

# CSIR IN MEDIA



CSIR

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## ‘Indian scientific understanding revolved around humanity’

CSIR-CCMB, IICT, NGRI

05<sup>th</sup> August, 2022

**Former DG of CSIR waxes eloquent on scientists’ role in freedom struggle**

Indian ancient wisdom and scientific understanding revolved around “humanity”, and those are the basis for advancement of modern science, said former CSIR director-general Shekhar C. Mande on Friday.



Delivering a lecture on “Role of scientists and institutions in India’s freedom struggle” organised by the Telangana Unit of Vignana Bharati (VIBHA) and the three CSIR labs of CCMB, IICT, and NGRI to commemorate the ongoing ‘Azadi ka Amrit Mahotsav’, he talked about the myths projected by the Western world about Indians’ capability of understanding modern science.

Citing examples, Mr. Mande explained how advanced science was prevalent in ancient Indian civilisation in the fields of metallurgy and medicine. He elaborated how premier scientific institutions in India (such as the Indian Institute of Science, Bangalore) had been conceptualised and developed with the visionary foresight of industrial and spiritual leaders like J.R.D. Tata and Swami Vivekananda at that time, considering the developing, vibrant contemporary workforce requirement.

He also recollected how the Indian science community rose to the occasion during the COVID-19 pandemic, and how CSIR could help the countrymen in providing essential components for the preparation of vaccines, development of ventilators, oxygen supplies, and even construction of new hospitals in a record time of a few days to a week.





CSIR-NGRI director V.M. Tiwari, CCMB director Vinay Nandikoori and former CCMB director Ch. Mohan Rao and scientists from three institutes participated in the meeting, said a press release.



## CSIO transfers technology to private industry

CSIR-CSIO

05<sup>th</sup> August, 2022

The technology for a “Portable Handheld Electrostatic Disinfection Device” developed by the Central Scientific Instruments Organisation (CSIO) here was today transferred to a Nagpur-based private firm for commercial production.

The technology works on two fronts. First, highly charged droplets of fluid kill the virus in the air, and secondly, the charged droplets reach the hidden areas of any target where the viruses may be present. The device is handheld and portable, which can be used by households, shopkeepers and small business set-ups.

“Keeping in mind the portability of the disinfection device and the demand by users, the CSIO has developed an advanced and portable electrostatic disinfection device to combat pathogenic infections, which is the most powerful tool and technique to disinfect and sanitise public places,” said Prof S Anantha Ramakrishna, Director, CSIO.

According to Dr Manoj K Patel, Principal Scientist, the project is an innovative concept of electrostatic spraying for disinfection and sanitisation of public places, especially hospitals, poultry, trains and buses, airports, airplanes, offices, classrooms and hotels. It contributes to healthy lifestyle and healthcare of the masses.” He also emphasised and urged the industry to collaborate with the CSIR-CSIO for the benefit of society and the nation.

Meanwhile, the CSIO today also signed a memorandum of understanding with the Central Pulp and Paper Research Institute for collaborative research in the domain of water and energy conservation and intelligent sensors and systems related to process and quality controls, waster treatment and monitoring of air emissions.

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[Tribune India](https://tribuneindia.com)



## National Timekeeper Demands The Necessity Of Two Time Zones In India! Is That Possible? All You Need To Know

CSIR-NPL

04<sup>th</sup> August, 2022

Two time zones in India – Yes, you read it right! It's not the first time that the demand of two time zones in India has been raised. The CSIR-NPL (Council of Scientific & Industrial Research National Physical Laboratory), which maintains Indian Standard Time (IST), has published a research article, describing the importance of two time zones in the country.

As suggested by India's national timekeeper, there can be two time zones in the country, IST-I for most of the country, while IST- II, with a difference of an hour, for the Northeastern states. As per the article, IST-I would cover the regions between longitudes  $68^{\circ}7'E$  and  $89^{\circ}52'E$ , on the other hand, IST-II would cover the regions between  $89^{\circ}52'E$  and  $97^{\circ}25'E$ .

