

# CSIR IN MEDIA



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**NEWS BULLETIN**

**01 TO 05 JUNE 2024**





## CFTRI ready to take up industrial-funded projects, says director

CSIR-CFTRI

05<sup>th</sup> June , 2024

CSIR-CFTRI Director Sridevi Annapurna Singh said that the linkage between past, present and futuristic research should not be forgotten and added that CSIR-CFTRI has been always been at the forefront with respect to basic, technological and translational research in various facets of food science and technology.

She was speaking at a symposium on ‘Food for our Future: The Role of Biochemistry, Food Science and Nutrition’ on the CSIR-CFTRI campus here recently.

She said CSIR-CFTRI is ready to take up industrial-funded projects and added that the know-how of many bioactive molecules isolation and their associated technologies are ready for industrial transfer.

“CSIR-CFTRI is not only doing intra-institutional research but also inter-institutional work both on the national and international fronts,” she said.



## Symposium on biochemistry, food science and nutrition conducted at CFTRI

CSIR-CFTRI

05<sup>th</sup> June , 2024

The Society of Biological Chemists (India), Mysuru Chapter, in association with CSIR-CFTRI, Mysuru, and AFST (I), conducted a symposium on 'Food for our Future: The Role of Biochemistry, Food Science and Nutrition' at IFTTC auditorium on the CSIR-CFTRI campus here recently. It was organised on the occasion of the birth centenary year {1924-2024} of late Dr. M.R. Raghavendra Rao, late



Dr. H.S.R. Desikachar, late Dr. M.S. Narasinga Rao, formerly deputy directors. G. Muralikrishna, former Chief Scientist and Head, Department of Biochemistry, spoke about the event and the scientists in whose honour it was held.

The symposium was inaugurated by V. Prakash, former director of CSIR-CFTRI and former distinguished scientist of CSIR. Former Chief Scientists and Heads of Biochemistry, Grain Science Technology and Protein Chemistry and Technology of CSIR-CFTRI spoke about their close rapport with the centenarian scientists, a press release said here.

N. Chandrasekhara, R.N. Tharanathan, P.V. Salimath lauded the biochemical knowledge, leadership, dynamism, organisational skills and discipline of late Dr. M.R. Raghavendra Rao as well as the support he rendered to specific areas such as spices, carbohydrate chemistry and novel enzymes. His support to biochemical research rendered many quality publications, several Ph.Ds and grant-in-aid projects to the Biochemistry Department, they added. Dr. M.R. Raghavendra Rao's contribution in bringing 30 years of research of CFTRI (1950-1980) was specifically emphasized by Sreemathi Hariprasad, former Head of Information and Publicity, CSIR-CFTRI.



S.Z. Ali, Malleshi N.G. and Arun Chandrasekhar narrated their experiences of working with late Dr H.S.R. Desikhachar and his role in carrying out pioneering research on parboiling of rice, technological aspects of millets/minor-millets, premixes of ready-to-eat and ready-to-cook cereals and milling aspects of various pulses - easy to mill and difficult to mill. They emphasized his guidance and leadership had helped them to carry forward the research on grains which resulted in several excellent publications, patents, processes and technology transfers to industries.

A.G. Appu Rao, who worked for his Ph.D under the guidance of late Dr. Narasinga Rao, also paid rich tribute for his knowledge base in the three-dimensional structure of proteins and related biophysical aspects. He especially praised his leadership in guiding several Ph.D candidates resulting in high quality publications in reputed journals. He specifically mentioned his simplicity, punctuality and candid interactions with staff and students in exchange of views in the area of biophysics.

In his address, Dr. Prakash remembered his close association with the above-mentioned centenarians and appreciated their pivotal role in building strong schools in various facets of basic research in food science. He recalled his close rapport with late Dr. M.S. Narasinga Rao and praised his encouragement to him when he was a research scholar and scientist for his publications in peer reviewed journals.

The noted scientist advised all the young students and scientists to concentrate on the emerging areas such as prebiotics, probiotics, synbiotics and post-biotics. He emphasized the need for packed foods without packaging films and also stressed the necessity to work on molecular aspects of sensory perception and nutraceuticals.

He added that a lot of scope exists on various regional foods of India with respect to their production and technological aspects.

