैं. इसे बनाए रखने का प्रयास करना होगा. उन्होंने भारत में गांवों को आत्मनिर्भर बनाने की सलाह दी. अपोल कुलकर्णी ने कहा कि शोधकर्ताओं को अपनी रिसर्च में मेडिकल प्रोफेशनल्स को भी शामिल करना चाहिए. जापान के योगेंद्र पुराणिक ने बताया कि वहां लोगों में मास्क पहनने की आदत के कारण कोरोना के मामले अपेक्षाकृत कम रहे. इसके अलावा वहां लोगों को साफ-सफाई के साथ रहने की आदत है. हर शहर में कोरोना वायरस संबंधित जानकारी के लिए कॉल सेंटर बनाए गए. इसके अलावा अर्थव्यवस्था को सपोर्ट करने के लिए वहां पूरी तरह लॉकडाउन लागू नहीं किया गया. चीन से शामिल प्रतिभागी ने बताया कि वहां कोरोना के उपचार में पारंपरिक दवाओं का भी इस्तेमाल किया गया जिसके अच्छे परिणाम दिखाई दिए. इस अवसर पर सीएसआईआर के महानिदेशक डा. शेखर मांडे, दीपक हेगड़े, अश्मिता गुप्ता, अमिता आठवले सहित अन्य प्रतिनिधि उपस्थित थे.

Published in: Nava Bharat

CSIR-NEERI

15 June, 2020

स्थलांतरित मजुरांना नीरी शिकविणार सॅनिटायझेशन तंत्र

डीएलएसए, एनजीओसोबत विशेष बैठक : इंग्रजी, मराठी व हिंदी भाषेत प्रशिक्षण

लोकमत न्यूज नेटवर्क

नागपूर : स्थलांतरित मजुरांची विस्कटलेली घडी बसविण्यासाठी त्यांच्यासाठी रोजगार निर्मिती करून आर्थिक आधार देण्याचे निर्देश सर्वोच्च न्यायालयाने केंद्र व राज्य शासनाला दिले आहेत. उद्योग सुरु करता येईल पण या काळात कोरोनाचा फैलाव रोखणे अधिक महत्त्वाचे ठरणार आहे. अशावेळी नागपूर शहरात नीरीने काही डीएलएसएच्या मदतीने मजूर तसेच निराश्रित आणि विद्यार्थ्यांना कोरोनापासून बचाव करण्यासाठी सॅनिटायझेशनचे तंत्र शिकविण्यासाठी पुढाकार घेतला आहे.

राष्ट्रीय पर्यावरण अभियांत्रिकी संशोधन संस्था (नीरी), डिस्ट्रिक्ट लीगल सर्व्हिस ऑथारिटी (डीएलएसए) तसेच काही सामाजिक संस्थांच्या प्रतिनिधींची बैठक नुकतीच नीरी येथे घेण्यात आली. यावेळी डीएलएसएचे सचिव न्या. अभिजित देशमुख, नीरीचे संचालक डॉ. राकेश कुमार, जलवायू परिवर्तन विभागाचे प्रमुख व मुख्य वैज्ञानिक डॉ. जे. एस. पांडे, मुख्य वैज्ञानिक डॉ. साधना रायलू, आंतरराष्ट्रीय कौशल्य विकास सोसायटीचे अरशद तन्वीर खान, समीर पटेल, आपुलकी सामाजिक संस्थेचे अमिताभ पावडे, डॉ समीर देशपांडे, नीरीचे वरिष्ठ प्रधान वैज्ञानिक डॉ. प्रदीप साळवे आदी उपस्थित होते.

देशाची आर्थिक घडी सुधारण्यासाठी लॉकडाऊनमध्ये शिथिलता देणे अगत्याचे झाले आहे. त्यानुसार लवकरच शाळा, महाविद्यालये, उद्योग, हॉटेल्स सुरु होणार आहेत. अशावेळी त्यांच्या योग्य सॅनिटायझेशनचा प्रश्न महत्त्वाचा आहे. विशेषत: संशयित रुग्णांसाठी क्वारंटाईन सेंटर व स्थलांतरित मजुरांसाठी तात्पुरता निवारा केंद्र बनविण्यात आलेल्या महापालिका व जिल्हा परिषदेच्या शाळांचा प्रश्न महत्त्वाचा आहे. अशा ठिकाणांच्या सुरक्षेसाठी नीरी महत्त्वाची भूमिका बजावू शकते. त्यानुसार मजूर, विद्यार्थी तसेच निराश्रिताना सॅनिटायझेशन राखण्याचे प्रशिक्षण नीरी देणार आहे.