### India used to have two time zones during the British Raj!

Many people don't know or remember that earlier, India used to have two time zones – the Bombay Time and Calcutta Time, introduced in 1884 by the Britishers. Indian Standard Time is a chronology inherited from the British. Our country has had a single IST running through the center of the country since 1906. Before that, we used to have two time zones.

### What Is The Reason Behind This Demand?

The Northeastern regions of India have been demanding two time zones, complaining about how the single time zone affects them. The federal planning commission, in 2006, suggested the then UPA government to introduce two time zones in the country. Even the NPL (National Physical Laboratory) has backed the demand of a separate time zone for the Northeastern states.

### What would be the possible advantages of having two time zones?

The biological clock controlling human productivity and efficiency is linked with the daily cycles of light and dark. Many people in the country, are living in the time zone that don't



correspond to their preferred diurnal cycle. So, if two time zones are introduced, people would be able to work and plan better as per their natural cycles, resulting in an economic benefit.

Due to the sun rising as early as 4 AM during summers, the offices open at 10 AM, due to which the Northeast states lose valuable daylight that could be productively used. The article published by CSIR-NPL, India's national timekeeper, says that the country would save 20 million kWh of energy per year if two time zones are followed.

Geographically, we are the second-largest country to not have numerous time zones. From 97 degrees 25 minutes East in Arunachal to 68 degrees 7 minutes East, India expands its boundaries. Nearly 30 degrees of longitude in the direction of Gujarat is enough to support the two time zones.

From the perspective of the body's circadian rhythm, the current IST is highly suitable for Kanyakumari, Kavaratti, and Ghuar Mota; tolerable for Alipurduar, Kolkata, Gangtok, Mirzapur, and Gilgitum, but unfavourable for the people living in Port Blair and Dong.

### **The arguments against having two time zones in India:**

While the CSIR-NPL supports the implementation of two time zones in the country, there is another side of the coin which puts light on its complications like mismatch in the office timings, frequent railway accidents as the functioning of not just the Indian railway, but the railway of each and every country, is based on timings.

Not just the making of the dividing line of two different time zones would be a complicated, confusing and difficult task, the two time zones may even have adverse political effects as we are already blamed of being divided on the basis of caste, religion, culture, the new division on the basis of time zones would add more into it.

### **The Central government's stand on two time zones:**

Despite this newly sparked argument, the Central government has clarified that it has made



no decision on the implementation of two time zones in the country. In response to BJP MP Varun Gandhi's question in the Lok Sabha, union health and family welfare minister Dr. Harshvardhan said, "The government, in 2022, had set up a high-level committee that had not recommended the implementation of two-time zones in India due to the complexities involved in the process."



# इंस्टीट्यूट ऑफ मिनरल्स एंड मैटेरियल्स टेक्नोलॉजी कैंपस में एफआईएमटीए का उद्घाटन चार केंद्रित विषयों के सभी पहलुओं को शामिल किया जाएगा

नवभारत ब्यूरो। भुवनेश्वर।  
इंस्टीट्यूट ऑफ मिनरल्स एंड  
मैटेरियल्स टेक्नोलॉजी कैंपस में  
तकनीकी अनुप्रयोगों के लिए सामग्री  
में फ्रंटियर्स पर तीन दिवसीय  
अंतर्राष्ट्रीय सम्मेलन  
(एफआईएमटीए-2022) का  
उद्घाटन किया गया। आयोजकों ने  
कहा सीएसआईआर-आईएमएमटी  
3-5 अगस्त के दौरान अंतर्राष्ट्रीय  
सम्मेलन एफआईएमटीए -2022  
के लिए वैज्ञानिकों, शिक्षाविदों और  
छात्रों के सबसे बड़े समूह का  
स्वागत करता है। एफआईएमटीए  
विभिन्न क्षेत्रों में सामग्री के  
अनुप्रयोगों पर एक अंतर्राष्ट्रीय  
सम्मेलन है। एफआईएमटीए को  
पहली बार 2020 में एक  
अंतरराष्ट्रीय वेबिनार के रूप में  
आयोजित किया गया था। तब से,  
एफआईएमटीए शोधकर्ताओं,  
डेवलपर्स और विशेषज्ञों के लिए  
सामग्री और उनके संभावित  
अनुप्रयोगों के क्षेत्र में नए विकास



