

# CSIR IN MEDIA



सीएसआईआर

CSIR

भारत का नवाचार इंजन

*The Innovation Engine of India*

## NEWS BULLETIN

### 06 TO 10 DECEMBER 2023





## India to be leader in Bioeconomy by leveraging Global Biofuels Alliance – Jim Lane

CSIR-NCL

09<sup>th</sup> December , 2023

‘Unleashing the Power of Bioeconomy’, a national conference jointly organized by National Chemical Laboratory (NCL) and Praj Industries was held in the city recently. Globally renowned thought leader Jim Lane, Founder of US based Biofuel Digest was the chief Guest of the conference. Eminent speakers like Dr. Ashish Lele, Director of NCL, Dr. Pramod Chaudhari, Founder Chairman of Praj Industries along with Royal Society Fellow and



Senior Scientist Dr. Raghunath Mashelkar brought to the fore social, environmental and energy aspects of Bioeconomy. Dr. Suresh Gosavi, Vice-Chancellor of Savitribai Phule Pune University; Mohan Vani of National Center for Cell Science (NCCS), Ajit Kembhavi, of Pune Knowledge Cluster, Prof. Sunil Bhagwat, of IISER, Pune and Dr. Ravindra Utgikar of Praj Industries were among the dignitaries who graced the conference by their presence.

During his keynote on ‘Bioeconomy Global Perspective’ Jim Lane said, “With the recent launch of Global Biofuel Alliance (GBA) during its presidency, India has a unique opportunity to become a global leader in BioEconomy. Blessed with ample Sun, land and agriculture India has emerged as a powerhouse of Bioenergy to facilitate energy transition. The availability of advanced technologies and progressive policies aid this opportunity further”

On the backdrop of ongoing COP28 Summit in UAE he opined that the climate crisis is worsening by the day and mainstreaming bio-economy has become an imperative. “We must aim at becoming carbon neutral by harnessing biofuels and biochemicals that help curb GHG emissions. The ‘one and done’ approach to hydrocarbons has to be replaced by the circular



economy of ‘many turns of one molecule’, Lane added. Stating that the current government was making progressive efforts by focusing on the National Biofuel Policy, Dr. Mashelkar said, “It is time both policy and technology go hand in hand when it comes to Bioeconomy. Harnessing clean and green technologies will help India achieve Nationally Determined Contributions (NDCs). We must leverage exponential technology advancements to maximise yields and productivity while conserving the environment.”

Dr. Pramod Chaudhari pointed out that a holistic and all inclusive approach would be required to accelerate growth of bio-economy. He stated that India should consider judicious use of GM crops (Genetically Modified Crops), an issue that remains unaddressed so far., “ Biofuels is an idea who’s time has come and Global Biofuel Alliance is a watershed moment especially for global south who stand to immense benefit by leveraging captive biological resources” Dr Chaudhari added. Concluding his speech he expressed strong conviction that Pune has all necessary resources, infrastructure and industry ecosystem to emerge as the innovation hub for biotechnology.

Dr. Ashish Lele said, “ Declining air quality index way below acceptable limits is a matter of grave concern and a definitive health hazard. We must move away from the traditional practice of stubble burning. Instead of burning millions tons of biomass every year, the need of the hour is to utilise it for production of biofuels and renewable chemicals and materials on a waste to wealth principle. He also said,” Pune has one of the best facilities for research and development in Bioeconomy. We are happy that the city has many educational and business institutions that complement the thriving ecosystem for start-ups.”

A panel discussion on ‘Importance of bio manufacturing in building a bio-economy’ was organized in the second half of the conference. Dr. Asha Kembhavi, Bio Technologist, and Dr. Prashant Dhakefalkar, Director of Agharkar Research Institute participated in this while the panel discussion was ably moderated by Dr. Anand Ghosalkar.



## Simple, effective machineries for milling catch attention

### CSIR-CFTRI

09<sup>th</sup> December , 2023

A combined approach to tackle and solve various issues in millet processing has led to designing milling equipment for millets and also addressing poor shelf-life of the millet products with the CSIR-CFTRI bringing out various processes and products suitable for small and medium scale enterprises as promoting millets is said to be a “turning point” for the country’s nutritional programmes. Millets are described as nutra cereals because of their nutritional value, nutraceutical, and health beneficial properties, according to the CFTRI.



Many such products are on display at the ongoing expo at the ninth International Food Convention (IFCoN-2023) being held on the campus of CSIR-CFTRI here.

What has caught the attention is the pedal-operated millet mill, which has received appreciation for its novelty at the World Food Expo that was held in New Delhi last month. It’s demonstrated at the IFCoN-2023 expo here.

CSIR-CFTRI had also displayed machinery such as spouted bed roaster, poori forming machine, ragi mudde making machine, jowar roti making machine, tiny rice mill, bio-fumigant system, etc at the Delhi Expo besides various millet and other products and innovative technologies for which the Mysuru food lab got a pat on its back. The pedal operated millet mill is ideally suited for small scale processing, especially farmers with 10-15 kgh capacity. What is unique is that it does not require electricity for its operation and it’s easy to operate with only pedalling required.



According to scientists who developed the machinery, the maximum dehulling percentage and dehulling efficiency for little millet is around 90 percent and 75 percent respectively. Efficiency depends on the type of millet handled and can be used for all small millets, paddy and oil seeds. The system provides 88 to 97 percent of husk separation, the institute said.