डॉ. राकेश कुमार यांनी सांगितले, एपिडेमोलॉजि ही कामाचे ज्ञान, शक्यता व आकड्यावर अवलंबून असते. अशा भीषण परिस्थितीत सॅनिटायझेशन आणि कामाच्या ठिकाणचे निर्जंतुकीकरण आवश्यक आहे. यासाठी प्रभावी धोरण आणि नियोजन गरजेचे आहे. ही आवश्यकता लक्षात घेत नीरीतर्फे इंग्लिश, मराठी आणि हिंदी अशा तिन्ही भाषेत प्रशिक्षण साहित्य बनविणार असल्याचे डॉ. कुमार यांनी स्पष्ट केले. इतर उपस्थित प्रतिनिधींनी यावेळी परिस्थिती आणि काय उपाय करता येईल, यावर आपली भूमिका मांडली.

Published in: Lokmat Marathi

CSIR-NEERI

13 June, 2020

अभ्यासक दिलीप दाभाडे यांचे मत : लालसर गुलाबी रंग झाल्याबाबत संशोधन गरजेचे; फेब्रुवारीमध्ये पाणी आटले

क्षारांच्या विघटनातून लोणार सरोवरातील पाण्याचा रंग बदलला!

लोकमत न्यूज नेटवर्क

बुलडाणा : लोणार सरोवराच्या पाण्याचा बदललेला रंग हा त्यातील क्षारांच्या विघटनातून बदलला असावा, असे मत वाशिम येथील आरे महाविद्यालयात प्राणीशास्त्र विभागाचे प्रमुख तथा लोणार सरोवराचे अभ्यासक प्रा. डॉ. दिलीप दाभाडे यांनी 'लोकमत'शी बोलताना व्यक्त केले.

गत २५ वर्षांपासून ते लोणार सरोवराचा अभ्यास करत असून, उन्हाळ्यात लोणार सरोवरातील पाणी आटल्यामुळे त्यात क्षारांचे प्रमाण वाढले आहे. या क्षारांचे विघटन होऊन असा लालसर गुलाबी रंग दिसत असावा, असे ते म्हणाले. सूर्यप्रकाश सात रंगांचा बनला आहे. तो वस्तूवर पडल्यास त्यातील सहा रंग शोषल्या जातात व एकच रंग रिफ्लेक्ट होतो. त्याप्रमाणेच क्षारांच्या या विघटनातून सूर्यप्रकाशाच्या पडणाऱ्या किरणांपैकी हा विशिष्ट रंगच रिफ्लेक्ट होत असल्याने येथील पाण्याचा रंग बदलला असावा, असे त्यांनी सांगितले.

साधारणत: रासायनिक किंवा भौतिक प्रक्रिया होऊन असा रंग बदल होऊ शकतो. पण एकंदरीत स्थिती पाहता रंग बदलाचा झालेला हा प्रकार भौतिक प्रक्रिया अर्थात क्षाराचे प्रमाण वाढल्यामुळे झाला असावा, असे ते म्हणाले. फेब्रुवारीमध्ये सरोवराचे पाणी मोठ्या प्रमाणावर आटल्याचेही सरोवरावर अभ्यास करणारे डॉ. महेश तांदळे यांनी सांगितले. डॉ. दाभाडे यांच्या मार्गदर्शनातच त्यांनी लोणार सरोवराचा अभ्यास केला आहे. प्लॅनटॉन डायव्हरसिटी ॲन्ड इक्रोफिकेशन स्टेटर्स ऑफ लोणार क्रिएटर इंडिया हा विषय घेऊन त्यांनी पीएचडी केली आहे.

पाण्याचे नमुने तपासणार - राठोड

पाण्याचे शास्त्रीय पद्धतीने नमुने घेतले असून, ते संशोधनासाठी नागपूर येथील राष्ट्रीय पर्यावरण व अभियांत्रिकी संशोधन संस्था (नीरी) तसेच पुणे येथील आगरकर संशोधन संस्थेकडे पाठविल्याची माहिती वनमंत्री संजय राठोड यांनी यवतमाळ येथे दिली.

Published in: Lokmat Marathi

CSIR-NEERI

13 June, 2020

What? Where? How?

Fight Against COVID-19
A Peek into the Global Scene

Join us on the panel discussion on 13th June 2020 to hear experts on :

What are the challenges we are dealing with?

Where is this pandemic leading us?

How has the international community geared up to fight this battle!