और परिणामों पर चर्चा करने के  
लिए प्रमुख बैठक स्थल रहा है। यह  
सम्मेलन का तीसरा मौका है जब  
आईएमएमटी में और पहली बार  
किसी सभा में आयोजित किया गया  
था। सम्मेलन में चार केंद्रित विषयों  
कार्यात्मक नैनोमैटेरियल्स, उन्नत  
इलेक्ट्रॉनिक सामग्री, ऊर्जा और  
उपकरणों के लिए सामग्री और जैव  
सामग्री के सभी पहलुओं को  
शामिल किया जाएगा। सम्मेलन  
अत्यधिक अनुभवी वक्ताओं द्वारा  
तकनीकी अनुप्रयोगों के लिए सामग्री  
अनुसंधान में की गई प्रगति के  
आधार पर नया ज्ञान प्राप्त करने के  
लिए एक महत्वपूर्ण मंच प्रदान  
करेगा। भारत, संयुक्त राज्य  
अमेरिका, यूके, बेल्जियम, इजराइल

और ताइवान सहित दुनिया भर में  
प्रसिद्ध वक्ताओं का सौभाग्य प्राप्त  
है। सीएसआईआर आईएमएमटी के  
निदेशक, प्रो सुधासत्व बसु ने  
उद्घाटन सत्र में स्वागत भाषण  
दिया। उन्होंने इस बात पर प्रकाश  
डाला कि सीएसआईआर  
आईएमएमटी मुख्य रूप से खनिज,  
सामग्री और टिकाऊ प्रौद्योगिकी के  
क्षेत्र में काम कर रहा है। उन्होंने यह  
भी उल्लेख किया कि  
एफआईएमटीए की शुरुआत  
लगभग 11 नए युवा वैज्ञानिकों द्वारा  
की गई है, जो तीन साल पहले इस  
संस्थान में शामिल हुए थे, जिसे  
सीएसआईआर आईएमएमटी के  
वरिष्ठ वैज्ञानिकों और स्टाफ  
सदस्यों द्वारा समर्थित किया गया था।



## Dr Mazumdar of CSIR-NIO receives National Award in Ocean Sciences

CSIR-NIO

03<sup>rd</sup> August, 2022

PANJIM: Dr Aninda Mazumdar, working as a Senior Principal Scientist at the CSIR-National Institute of Oceanography (NIO), Dona Paula has been honoured with the National Award in Ocean Sciences for the year 2022.

Dr Mazumdar has made a pioneering contribution to India's gas hydrate exploration programme. He has made fundamental contributions to discovering methane cold seep systems in Krishna-Godavari and Cauvery-Mannar basins. These discoveries have put the Krishna-Godavari and Mannar basins in the global cold seep map.

Dr Muzumdar has also contributed commendably to understanding Fe-S-C biogeochemistry of modern and ancient marine sediments/ sedimentary rocks. In recognition of his outstanding contributions to Ocean Sciences, the Ministry of Earth Sciences has honoured Dr Mazumdar with the National Award in Ocean Sciences for the year 2022.

Dr Mazumdar has over 50 publications in reputed journals.





## Kerala's first two monkeypox cases not linked to Europe outbreak

CSIR-IGIB

03<sup>rd</sup> August, 2022

The genome sequencing of the first two cases from Kerala suggests they belong to the A.2 cluster which has been reported in the US, Thailand and now in Kerala.

With confirmed monkeypox cases in India rising to eight including one death from Kerala, scientists and researchers are trying to understand more about the spread of the

disease. Genome sequencing of the first two cases from Kerala suggests that they are not linked to the monkeypox outbreak in Europe. The first two monkeypox cases in Kerala had a travel history to the Gulf. In an email interview to TNM, Dr Vinod Scaria, a senior scientist at the Delhi-based Institute of Genomics and Integrative Biology (CSIR-IGIB), said, "The two genomes from Kerala suggest that they belong to a distinctly different lineage (A.2) compared to the B.1 lineage linked to the European superspreader events and outbreak of monkeypox in 2022." The genome sequencing was performed by the National Institute of Virology (NIV), Pune, and deposited in the GISAID, a global database.