The non-availability of small scale mills for farmers encouraged the CSIR-CFTRI to come out with the machinery that reduces the drudgery of milling. Being manually operated, it's suitable for rural areas as small millets are the staple food for millions and health conscious people prefer the commodity because of the nutritive value. Small millets include foxtail millet, kodo millet, little millet, banyard millet, and proso millet. The unit can be easily assembled as all the components are available locally, a note from the CFTRI said.

This is one of the technologies developed under the project funded by the DSIR, Ministry of Science and Technology.



## COVID-19 led to reduction of microplastics in Goa's Mandovi, Zuari estuaries: Research paper

CSIR-NIO

09<sup>th</sup> December, 2023

The concentration of microplastics in surface water and sediments in Mandovi and Zuari estuaries in Goa declined significantly during the COVID-19 pandemic, which highlights the potential benefits of sustainable consumption and production patterns, a research paper has said.

Microplastics are extremely small pieces of plastic debris in the environment resulting from the disposal and breakdown of consumer products and industrial waste, and are harmful to ocean and aquatic life.

A team of researchers from CSIR-National Institute of Oceanography in the paper titled “The consequences of reduced anthropogenic activities during the COVID-19 pandemic on microplastic abundance in a tropical estuarine region: Goa, India” said a sharp decrease in the microplastics (MPs) concentration was observed following the COVID-19 outbreak in 2020.

The researchers – Priyansha Gupta, Mahua Saha, V Suneel, Chayanika Rathore, Durbar Ray and Akshata Naik – conducted this research by collecting samples from this area before and after the pandemic.

“This study showed a comparison in the distribution and characterisation of MPs from surface water and sediments of the Mandovi, Zuari estuaries before the isolated pandemic (BIP 2019) and after the isolated pandemic (AIP 2021) periods,” the paper said.

“During the AIP period, the MP concentrations/levels were much lower than in the before-isolated pandemic (BIP) period for both surface water and sediments irrespective of the different seasons,” it said. The researchers concluded that the concentration of MPs declined by two to seven times after the COVID-19 lockdown.



“A reduction in MP levels during BIP to the AIP period may indicate a positive impact on the health of marine ecosystems and progressive implications for the economic and social well-being of coastal communities,” the paper reads.

The study revealed that the reduced MP levels is associated with changes in human activities during the pandemic and thus it may highlight the potential benefits of more sustainable consumption and production patterns.

“This underscores the pivotal role played by societal and industrial exploitations in driving MP pollution and by effectively controlling and altering human actions on plastic production, consumption, and waste management, the emerging MP concentration in water, can be controlled to a great extent,” the researchers have said.

The paper has mentioned that this will eventually be helpful for the identification and amelioration of potential MP sources, encompassing both regional and global contexts. PTI  
RPS NP



## Taiwan, India ink MOU on science research

CSIR

08<sup>th</sup> December , 2023

Taiwan signed an MOU on scientific research cooperation with India during the 2023 India-Taiwan Joint Committee on Cooperation in Science and Technology on Wednesday (Dec. 6). National Science and Technology Council (NSTC) Deputy Minister Lin Min-tsung (林敏聰) and Indian Secretary of the Department of Science and Technology Abhay Karandikar jointly chaired the annual meeting. It was the first bilateral in-person ministerial-level talks since the COVID-19 pandemic, CNA reported.



The two sides discussed deepening cooperation in areas such as artificial intelligence, cybersecurity, biotechnology, nanoelectronics, green energy, and space technology. Later, Lin and Indian government researcher Dr. N. Kalaiselvi oversaw the signing of an MOU between Taiwan's National Applied Research Laboratories (NARLabs) and India's Council of Scientific and Industrial Research (CSIR).

Under the agreement, research centers affiliated with NARLabs can engage freely in scientific research exchanges with 37 research centers under CSIR without the need for individual cooperation agreements. This move is expected to strengthen scientific cooperation between the two countries. Taiwan and India have a close partnership in technology, having held 12 ministerial-level bilateral meetings, 29 bilateral forums, and seminars. They have executed over 115 cooperation projects to date.

**Published in:**

[Taiwannews](https://taiwannews.com)



## CCMB study finds clues to diagnosis of complex diseases

CSIR-CCMB

08<sup>th</sup> December, 2023

Researchers from the city-based Centre for Cellular and Molecular Biology (CCMB) have identified non-coding elements in the genome conserved only in humans and primates, but not across other mammals, which can help in diagnosis and treatment of complex diseases in human beings.

The researchers studied regions of the genome that lack protein-coding genes but control activity of nearby or distant genes in humans and primates. Although the non-coding regions of genome evolve rapidly, researchers found hundreds of thousands of regions that are unchanged specifically in humans and primates throughout 65 million years of evolution.

“These regions were previously thought to be non-functional but such high level of conservation specifically across primates signifies they are responsible for development of characteristic features of humans, apes and monkeys that are not found in other animals,” the researchers said.

The researchers also found that mutations in these conserved non-coding regions often led to disorders including high cholesterol levels. “Understanding the effects of genetic variants is crucial for accurate diagnosis and treatment of genetic diseases,” they said. The study was published in Nature by an international team of researchers including Dr G. Umapathy, Shivakumara Manu and Mihir Trivedi from CCMB.

**Published in:**

[Times of India](#)



## Two phytopharmaceutical leads from CSIR-DBT-ICMR collaboration in the stage of IND-enabling studies

CSIR-CDRI, IIMM, IHBT, CIMAP, IICB, NIIST, IICT, NBRI

08<sup>th</sup> December, 2023

Two leads of phytopharmaceuticals for treatment of pain management and rheumatoid arthritis, developed under the agreement signed between three government-owned research agencies in the end of the year 2018, are in the stage of Investigational New Drugs (IND)-enabling studies, according to the ministry of chemicals and fertilisers.