Live on CSIR-NEERI Facebook Page

https://www.facebook.com/dir.neeri

Language: Marathi

Time: 4-5.30 pm, IST

Lead Panellist:

Dr Shekhar C Mande, DG-CSIR & Secretary DSIR

Panellists:

- **Shri Yogendra Puranik**, City Councillor, Japan
- **Dr. Vaibhav Anand Deshpande**, CEO, Ai4World Limited,UK
- **Dr Deepak Hegde**, VP, EOC Pharma, China
- **Dr. Asmita Gupte**, MD, Infectious Diseases, Florida, USA
- **Dr Amita Athavale**, MD, KEM Hospital, Mumbai
- **Dr Vikram Pattarkine**, CEO, Peace USA
- **Dr Amol Kulkarni**, CSIR-NCL- Pune

Moderator: **Dr Rajesh Biniwale**, CSIR-NEERI

Scanned with CamScanner

Published in: Times Of India

CSIR-NEERI

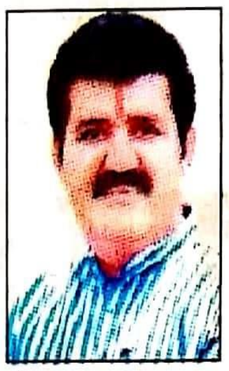
13 June, 2020

लोणार सरोवराच्या पाण्याचे नमुने तपासणार

◆ यवतमाळ, १२ जून

बुलडाणा जिल्ह्यातील लोणार सरोवर व अभयारण्य वन विभागाच्या अखत्यारित आहे. ९ जून रोजी लोणार सरोवराचे पाणी गुलाबी रंगाचे झाल्याची घटना घडली. त्या अनुषंगाने या पाण्याचे शास्त्रीय पद्धतीने नमुने घेण्यात आले आहेत. तसेच हे नमुने संशोधनाकरिता नागपूर येथील राष्ट्रीय पर्यावरण व अभियांत्रिकी संशोधन संस्था (नीरी) तसेच पुणे येथील आगरकर संशोधन संस्थेकडे पाठविण्यात आल्याची माहिती राज्याचे वनमंत्री संजय राठोड यांनी दिली.

लोणार सरोवर हे उल्कापाताने तयार झालेले असून जगातील ते वैशिष्ट्यपूर्ण सरोवर आहे. यातील क्षाराचे प्रमाण जास्त आहे. सरोवरातील पाण्यात विशिष्ट प्रकाराच्या हॅलो बॅक्टेरिया व शेवाळाच्या संयोगातून अशा प्रकारचे गुलाबी रंगाचे पाणी होत असावे, असे काही तज्ञांचे मत आहे. तर काही तज्ञांनी डुनलेलिया अल्गी व हॅलो बॅक्टेरिया या



संजय राठोड

जीवाणूंमुळे बिटा कॅरोटिन रंगद्रव्य निर्माण झाल्याने लोणार सरोवराच्या पाण्याचा रंग गुलाबी होत असल्याचे मत व्यक्त केले.

इराणमधील क्षारयुक्त सरोवरामध्ये अशाप्रकारे रंगात बदल झाल्याच्या घटना यापूर्वी झालेल्या आहेत. या पृष्ठभूमीवर चौकशी करण्यात येत असून, अन्य कुठल्याही कृत्रिम घटकामुळे पाण्याचा रंग बदललेला नाही, अशी माहिती वनमंत्री राठोड यांनी दिली.

अकोला येथील वन्यजीव विभागाने लोणार सरोवराच्या पाण्याचे शास्त्रीय पद्धतीने नमुने घेण्यासाठी शंकरलाल खंडेलवाल महाविद्यालयाचे डॉ. मिलिंद शिरभाते यांना लोणार येथे पाठविले होते. त्यांनी गुलाबी पाणी व मातीचे नमुने गोळा करून वनविभागाकडे सादर केले आहेत. ◀(तभा वृत्तसेवा)

Scanned with CamScanner

Published in: Tarun Bharat

CSIR-CECRI

12 June, 2020

New technology to generate sodium hypochlorite

STAFF REPORTER

KARAIKUDI

CSIR-Central Electro Chemical Research Institute, Karaikudi, has developed a zero-emission and cost-effective electrochemical technology by which sodium hypochlorite can be generated by directly oxidising sodium chloride (salt water) solution.

Sodium hypochlorite is an effective disinfectant against bacteria, viruses, fungi and mycobacterium.

Any micro, small and medium enterprise can use this technology to generate large quantities of disinfectants by investing between ₹3 lakh and ₹ 5 lakh. The demonstration and transfer of technology can be made available for any industrial client, a press release said.

Published in: The Hindu

Please Follow/Subscribe CSIR Social Media Handles

CSIR INDIA

CSIR_IND

CSIR India