The findings are significant. While there have been cases of monkeypox reported in several African countries since 1970, the first case of the ongoing outbreak of monkeypox was detected in May this year in the United Kingdom in an individual with travel history to Nigeria. Since then, monkeypox has spread to many countries, with superspreader events in Spain and Belgium.

However, in June this year, the United States's Centers for Disease Control and Prevention (CDC)'s genetic sequencing data suggested that there are two distinct monkeypox outbreaks



underway outside Africa, reported Stat. While the genomes from the monkeypox cases in Europe and many parts of the world belong to the B.1 lineage, a small cluster – A.2 – has been reported in the US, Thailand and now in Kerala. Stat reported that three out of the ten viruses that CDC had sequenced were not only different from the European lineage, but also that the three individuals had contracted monkeypox in three different geographical areas — Nigeria, West Africa, and the Middle East or East Africa.

Explaining the significance of the A.2 lineage, Dr Vinod Scaria had pointed out in a tweet, “The earliest sample in the cluster from the USA is indeed from 2021, suggesting the virus has been in circulation for quite some time, and earlier than the European events.” “This would suggest this lineage has been spreading through human-human contact across different countries. The heightened awareness and surveillance and testing is possibly the reason for a higher number of cases being reported. More genomes would be required to draw broader conclusions,” Dr Scaria told TNM.

Out of the eight monkeypox cases detected in India, three do not have a history of foreign travel including the first case reported in Delhi. Dr Vinod Scaria said that genomes from the first case are not available in the public domain yet. “We would possibly need more centres to perform genome sequencing and possibly sequence every single case, since the sequences are invaluable in understanding epidemiology and evolution.”

As far as what India needs to do to contain the spread of monkeypox in the country, Dr Scaria said, “Effective and unambiguous public communication and increasing awareness among public as well as clinicians not to stigmatise the disease, and making people aware on how to protect themselves.” He called for wider availability of testing, especially in Kerala given that it has significant infrastructure to perform RT-PCR testing in every district. He also said more genomes for genetic epidemiology are needed because genome sequences are invaluable. “A programme for sentinel surveillance of travellers is important — at least in places like Kerala which have a significantly large expatriate population,” Dr Scaria said.

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[The News Minute](#)



## 2,000 farmer clusters formed under Aroma Mission

CSIR-CIMAP

03<sup>rd</sup> August, 2022

“About 2,000 farmer clusters have been formed under the Aroma Mission run by CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP) and associated laboratories. The farmers of these clusters have been extensively linked with the cultivation of aromatic crops, as a result of which, today, India is moving towards exporting, and becoming self-sufficient in the production of oil of lemongrass and palmarosa,” said Prabodh Kumar Trivedi, director, CIMAP.



Trivedi was speaking at a three-day training programme for farmers on advanced aromatic and medicinal plants starting from Monday in collaboration with SIDBI at CSIR-Lucknow campus. Sixty-four participants from 44 districts of 10 states of the country participated in the programme.

“This training will help farmers get more yield, and the raw material can be made available to the industries. In view of the world-demand, there is a need to promote the cultivation of aromatic plants,” he said.

“For the next two days, CIMAP scientists will discuss in detail the cultivation of economically important medicinal and aromatic plants, as well as processing and storage techniques, so that farmers’ production can be of international quality and farmers can receive a good price. These medicinal and aromatic crops include lemongrass, palmarosa, geranium, basil, and others. Their oils are currently in high demand on the global market,” the director said.



The participants were also made to visit the field and were acquainted with various plants by the scientists. The scientists will also train participants in advanced agricultural technology of production of rose grass, lemongrass, Mentha, geranium and poppy seeds, Tulsi, Java grass etc.