The two phytopharmaceutical leads - Cannabis Sativa for pain management and Boswellia Serrata for rheumatoid arthritis treatment - are being developed under the tripartite agreement between the Council of Scientific & Industrial Research (CSIR), Department of Biotechnology (DBT) and Indian Council of Medical Research (ICMR) for inter-ministerial cooperation focusing on boosting innovative research on phytopharmaceuticals. This was also in tandem with the CSIR's Mission Mode Project on phytopharmaceuticals to develop drugs in the area from 2017, right from the launch of phytopharmaceutical regulations by Central Drugs Standard Control Organisation (CDSCO).

The tripartite agreement has been signed for mutual collaboration to develop phytopharmaceutical products for therapeutic use following international standards and norms for establishing safety, quality, standardisation and efficacy in an effort to take forward the leads already existing with CSIR, DBT and ICMR and develop specific collaborative projects in the domain aiming at rigorous modern scientific testing and development of standard products to maintain global competitiveness.

As per the MoU, the CSIR will be responsible for undertaking the R&D for developing desired phytopharmaceutical leads (both with short term & long term translational period), which can be taken forward for positioned product development following DCGI regulatory guidelines; pre-clinical pharmacology; CMC and IND enabling studies; and safety and regulatory toxicity studies.



DBT would be responsible for identifying the leads based on its extra-mural research, providing funds for R&D projects taken under the MoU and preparation of respective sections of the IND dossier in mutual collaboration with ICMR. Preparation of IND dossier and its submission to DCGI, preparation of clinical trials protocols, obtaining regulatory clearance for clinical trials and conducting trials with compilation of results etc. would be the responsibility of ICMR.

Elaborating the efforts of the government to develop phytopharmaceuticals with international standards, the Union minister for chemicals and fertilisers Dr Manshukh Mandaviya in the Parliament said, "...CSIR has also been working under the tripartite agreement between CSIR-DBT-ICMR towards preclinical development of phytopharmaceutical leads, Cannabis sativa and Boswellia serrata for pain management and rheumatoid arthritis treatment, respectively. Both these leads are currently under IND-enabling studies."

He said that the phase-I of the CSIR Phytopharmaceutical Mission (2017-2020) was focused at the captive cultivation of important medicinal plants of therapeutic value and the preclinical development of leads based on eight medicinal plants, Cassia occidentalis (CSIR-CDRI), Murraya koenigii (CSIR-IICB), Dysoxylum binectariferum (CSIR-IIIM), Picrorhiza (CSIR-IHBT & CDRI), Glycyrrhiza glabra rich extract (CSIR-CIMAP), Cissampelos pareira (CSIR-IHBT), Tinospora coridifolia (CSIR-CDRI), and Bergenia ciliata (CSIR-IIIM). The Mission has developed the capabilities and expertise in the CSIR system to work on the phytopharmaceutical route of drug development.

This phase has resulted in one IND filing to the CDSCO, for the plant, Bergenia ciliata (IIIM160), the dual inhibitor of IL-6 and nociception, for management of pain in rheumatoid arthritis.

The phase-II of the CSIR-Phytopharmaceutical Mission (2021-2023) was focused at preclinical development of six leads based on Murraya koenigii (CSIR-IICB), Dysoxylum binectariferum (CSIR-IIIM), Terminalia chebula (CSIR-CDRI), Acorus calamus (CSIR-CDRI),



*Crocus sativus* (CSIR-IIIM), and *Solanum nigrum* (CSIR-NIIST and CSIR-IICT). The three leads from this project are ready for IND filing to the CDSCO.

Further, CSIR, through its constituent laboratories is pursuing research on various aspects of medicinal plants and traditional medicines. CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow is working on the Indian system of medicine to scientifically validate and standardise these traditional medicines along with dissemination of knowledge associated with medicinal and aromatic Plants. Research undertaken at CSIR-CIMAP has transformed into many patents and products, many of which have been adopted by small and medium scale industries.

"To name a few, NBRMAP-DB, an ayurvedic proprietary medicine for diabetes has been there in the market for the past few years. Similarly, 'Relaxomap', a pain relieving formulation based on traditional leads and validated scientifically, is being marketed by more than three industries across the country," he added.

CSIR-NBRI, Lucknow has also developed an herbal formulation to alleviate urolithic disease. An Indian patent has been filed and technology has been transferred to industry for its commercialization. This product is efficacious and cost effective than existing herbal brands against Urolithiasis & nephrolithiasis.

CSIR-CDRI, Lucknow has developed 4 herbal principles having medicinal importance which were patented and also commercialized, namely Bacosides Enriched Standardized Extract of Bacopa for memory enhancement, Gugulipid (Hypolipidemic), CONSAP (Contraceptive cream), and Reunion (for fracture healing and osteoporosis management).



## 'Highest abundance' of microplastics in sea along Mumbai Kanyakumari Goa in EAS Researchers

CSIR-NIO

08<sup>th</sup> December, 2023

Locations like Mumbai, Cape (Kanyakumari in Tamil Nadu) and Goa have the "highest abundance" of microplastics in the sea when compared to other places in the Eastern Arabian Sea (EAS), a research paper has revealed.