**Published in:**

[The Hindu](#)



## The 3rd Indian Analytical Congress (IAC) inaugurated at the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP) Dehradun

CSIR-IIP

05<sup>th</sup> June , 2024

The 3rd Indian Analytical Congress (IAC) was inaugurated today at the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP) in Dehradun. It is a three-day International Conference cum Exhibition IAC-2024 being jointly organized by CSIR-IIP and the Indian Society of Analytical Scientists (ISAS-Delhi Chapter). "Role of Science and Technology in Green Transitions" is the theme of conference.



Prof. S.K.Mehta, Vice-Chancellor, Ladakh University addressing the inaugural session presented an overview of the role of newly developed educational infrastructure in Ladakh. He also showcased the advanced research facilities recently developed at Ladakh University through the research funds obtained from DST, DBT, and other funding agencies.

Dr. Harinder Singh Bisht, Director, CSIR-IIP, briefed about the importance and significance of new Advanced Analytical facilities and their role in the energy transition. Prof. Rajnish Kumar, SSB Awardee and Professor IIT Madras delivered a plenary talk on "CO<sub>2</sub> capture and sequestration Carbon capture utilization and sequestration and its relevance to net zero targets in India."

CSIR's initiative and thematic achievements in Energy and Energy Devices (EED) were showcased through the 'One Week One Theme' (OWOT) program. The EED session focused on conventional energy sources, renewable and non-conventional energy/energy systems, and energy storage and devices.



The 3-Day International Conference will provide a platform for industries, academia, scientists, and technologists in the Analytical Sciences to present the prevalent and upcoming solutions in this area. The conference shall witness five technical sessions comprising invited talks by eminent speakers, presentations by researchers, and special and plenary sessions.

ISAS-Delhi Chapter executives Dr. G.S. Kapur, Dr. J. Christopher, Dr. Ravindra Kumar and Dr. Rajkumar Singh were present during the inaugural ceremony. More than 250 delegates from public sector units (PSUs) such as IOCL, BPCL, HMEL, and institutions such as IIT-Roorkee, UPES, Doon University, BARC, Punjab University, etc. participated in the conference.



## CSIR - Central Leather Research Institute celebrates National Technology Day and World Environment Day

CSIR-CLRI

05<sup>th</sup> June , 2024

CSIR - Central Leather Research Institute (CLRI), Chennai celebrated National Technology Day and World Environment Day on 04 June 2024 at CSIR-CLRI, Chennai. Dr. K J Sreeram, Director, CSIR-CLRI welcomed the august gathering represented by the Chief Guest & Speaker of the day, Shri K R Venkatadri, Chief Commercial Officer, M/s Tata Chemicals, Mumbai, Shri P. Rajasekaran, Business Head, Finished Leathers, Tata International Limited, Dewas, Scientists and Researcher of the Institute.



Mr. K R Venkatadri delivered a Technology & Environment Day lecture on “Pioneering Sustainability: Bridging Tech & the Environment”. While delivering a lecture, Venkatadri discussed the need for an innovation team in the research group, assessing the market and its value for the research outcomes, different levels of technology development and its environmental sustainability, etc. An Agreement in connection with licensing of the technology as “GENOCORIUM, a regenerated leather for applications in lifestyle products was exchanged between M/s Tata International Limited (TIL), Dewas and CSIR-Central Leather Research Institutes, Chennai. Dr. P. Saravanan, Chief Scientist, CSIR-CLRI, and Shri P. Rajasekaran, Business Head, Finished Leather, TIL shared the advantages of this eco-friendly technology and its business opportunities in the global market, respectively. A short film on Environmental Sustainability was screened to create awareness among the participants.

A Software on Contractual Document Information Retrieval System was also released during



the program. Dr. Subhendu Chakrabarti, Chief Scientist highlighted the importance as well as of the details of the program. Certificates were distributed to the Scientists who transferred the technologies successfully, recently. Program ended with a vote of thanks.



## Tech transfer deal promotes biobased leathers in India

CSIR-NIIST

04<sup>th</sup> June , 2024

In a significant development, the Council of Scientific and Industrial Research's National Institute for Interdisciplinary Science and Technology (CSIR-NIIST) has entered into a Memorandum of Understanding (MoU) with Alter Wave Eco Innovations (AWEI) to transfer the technology for manufacturing vegan leather in India.

The partnership aims to develop sustainable biomaterial alternatives to animal leather, leveraging the abundant agricultural biomass available in Kerala, India. The technology, developed by a CSIR-NIIST team led by Dr. Anjineyulu Kothakota, uses plant-based materials such as pineapple leaves, banana stems, and rice straws to produce high-performing, biodegradable leather-like materials.