## AVRA Technology Award – 2021 presented to Dr Krishna Ella

CSIR-IICT

02<sup>nd</sup> August, 2022

The AVRA Technology Award – 2021 was presented to Dr Krishna M Ella, Chairman, Bharat Biotech, at CSIR-Indian Institute of Chemical Technology, Hyderabad, on Monday. Dr Ella while delivering the award lecture, said there was a requirement to create an ecosystem where India should innovate and not copy from other countries and encourage start-ups. He also recalled the challenges and tremendous efforts to produce India's indigenous vaccine, Covaxin.



Dr D Srinivasa Reddy, director, CSIR-IICT, said in his welcome address that CSIR-IICT played a significant role in the progress of Covaxin with the development of a crucial adjuvant for the vaccine. He said two Padma Bhushan Awardees – Dr AV Rama Rao and Dr Krishna M Ella, the awardee, have excelled in achieving the same goal, providing low cost and indigenous healthcare solutions in our country and world over. The award is instituted in honour of Dr AV Rama Rao, former director of CSIR-IICT, and Founder of AVRA Laboratories, while CSIR-IICT sponsored the award. The award carries a cash award of Rs one lakh and a memento. It is given to an eminent scientist/technologist who has contributed significantly to the national objectives in the domain of science and technology. Some of the earlier award recipients include Prof. Sandeep Verma, Secretary, Science, and Engineering Research Board, Department of Science and Technology, Prof UR Rao, former chairman of ISRO, Prof MS Swaminathan, Prof MM Sharma, and Dr Sam Pitroda.



## Half-day symposium organised by NCL to observe World Microbiome Day

CSIR-NCL

02<sup>nd</sup> August, 2022

PUNE: CSIR-National Chemical Laboratory (CSIR-NCL), Pune, Association of Microbiologists of India (AMI), Pune Chapter, and Vidnyan Bharati (VIBHA), Paschim Maharashtra Prant, jointly organized a half-day symposium to observe 'World Microbiome Day'.

Dr Yogesh Shouche, professor, School of Arts and Sciences, Azim Premji University, Bengaluru, and Honorary Scientist, National Centre for Cell Science (NCCS), Pune, delivered the inaugural address and plenary session on 'Microbiome and emerging career opportunities.'

"Soil, plants, and humans contain bacteria, fungi, viruses, and other microorganisms. They have specific effects on living individuals and their health, environment, and energy. Every living individual has his/her own microbiome," he said.

He also talked about the Human Genome Project with significant human health applications, gut microbes and their actions on the human body, and athletic microbiome. He also spoke about microbiome-based therapies like microbial consortia, genetically engineered microbes, and bioactive molecules.

Panel discussion majorly emphasized on research on microbiome, personalized medicines and their effects in India, healthy diet, microbiome based products, microbiome education progress in India. Many students, faculties, and dignitaries from various colleges participated in the program.



## Researchers identify fungus for pyrene remediation

CSIR-IIP

01<sup>st</sup> August, 2022

Researchers at the Council of Scientific & Industrial Research-Indian Institute of Petroleum (CSIR-IIP), Dehradun, have identified a fungus capable of removing toxic, recalcitrant, and carcinogenic polycyclic aromatic hydrocarbons (PAHs) from the environment.



The rapid pace of economic development and industrialisation has resulted in the release of several PAHs into the environment. The PAHs are ubiquitous environmental pollutants originating from multiple sources, including combustion of petrogenic fossil fuels, and incomplete incineration of municipal wastes and biomass.

Pyrene, possessing four benzene rings, belongs to the highly toxic class of PAHs, with carcinogenic and mutagenic properties. It gets lodged into the environmental matrices like soil, water and atmosphere, resulting in widespread environmental pollution, necessitating adequate remediation of contaminated environmental matrices.

The researchers at IIP identified a white-rot fungus *Trametes maxima* IIPLC-32 which has the potential to cause microbial degradation of pyrene. According to researchers, growing on dead plants, this fungus causes pyrene degradation using special enzymes.

The researchers used gas chromatographic-mass spectrometer and serotome analysis for their study. Gas chromatographic-mass spectrometric identification of prominent metabolites helped determine the pyrene degradation pathway. As found by researchers, the pyrene



concentration decreased by 79.8 percent, 65.37 percent and 56.37 percent within 16 days from the initial levels of 10 mg per litre, 25 mg per litre and 50 mg per litre, respectively. The serotome analysis revealed the presence of 81 extracellular proteins. Knowledge of serotome analysis in pyrene degradation helped understand the degradation mechanism of pyrene.