A group of scientists from CSIR-National Institute of Oceanography, including Priyansha Gupta, Mahua Saha, V Suneel, Chayanika Rathore, A V Chandrasekhararao and C K Junaid as well as G V M Gupta from the Centre for Marine Living Resources and Ecology in Puthuvype in Kochi have published this paper in the scientific journal 'Science of the Total Environment'.

The study, for the first time, has narrated the distribution, characterization of microplastics (MPs) and influence of hydrodynamics and risk assessment in the surface sediments of EAS with selected depths, the researchers said.

The study concluded that North EAS showed maximum MP concentration, followed by Central EAS and South EAS. "Among all distinct locations, Mumbai, Cape (Kanyakumari) and Goa showed the highest abundance of MPs," the paper stated.

Sampling on various shores have revealed that fibres and MPs of sizes ranging from 300 micrometer to 5 mm prevailed in all locations along the coasts of EAS, irrespective of the water depths, it informed.

"The meteo-oceanographic data showed the EAS (8-20° N shelf region) is a potential microplastic accumulation zone during the summer monsoon (August). A micro-FTIR analysis revealed polypropylene, polyisoprene (PIP), butyl rubber and low density polyethylene (LDPE) are the most detected polymers, which illustrated the probable sources of litter discharges, fishing industry, and active marine navigation in the EAS region," the paper said.



"Considering the limited number of MP studies in the IO, findings from the present study contributed novel details regarding the distribution and fate of microplastics to fully understand this region's origins, movements, hydrodynamic settling, and fates of MPs during the summer monsoon," as per the paper.

The team of scientists have suggested that future studies should be performed to evaluate relations among MPs recovered in sediments and their interaction with oil and organic pollutants to better clarify the bio-availability of trophic webs.

Detailing about the intent of the study, the paper mentions that despite the omnipresence of microplastics (MPs), the studies around the western continental shelf of Indian Ocean (Eastern Arabian Sea-EAS) are uncovered and understudied.

"Thus, the present study was focused on understanding the spatial distribution, characterization and risk assessment of MPs in sediment across seven coastal transects all along the EAS shelf," the paper pointed out.

Researchers said the widespread use of plastics has led to the dawn of what is now referred to as the 'Plasticene Age', and in the future, scientists may investigate fossilized plastics in the earth's strata.



## U.P.: NBRI annual flower show to depict 'Mission Amrit Sarovar'

CSIR-NBRI, CIMAP

08<sup>th</sup> December , 2023

The two-day annual 'Chrysanthemum & Coleus Show' of city-based CSIR-National Botanical Research Institute (NBRI) beginning on Saturday (December 9) will depict Centre's Mission Amrit Sarovar aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of celebration of Azadi ka Amrit Mahotsav. The event will be held at the central lawn of the botanical garden.



“We’ve various some small ponds on our campus which will be decorated and some flowers such as lotus and waterlily will be kept on the theme of Mission Amrit Sarovar,” said SK Tewari, chief scientist at NBRI and convener of the flower show. “However, we are in the planning stage,” he added.

There are 20 small ponds in the botanical garden which will showcase some of the recently launched flowers like 'Namah 108'—a Manipuri lotus with 108 petals—which was a gift to the PM Modi by the institute and was launched by Union minister Jitendra Singh in Lucknow earlier this year.

“NBRI is planning to showcase some of its flowers growing on these 18-20 ponds. Flower that will be showcased are 'Namoh 108' or Amazonian giant waterlily the leaves of which can carry weight of a newborn baby,” said one of the scientists of the institute.

“These ponds are also the attraction of many migratory birds and fish. So, it is a great idea to promote them through these flower shows,” added the scientist wishing not to be named.



Mission Amrit Sarovar was launched by Prime Minister Narendra Modi on April 24, 2022 with the objective to provide sustainable water sources wherein every district is expected to construct/ rejuvenate a minimum of 75 Amrit Sarovars.

Something for everyone

“The flower show will have something for everyone, including women, students, government and private organisations,” said CSIR-NBRI director Ajit Kumar Shasany.

“Government and private organisations, schools, colleges and individuals will also participate in the flower show. Various informative stalls of the institute including CSIR floriculture mission stall, a stall for dehydrated flower artefacts made by women will be there at the event,” the director said.

“In the government sector, we have received entries from HAL, CIMAP, northern railways, Central Command, Lucknow, along with La Martiniere College,” Tiwari said.



## International Food Convention gets off to a start in Mysuru

CSIR-CFTRI

07<sup>th</sup> December , 2023

The 9th International Food Convention (IFCoN-2023) got off to a start here on Thursday with food scientists and technologists from across the country and also abroad attending the four-day mega event – organised once in five years by the Association of Food Scientists and Technologists (India) with the collaboration of Central research institutions.



This year's theme of the convention is

“TRIMSAFE – Technology Re-engineering for Innovation and Mitigating the risk for a Safe, sustainable, Affordable and secure Food Eco-system.” The CSIR-CFTRI, DRDO-DFRL, and CSIR-Indian Institute of Toxicology Research, Lucknow have supported the AFSTI in organising the convention.

ISRO Chairman S. Somanath inaugurated the event in the presence of Pramoda Devi Wadiyar of the erstwhile Mysore royal family, CSIR-CFTRI Director Sridevi Annapurna Singh, CSIR-IITR Director N. Bhaskar and DRDO-DFRL Director Anil Semwal. N. Kalaiselvi, secretary, Department of Scientific and Industrial Research and DG, CSIR, New Delhi participated as the chief guest on a virtual mode.