The collaboration will enable AWEI to tap into the vast agricultural biomass available in Kerala, generating an additional income stream for farmers. Kerala has approximately 20,000 hectares of pineapple farms, producing around 720,000 metric tons of farm waste each year. This biomass can be upcycled into sustainable leather materials, providing a lucrative alternative to traditional leather production.

AWEI aims to revolutionize the fashion and automotive industries with its plant-based materials. The company's approach involves sourcing biomass from farmers and farming communities, upcycling it into non-toxic, durable materials that can be used for various applications. The technology transfer deal between CSIR-NIIST and AWEI is expected to have a significant impact on the environment, reducing the reliance on animal leather and promoting sustainable practices in the industry.

**Published in:**

[Worldbiomarketinsights](https://www.worldbiomarketinsights.com)



## Heatwave key reason for high air pollution in city: Report

CSIR-IITR

04<sup>th</sup> June , 2024

Heatwave conditions was a contributing factor to the high air pollution levels in the state capital, stated a report by the Lucknow-based Indian Institute of Toxicology Research (IITR). IITR, a unit of the Council for Scientific and Industrial Research (CSIR), on Monday released its annual pre-monsoon report for this year. “The primary reason for the increase in particle pollution in the city’s atmosphere is extreme heatwaves during April and May,” the report said. The 24-hour average concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> in the city in the said period were 118.8 and 85.9 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ), respectively, as per the report. The report further reasoned that high ambient temperature dried the atmospheric air and increased the wind speed, resulting in the resuspension of loose soil and road dust into the atmosphere. The report also cited urban development activities, vehicular movement and traffic jams as the cause of air pollution.

Indira Nagar, Chowk most polluted

The study was conducted at four residential areas--Aliganj, Vikas Nagar, Indira Nagar and Gomati Nagar--and four commercial areas--Charbagh, Alambagh, Aminabad and Chowk. Among the residential areas, the 24-hour concentrations of PM<sub>10</sub> ranged from 79.3 to 272.8  $\mu\text{g}/\text{m}^3$  with an average of 137.2  $\mu\text{g}/\text{m}^3$ . Its average concentration was highest in Indira Nagar. Among the commercial areas, the concentrations of PM<sub>10</sub> ranged from 96.7 to 379.4  $\mu\text{g}/\text{m}^3$  with an average of 198.0  $\mu\text{g}/\text{m}^3$ . Its concentration was the highest in Chowk. In residential areas, PM<sub>2.5</sub> was in the range of 49.6 to 126.7  $\mu\text{g}/\text{m}^3$  with an average of 85.9  $\mu\text{g}/\text{m}^3$ . It was the highest at Indira Nagar. Similarly, Chowk was the most polluted commercial area. Caption: The 24-hour average concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> in the city in April and May were 118.8 and 85.9  $\mu\text{g}/\text{m}^3$ , respectively. Source-IITR

**Published in:**

[Hindustantimes](https://www.hindustantimes.com)



## **BITS Goa, NIO and NIT Calicut join hands to explore deep-sea plumes**

CSIR-NIO

04<sup>th</sup> June , 2024

Researchers from BITS Pilani Goa Campus, CSIR-National Institute of Oceanography (NIO), and NIT Calicut are collaborating on a project to explore deep-sea plumes using autonomous underwater vehicles (AUVs). Deep-sea plumes are areas of warm, cloudy water that can rise several hundred meters above the vent sites found at the ocean bottom.

The project aims to better understand ocean phenomena and their impact on climate change, and will delve into aspects such as underwater communication, fleet control, and navigation techniques. Through advanced technologies, researchers hope to establish observatories and collect real-time data for improved ocean monitoring and prediction. The plumes could be salinity, turbidity, temperature gradient, particulate, or colour gradient.

“Together the team will be preparing the acoustic algorithm using the AUV developed by CSIR-NIO to track the plumes. We will conduct a real-time test of the plumes in still waters first before venturing into deep sea,” said CSIR-NIO director, Sunil Kumar Singh.

“Goa can be ambitious beyond surfing the gentle waves to dive deep down underwater explorations with a planet-conscious mantra; explore, protect and restore,” scientists from BITS Goa said. “What’s hidden in the mysterious blue oceans must be answered for our generation. It’s our time to plan the treasure hunt for huge underwater mineral resources. Intentionally, we can put our efforts to restore our corals, so that they could no longer be a thing of past,” they added.