“The rapid pace of economic development and industrialisation has resulted in an increased level of pollution in the environment. To combat this pollution, resources are already present in the environment, which must be appropriately tapped by us,” said Anjan Ray, Director, CSIR-IIP.

It may be noted that among the pollutants found in the soil, many PAHs are also present. The fungus identified by the researchers can cause microbial degradation, thereby improving the soil quality. “This fungus acts to decrease the pollution level of the soil,” says Pankaj Kanaujia, a member of the research team.

As revealed by the study, the fungus *T.maxima* may prove to be helpful in the remediation of especially pyrene. The recommendation from the study is that *T.maxima* IIP LC-32 can be tried in the future for the bioremediation of PAH-contaminated aquatic environments.

The study has been published in the peer-reviewed Environmental Science and Pollution Research journal. Besides Anjan Ray, other research team members included Arfin Imam, Sunil Kumar Suman, Bhanu Prasad Vempatapa, Deependra Tripathi and Pankaj K. Kanaujia.



## भवन निर्माताओं को कीट प्रबंधन के लिए प्रोत्साहित करना चुनौती

सीबीआरआई में स्ट्रक्चरल पेस्ट मैनेजमेंट पर प्रशिक्षण कार्यक्रम का शुभारम्भ

रुड़की, 1 अगस्त (अनिल): सीएसआईआर-केंद्रीय भवन अनुसंधान संस्थान में 'स्ट्रक्चरल पेस्ट मैनेजमेंट' विषय पर छह दिवसीय प्रशिक्षण कार्यक्रम का शुभारंभ संस्थान के निदेशक डॉ. अंजन रे ने किया। उन्होंने कहा कि सभी प्रकार के भवन निर्माताओं को कीट प्रबंधन के लिए प्रोत्साहित करना एक चुनौती है। कहा कि आवश्यकता अनुरूप सही प्रकार के कीटनाशी का सही मात्रा में उपयोग करना पर्यावरण को दूषित से अत्यंत महत्वपूर्ण है।

कार्यक्रम में देश के विभिन्न शहरों जैसे चेन्नई, कोलकाता, दिल्ली, बड़ोदरा, गुरुग्राम आदि से आए 32 पेस्ट कंट्रोल व्यवसायी प्रशिक्षण ले रहे हैं। प्रशिक्षण कार्यक्रम के नोडल अधिकारी डॉ. आर. धर्मराजू ने विनाशक जीवों से जुड़े आर्थिक पहलुओं पर प्रकाश डाला। संयोजक डॉ. बीएस रावत ने बताया कि देश में पेस्ट कंट्रोल का व्यवसाय



कार्यक्रम में अपना संबोधन देते हुए मुख्य अतिथि।

अव्यवस्थित रूप से चल रहा है। व्यवसाय को इस प्रकार के प्रशिक्षण कार्यक्रम और प्रबंधन की जानकारी देकर व्यवस्थित करना हमारा उद्देश्य है। इस कार्यक्रम में विभिन्न विषयों के विशेषज्ञ व्याख्यान देंगे। कार्यक्रम में भवनों में पाए जाने वाले विनाशक जीवों जैसे दीमक, कॉकरोच, मक्खी, मच्छर, खटमल, चूहे आदि दृश्य और अदृश्य विनाशक जीवों

को बायोइकोलॉजी और प्रबंधन पर व्याख्यान होंगे। इन विनाशक जीवों से बचने के तरीकों पर विस्तार से चर्चा की जाएगी। इस दौरान डॉ. अशोक कुमार, डॉ. शांतनु सरकार, डॉ. डीपी कानूनगो, डॉ. प्रकाश चंद धर्पालियाल, डॉ. हेमलता जायसवाल, सुनीता कुमारी, मेहर सिंह, हरीश कुमार, सक्षम भारद्वाज आदि मौजूद रहे।





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