Speaking on the occasion, Dr Somanath spoke about how the ISRO was supporting the country's agriculture sector with the help of satellite data for crop forecast and pest management. He listed out ISRO's various initiatives such as remote sensing that have been useful for providing valuable information to farmers.

More technological interventions can help improve the agriculture sector since the area of



food science is closely connected with farming. The technologies can help farmers improve crop yields and the food processing and value addition too can be expanded, he felt. While speaking about food storage and processing, Dr Somanath said food scientists can look at improving the shelf life of foods and come out with information on the right kind of foods with high nutrient value for addressing the lifestyle diseases.

He said the low-cost food processing technologies can go a long way in providing employment to the people in the country. Automation is needed but at the same time the population should also get employment and food processing technologies can improve employment. Earlier, in her address, Dr. Kalaiselvi complimented the organisers for holding the mega food convention and suggested bringing out safe and secure foods to the world as it was a challenging assignment. “Bring new concepts to address the challenges faced by the food sector.”

She said the 21st century farmers have been harnessing technological developments for improving farm practices and crop yields. Thanks to ISRO, the farmers are now relying on the satellite data for various aspects like rain forecast and so on.

“We at the CSIR also have been working closely with farmers as our scientists are also going to the fields and interacting with farmers on the support they would like to avail from the CSIR labs that have been engaged in transferring the benefits of S and T for the wellbeing of farmers,” she told the gathering in her address.

On the occasion, the IFCoN’s souvenir was released by the dignitaries. Ms. Wadiyar launched the food expo. The doyens of food science and technology were honoured while the guests launched poster sessions, and grain science and technology journeys. Prior to the inaugural session, Prof. M. Swaminathan Padma awardee lecture series was inaugurated. The four-day conference has already attracted over 3,000 registrations with over 200 delegates from abroad participating and also making presentations. Organising Secretary Suresh D. Sakhare and convener Tanaji G. Kudre were also present.

**Published in:**

[The Hindu](http://www.thehindu.com)



## Sand erosion at RK Beach in Visakhapatnam due to man-made structures and cyclones raises safety concerns

CSIR-NIO

07<sup>th</sup> December , 2023

The partial caving in of the boundary wall of the baby park, and the edges of the concrete floor of the park, close on the heels of cyclone Michaung, at RK Beach, has once again raised concerns on the safety of man-made structures, located right on the beach.



The erosion of sand has caused the partial caving of the park wall. Though deposition and erosion of sand is a common phenomenon, based on various factors, man-made issues are causing problems and failure to take remedial measures can have serious consequences, say scientists.

“Sand erosion is a temporary phenomenon. During winter, the deposition of sand takes place in one direction and in summer it takes place in the opposite direction, thereby maintaining an overall balance. Man-made constructions leads to sand erosion and disturbs the balance,” Chief Scientist and Scientist of the National Institute of Oceanography (NIO), Vizag, V.V.S.S. Sarma told The Hindu, when contacted on Wednesday evening.

“During cyclone time, the waves would be more and erosion would increase due to extreme current. The baby park (near RK Beach) is close to the shoreline and hence, erosion will be more at this place. It has to be observed for a few weeks, before initiating remedial measures like beach nourishment,” says Mr. Sarma.

A study on ‘Coastal erosion – beach profiling’, conducted by the CSIR-NIO, Visakhapatnam, between 2011 and 2015, had shown wide changes on the water front, which helped in



estimating the sand accretion and erosion, says G.P.S. Murty, who has retired as Chief Scientist and Scientist-in-Charge of National Institute of Oceanography (NIO), Visakhapatnam.

“During surge or cyclonic weather, beach erosion is common. It had happened in the past also. Beach nourishment, growing of coconut and casuarinas trees and beach weeds can help in checking sand erosion to a great extent. Ahead of the International Fleet Review (IFR) held in Vizag in 2016, the stretch of beach, between RK Beach and YMCA Beach was nourished by dumping dredged sand,” says Mr. Murthy.

A study on ‘Erosional and depositional pattern, along Visakhapatnam’ by Kollu Sai Satya \Mounika of the Department of Geology, Andhra University, between January and December 2019, has noted that deprivation of natural nourishment is posing serious problem to the beach, especially between Naval Coast Battery and the Lawson’s Bay area.

“This erosion is further supplemented by storms during cyclones. She suggested construction of groynes at suitable intervals to trap the sand that comes in and nourishes the beach. The pumping of the dredged sand towards this part may also help to some extent in stabilising the beach from further erosion,” she suggests.



CSIR-NGRI

07<sup>th</sup> December, 2023

## Dr.Labani Ray- A Beacon of Brilliance

### ఎన్జీఆర్ఐ శాస్త్రవేత్త డా.లబానీరేకు తల్వనీ పురస్కారం

మనతెలంగాణ/ఉప్పల్: ఇండియన్ జియోఫిజికల్ విభాగంలో ఎన్జీఆర్ఐ సీనియర్ శాస్త్రవేత్త డా.లబానీరే తల్వనీ పురస్కారం అందుకుంది. భూమి అంతరనిర్మాణం విభాగంలో ఆమె చేసిన కృషికి పురస్కారం అందజేసినట్లు బుధవారం ఎన్జీఆర్ అధికారులు ఓ ప్రకటనలో పేర్కొన్నారు. ఇండియన్ స్కూల్ ఆఫ్ నుంచి జియో ఫిజిక్స్లో ఉస్మానియా విశ్వవిద్యాలయం పిహెచ్డీ పూర్తి చేశారు. శాస్త్రీయ రచనలు, భూవిజ్ఞాన రంగంలో ఆమె చేసిన పరిశోధన సామాజిక ప్రయోజనాలు కోసం తోడ్పాడాయని వివరించారు. డా.లబానీరే ఇప్పటివరకు 40కిపైగా పరిశోధనలు పూర్తి చేయడం జరిగిందని వెల్లడించారు.