The groundbreaking project titled, “Autonomous measurement and tracking of deep-sea plumes using swarm of heterogeneous underwater vehicles” is led by Sarang Dhongdi from BITS Pilani, along with Pramod Kumar Maurya from CSIR-NIO and Rakesh Warier from NIT Calicut. This initiative falls under the ministry of earth sciences’ deep ocean mission.



The project employs cooperative underwater exploration strategies, utilising a network of connected autonomous vehicles. By deploying a fleet of AUVs, data from the ocean can be transmitted to a control station via the network and Internet-of-Things (IoT) technology.

Oceanographers and marine scientists aspire to establish observatories using modern technologies to explore the inner space of the ocean. Continuous collection and analysis of real-time data will enhance the understanding of ocean properties, life processes, and events, aiding in predicting future climate changes and their impact on human life.

From micro-level processes to global climate changes, various underwater phenomena can now be monitored and studied more effectively with advancements in mobile observation systems. This collaborative effort promises to shed light on the secrets of the deep sea and contribute to scientific knowledge and environmental conservation efforts.



## Gondwana University-NEERI to sign MoU for academic research

CSIR-NEERI

03<sup>rd</sup> June , 2024

CSIR-National Environmental Engineering Research Institute will celebrate World Environment Day on June 5. Dr Prashant Bokare, Vice-Chancellor of Gondwana University, Gadchiroli will be the chief guest.

NEERI Director Dr Atul Vaidya will remain present on the dais. Dr M P Patil, Chief Scientist, Dr Lala Singh, Principal Scientist will be the other speakers.

A Memorandum of Understanding (MoU) between CSIR-NEERI and Gondwana University for joint research and academic projects will be signed on the occasion.

The programme will be held at the NEERI's auditorium at 4 pm on June 5.



## CSIR's 'Phenome India' Project Hits Target with 10,000 Samples Collected, Aims for New Era in Precision Medicine

CSIR-IGIB, NIO

03<sup>rd</sup> June , 2024

The Council of Scientific and Industrial Research (CSIR) announced the successful conclusion of the first phase of its groundbreaking longitudinal health monitoring project, the 'Phenome India-CSIR Health Cohort Knowledgebase' (PI-CheCK). To mark this significant milestone, CSIR organized a special event, 'Phenome India Unboxing 1.0', at the National Institute of Oceanography (NIO), Goa today, 3<sup>rd</sup> June. Dr. Souvik Maiti Director, CSIR-Institute of Genomics and Integrative Biology (IGIB), Dr. Sunil Kumar Singh, Director at CSIR-National Institute of Oceanography (NIO), Dr. Shantanu Sengupta, Senior Principal Scientist at CSIR-IGIB, Dr. Rajendra Prasad Singh, Senior Principal Scientist at CSIR and Dr. Viren Sardana, Senior Scientist at Centre of Excellence for Intelligent Sensors and Systems were among the dignitaries present.



Addressing the media, Dr. Shantanu Sengupta, Senior Principal Scientist at CSIR-Institute of Genomics and Integrative Biology stated that this was a momentous day for Indian Healthcare. He explained that despite India bearing a huge burden of cardio-metabolic diseases, the reasons for such high incidence in the Indian population are not entirely clear. “The risk factors in the West may not be the same as the risk factors in India. A factor which may be important for a particular person may not be important for another person. So a one-size-fits-all concept has to go in our country”, he added. He explained that for the first time, a pan-India longitudinal study is being conducted with an aim to develop an enhanced prediction model for cardio-metabolic disease, especially diabetes, liver diseases and cardiac diseases. Such a study is vital as these diseases have both genetic and lifestyle factors that



contribute to risk, he said. Stating that study managed to cross their target of 10,000 samples, the Senior Principal Scientist called upon other organizations to initiate similar sample collection drives. “Suppose, we get around 1 lakh or 10 lakh samples, then it will enable us to redefine all major parameters in the country”, he said as he explained that CSIR has developed a cost effective Standard Operating Procedure for sample collection.

Launched on 7th December 2023, the PI-CHeCK project aims to assess risk factors in non-communicable (cardio-metabolic) diseases within the Indian populace. This unique initiative has already enrolled nearly 10,000 participants, who have volunteered to provide comprehensive health data. These participants include CSIR employees, pensioners, and their spouses from across 17 states and 24 cities. The collected data encompasses a wide range of parameters, including clinical questionnaires, lifestyle and dietary habits, anthropometric measurements, imaging/scanning data, and extensive biochemical and molecular data.