**Published in:**

Mana Telangana, Eenadu



## Top scientists gather in Hyderabad for two-day INSA meeting

CSIR-CCMB, IICT, NGRI

06<sup>th</sup> December, 2023

About 200 fellows and associate fellows of the prestigious Indian National Science Academy (INSA) on Wednesday gathered here for the academy's 89th anniversary general meeting (AGM), co-hosted by the three CSIR institutes – Centre for Cellular and Molecular Biology (CCMB), Indian Institute of Chemical Technology (IICT) and the National Geophysical Research Institute (NGRI). The two-day meeting will celebrate some of the most notable scientific research that happened in the country in recent times as well as induct 40 new INSA fellows and 45 associate fellows. The scientists will also address challenges and opportunities in bringing science, industry and society together.

“We would like the leaders of scientific institutions and industry of India to discuss the roadmap on how the science and technology community can utilise its expertise and capabilities to further scientific discoveries as well as address the country's problems. We hope that the new fellows inducted into the academy will bring in fresh ideas and enthusiasm to take the mission ahead,” said INSA president Ashutosh Sharma.

“INSA AGM provides platforms to have responses on the recent scientific developments and deliberate on enhancing the Indian research ecosystem. This year's AGM is unique in several senses with new initiatives and organised by three well-known CSIR laboratories representing biological, chemical and physical sciences, which will also foster potential research collaborations,” said co-chair of the meeting and scientist at CSIR-NGRI V.M. Tiwari.

CSIR-CCMB director Vinay K. Nandicoori pointed out that the INSA platforms bring the newly inducted, associate fellows and established scientists together, “enabling discussions of ideas across generations for advancing the scientific community,” according to a press release.

**Published in:**

[The Hindu](#)



## NIIST holds science outreach programme for students

CSIR-NIIST

06<sup>th</sup> December, 2023

The CSIR-National Institute for Interdisciplinary Science and Technology (NIIST) held a Science Outreach Programme for school students on its campus here on Wednesday as a curtain-raiser to the ensuing India International Science Festival (IISF), in association with the Swadeshi Science Movement Kerala.

IISF 2023 is scheduled to be held on the DBT THSTI-RCCB campus at Faridabad from January 17 to 20, 2024. ‘Science and Technology Public outreach in Amrit Kal’ is the central theme of the event.

Presiding over the curtain raiser event, Dr. C. Anandharamakrishnan, Director, CSIR-NIIST, recalled the great contributions of Indian scientists that helped the country significantly in its progress and urged the students to embrace science for enabling India to be a developed nation.

Abga Raveendranath, south zone organising secretary, Vijnana Bharati, gave an outline of activities planned for the IISF 2023 and called upon students to actively participate in programmes like space hackathon. Dr. U.S. Hareesh, Senior Principal Scientist in his introductory remarks, noted that IISF is a unique opportunity where the experience and expertise of the Indian scientific community blends well with the aspirations of young minds.

As part of the event, lectures were delivered by Dr. U.S. Hareesh on “Translating Chemistry to Technology and Products” and Dr. R.B. Rakhi, Principal Scientist on Introduction to Nano world. A total of 150 students from Chinmaya Vidyalayas and 60 students from Loyola School Thiruvananthapuram attended the programme and visited the facilities of CSIR-NIIST.

**Published in:**

[The Hindu](#)



## Global climate crisis inextricably linked to water, says expert

CSIR-NEERI

06<sup>th</sup> December, 2023

Water is crucial for climate change adaptation and mitigation as the global climate crisis is inextricably linked to water, said, Sukumar Devotta, ex-director of Neeri, while speaking at the inaugural session of a workshop on water resources management, conducted by CSIR-National Environmental Engineering Research Institute (CSIR-NEERI) at its auditorium recently.

“India depends on rainwater for ground water recharge, but uneven distribution of rainfall is affecting ground water recharge,” he added. Devotta remarked that people should now say ‘Water is running out of India’ rather than telling ‘India is running out of Water’.

Satish Wate, ex-director, NEERI, counselled to evolve new carrying capacity methods to tackle climate change and ensure sustainable development. Wate stressed on the need of a holistic water management system in urban areas for a sustainable future of India.

Payden, deputy head, World Health Organization (WHO) India, said that 1 in 4 people globally do not have safely managed drinking water at home and 2 in 5 people do not have safely managed sanitation. She expressed concern over poor sanitation in various countries as this is linked to transmission of diarrhoeal diseases, she added.

Payden spoke about ‘hand hygiene’ – the measure to avoid the transmission of harmful germs. Justice Arun B Chaudhari, chairman of Dahanu Taluka Environment Protection Authority, delivered key-note address. Pawan Kumar Labhassetwar, delivered the welcome address, Paras Pujari, gave an outline of the workshop and GK Khadse proposed a vote of thanks.

**Published in:**

[Times of India](https://timesofindia.com)



## “CSIR developing various technologies towards reducing India’s Carbon footprint and recycling”: Dr Jitendra Singh

CSIR-IIP, CRRI

06<sup>th</sup> December , 2023



Union Minister Dr Jitendra Singh today released a flagship document on ‘National Circular Economy Roadmap for reduction of Plastic waste in India’, a collaborative exercise between leading research institutions from India and Australia.

The document aims to foster research and industry partnerships between the two countries and co-develop a roadmap for India’s transition to a circular economy in the Plastics sector.

India and Australia are active participants in the negotiations for formulation of a Global Plastics Treaty to be finalized next year. Both countries aim to leverage their respective strengths in waste management, recycling policies, and environmental initiatives to foster a circular economy that prioritizes resource efficiency and environmental protection.

The present research commenced in July 2020 as part of the India-Australia Comprehensive Strategic Partnership announced by the Indian and Australian Prime Ministers in June 2020.

Speaking at the launch of the document during a function in New Delhi, the Union Minister



of State (Independent Charge) Science & Technology; MoS PMO, Personnel, Public Grievances, Pensions, Space and Atomic Energy, said India has taken the lead in its quest for a circular economy towards achieving the Net Zero target by 2070, as committed by Prime Minister Shri Narendra Modi.

Dr Jitendra Singh said, India's Council of Scientific & Industrial Research (CSIR) is developing various technologies towards reducing India's Carbon footprint and recycling.

“Swachhata campaign, inspired by PM Modi, has generated awareness about ‘waste to wealth’ concept. There is now also better mass understanding about the application of innovation and technology for Recycling and Reuse of Waste materials for productive means,” he said, pointing out that the Government has earned a total revenue of Rs.11,000 crore just by disposing of electronic scrap in the last three years.

Dr Jitendra Singh said, the Department of Science and Technology, Technology Development Board and CSIR recently launched the ‘Recycling on Wheels’ bus, which can generate Waste to Wealth at different spots due to its mobility.

“Dehra Dun based Indian Institute of Petroleum (CSIR-IIP) has jointly developed a Repurposed Used Cooking Oil (RUCO) van that collects used cooking oil and convert it into biofuel,” he said.

The S&T Minister said, CSIR- Central Road Research Institute (CRRI), New Delhi has pioneered the development of a revolutionary Steel slag road technology which facilitates the large-scale utilization of waste steel slag of steel plants in road construction.

Dr Jitendra Singh said, India has emerged as a pioneer in addressing issues of Climate Change, as envisioned by the Prime Minister Narendra Modi during the G20 New Delhi Summit. At India's initiative, the Global Biofuels Alliance was set up on the sidelines of the G20 Summit, he said.



“PM Modi has unveiled the idea of making ‘Lifestyle for Environment’ (LiFE) a global Mission through bolder steps by the global clean energy fraternity,” he said.

Speaking on the occasion, Australian High Commissioner to India, Mr Philip Green said, the collaboration with India on Circular Economy is “important for Australia”. “Reducing Plastic Waste to Zero and achieving a circular economy is a difficult proposition, but possible,” he said.

In her address, Director General, CSIR and Secretary, DSIR, Dr (Mrs) N Kalaiselvi said that the world has moved from saying “No to Plastics” to “Biodegradable Plastics”. “We have to find the best to live with plastics,” she said.

The Government of India has been actively formulating policies and promoting projects to drive the country towards a circular economy. It has already notified various rules, such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules, Metals Recycling Policy, etc., in this regard.

India remains committed to address the plastic waste challenges and consequential human health and ecological impact concerns. Reducing Plastic Waste in India will help drive the transformation of the plastic waste economy in India into a circular economy. The introduction of the Plastic Waste Management Rules in 2016 for India has led to a raft of measures directed at municipal, industry, residential and commercial actors.



## CSIR-CDRI Organized A Pre-Fest Event Of India International Science Festival (IISF 2023) With The Students Of Kendriya Vidyalaya, IIT Kanpur

CSIR-CDRI

06<sup>th</sup> December , 2023

The CSIR-Central Drug Research Institute (CDRI), Lucknow organized a Pre-Fest Event of India International Science Festival (IISF 2023) with great enthusiasm, hosting a group of 100 students and 4 faculty members from Kendriya Vidyalaya, IIT Kanpur, Kanpur (U.P). Under the aegis of Public Outreach in Amritkaal, a Student-Scientist Connect Program was organized. The event, held on



December 6, 2023, aimed to inspire and motivate young minds to pursue careers in science, specifically focusing on the exciting field of Drug Discovery and Research.

Jigyasa nodal officer at CSIR-CDRI, Dr. Sanjeev Yadav, welcomed the students and provided valuable insights about the various programs being organized in IISF 2023 and their significance in their journey of science. He emphasized that IISF, initiated under the vision of the Prime Minister with the theme 'Science for Society,' IISF's primary objective is to commemorate India's achievements in Science and Technology, making the world of science accessible to all.

During his interaction with students and faculty, he also shed light on the remarkable work undertaken by CSIR-CDRI in the field of drug discovery and development. He highlighted the institute's commitment to advancing scientific knowledge and its role in contributing to the greater scientific community.

The students were then given the opportunity to explore the laboratories, gaining hands-on experience in various scientific divisions. In the Botany division, Dr. DK Mishra provided a



comprehensive overview of medicinal plants, showcasing CDRI's ongoing research. The students were introduced to the herbarium, enhancing their understanding of the diverse plant species under study.

Moving to the Medicinal and Process Chemistry department, Dr. Richa Pandey and Er. Ranvir Singh elucidated the process of extracting molecules from natural products. They also explained the scientific validation methods employed to confirm the efficacy of these molecules in drug development.

A visit to the Laboratory Animal Facility proved to be an insightful experience, as Dr. Hansda and his team demonstrated various animal models and explained their crucial role in drug development. The students gained a deeper understanding of the ethical and scientific considerations in using animal models for research purposes.





**THE NEW INDIAN EXPRESS** | **MYSURU**  
02 BENGALURU | WEDNESDAY 06.12.2023

## Global scientists to deliberate on food tech at IFCoN from tomorrow

Swaminathan lecture series, Open Day, job mela to be part of the four-day event

EXPRESS NEWS SERVICE @Mysuru

THE ninth edition of the International Food Convention (IFCoN 2023) will be attended by top scientists belonging to various countries, researchers and industries at Central Food Technology and Research Institute (CFTRI) from Thursday.

The four-day event will deliberate on the theme — TRIM-SAFE - Technology Re-engineering for Innovation and Mitigating the risk for a Safe, Sustainable, Affordable and Secure Food Eco-system.

IFCoN chairman CSIR-IITR, Lucknow, director N Baskar said 2,600 scientists, researchers and students in food science have registered for the international conference which will be attended by 25 foreign speakers, and will have 120 sessions.

He said 300 industries, multinational companies and pharmaceutical companies will participate in the event. While 100 stalls will shed light on pharmaceutical industries and millets. The IFCoN organising committee will submit its recommendations to the government that would be helpful in formulating policies related to food industries, millet technology, food safety and food engineering.

Baskar said they have planned an Open Day on Friday and Saturday on millets and its benefits. It will also showcase experiments and research findings, and food processing machinery that will be open to farmers and the general public. The self-help group and others

using incubators at CFTRI will also showcase their products at the expo which are available on Amazon.

The US Embassy has also come forward to open a stall to educate postgraduate students and researchers on the avenue and scope for getting into leading premier research institutes in the United States. Although the organisers had written to many Embassies to put up their stall and throw light on the opportunities for pursuing higher studies abroad, the US Embassy has

come forward, he added.

They have also given space for job mela where researcher scholars and postgraduate students can interact with the company representatives, negotiate and get into the jobs.

**Swaminathan Memorial lectures**

Baskar said the IFCoN organisers have decided to start M S Swaminathan series. He said Padma Shri awardees Dr Shashanth Joshi, Dr G D Yadav, Dr Aiyappa and Dr V Prakasah will deliver the lecture.

**CFTRI carries research on nutritional value of 100 millets**

MYSURU: The CSIR-CFTRI will soon come out with 100 varieties of nutritional millet and its recipes across the country. The food technology institute is carrying out an indepth study on millets. The Central government is celebrating the International Year of Millet and has released ₹19 crore for research in millet and various aspects of millets.

CFTRI director Sridevi Annapurna Singh said the nine CSIR-CFTRI labs which are carrying out research on the nutritional qualities of 100 varieties of millets including ragi, bajra and others have analysed its protein levels, digestibility and other factors under its 18 months project.

The CSIR-CFTRI has developed over 40 technologies under the millet development programme and have even trained thousands including members of self-help groups whose products are available on Amazon besides being exhibited at the expo in Pragathi Maidan, New Delhi.

Revealing that the CFTRI will also come out with a book on traditional millet recipes of Himachal Pradesh, North East, southern states and other regions, she said, in the second phase, they are working on increasing the shelf-life of millets.

**IFCoN chairman and CSIR-IITR, Lucknow, director N Baskar and CFTRI director Sridevi Annapurna Singh address the media in Mysuru on Tuesday | EXPRESS**

**2,600 scientists, researchers and students of food science have registered for the international conference which will be attended by 25 foreign speakers and will have 120 sessions**

N Baskar, IFCoN chairman



## Global Bio-India 2023 lays focus on Women in Biotech

CSIR

05<sup>th</sup> December , 2023

The second day of Global Bio-India 2023 summit saw the launch of numerous products by women-led biotech and health-tech startups, in the presence of dignitaries from Council of Scientific & Industrial Research (CSIR), Department of Biotechnology (DBT), Biotechnology Industry Research Assistance Council (BIRAC), National Association of Software and Service Companies (NASSCOM), TiE.



The products included Micro-Biozyme (Greenathon Technologies); Pesticide Smart Check (Agrovrrddhi); MoveAxon (SynerSense); NaturActiv+ (Capsber Global Agro); Antimicrobial resistance detection biosensor (Ramja Genosensor); Sydantek ECG (Carditek Medical Devices); Remote healthcare interactive machine (Medaara).

In addition, prizes worth Rs 25 lakh each were handed over to three women entrepreneurs for developing ground-breaking healthcare solutions, as a part of Women Biotech WInER Fellowship Awards- Pooja Goswami (Ramja Genosensor); Santosh Jangir (Newndra); and Rachna Dave (MicroGo).

An announcement of the 5<sup>th</sup> edition of BIRAC-TiE WInER Fellowship awards was also made during this session.

Through WinER Award (Women in Entrepreneurial Research) in association with TiE Delhi, BIRAC has been rewarding women in biotech entrepreneurship, to help all women startups to



excel in their field. BIRAC has organised Global Bio-India 2023 focusing on 'Biotech Innovation' and 'Bio-manufacturing' and its impact on the BioEconomy of the country. The event is being held from 4rth to 6th December in Delhi.



## Please Follow/Subscribe CSIR Social Media Handles



[CSIR INDIA](https://www.youtube.com/CSIRINDIA)



[CSIR\\_IND](https://twitter.com/CSIR_IND)



[CSIR India](https://www.facebook.com/CSIRIndia)



[CSIR India](https://www.linkedin.com/company/CSIR-India)



[csirindia](https://www.instagram.com/csirindia)