It is important to understand the mechanisms which underlie the increasing risk and incidence of cardio metabolic disorders in Indian population and develop new strategies for risk stratification, prevention and management of these major diseases. Currently, most of these risk prediction algorithms are based on epidemiological data from Caucasian populations and there is evidence that they may be not very accurate for the Indian population due to ethnic diversity, varied genetic make-up and lifestyle patterns including dietary habits. It is therefore, important that India-specific risk prediction algorithms are developed.

The Phenome India project exemplifies CSIR's commitment to advancing precision medicine through Predictive, Personalized, Participatory, and Preventive healthcare. By generating a comprehensive phenome database tailored to the Indian population, the project aims to catalyze similar initiatives across the country, thereby ensuring that risk prediction algorithms are more accurate and representative of India's diverse genetic and lifestyle landscape.



## CSIR to Organize 'Phenome India Unboxing 1.0' to Mark the Conclusion of the First Phase of the Longitudinal Health Monitoring Project

CSIR-NIO

01<sup>st</sup> June , 2024

The Council of Scientific and Industrial Research (CSIR) has announced the successful conclusion of the first phase of its groundbreaking longitudinal health monitoring project, the 'Phenome India-CSIR Health Cohort Knowledgebase' (PI-CHeCK). To mark this significant milestone, CSIR is organizing a special event, 'Phenome India Unboxing 1.0', at the National Institute of Oceanography (NIO), Goa, on 3rd June 2024.

The event will be graced by Dr. N. Kalaiselvi, Director General of CSIR and Secretary, Department of Scientific and Industrial Research (DSIR), who will address the press and highlight the achievements of the project.

Launched on 7th December 2023, the PI-CHeCK project aims to assess risk factors in non-communicable (cardio-metabolic) diseases within the Indian populace. This unique initiative has already enrolled nearly 10,000 participants, who have volunteered to provide comprehensive health data. These participants include CSIR employees, pensioners, and their spouses. The collected data encompasses a wide range of parameters, including clinical questionnaires, lifestyle and dietary habits, anthropometric measurements, imaging/scanning data, and extensive biochemical and molecular data.

It is important to understand the mechanisms which underlie the increasing risk and incidence of cardio metabolic disorders in Indian population and develop new strategies for risk stratification, prevention and management of these major diseases. Currently, most of these risk prediction algorithms are based on epidemiological data from Caucasian population and there is evidence that they may be not very accurate for the Indian population due to ethnic diversity, varied genetic make-up and lifestyle patterns including dietary habits. UK Biobank, China Bio-bank, Japan Biobank, UCLA precision health biobank are few examples which have targeted significant large populations to eye personalized medicine. It is therefore, important



that India-specific risk prediction algorithms are developed. Through the integration of multi-modal and multi-level omics data—such as genomics, microbiome analysis, plasma proteomics, and metabolomics—the project aims to develop predictive models using advanced big data analysis tools powered by artificial intelligence and machine learning (AI/ML). This will enable personalized risk stratification and management of cardio-metabolic disorders, moving away from a "one size fits all" approach to a more tailored strategy.

The occasion will also feature three prominent lectures by distinguished experts in the field:

Dr. N. Krishna Reddy, CEO of ACCESS Health International, will speak on “Longitudinal studies to validate risk assessment tools in India for cardio-metabolic illnesses.” Dr. Anurag Agrawal, Dean of BioSciences and Health Research at Trivedi School of Biosciences, Ashoka University, will discuss “Digital Transformation of Health: The need for better data ecosystems.”

Dr. Ankush Desai, Consultant in the Department of Endocrinology at Goa Medical College, Bambolim, Goa, will present on “Diabetes Mellitus in India - Problem status and Solutions.” The Phenome India project exemplifies CSIR's commitment to advancing precision medicine through Predictive, Personalized, Participatory, and Preventive healthcare. By generating a comprehensive phenome database tailored to the Indian population, the project aims to catalyze similar initiatives across the country, thereby ensuring that risk prediction algorithms are more accurate and representative of India's diverse genetic and lifestyle landscape



## NRDC transfers herbal sanitary napkin tech

CSIR-CIMAP

01<sup>st</sup> June , 2024

The National Research Development Corporation (NRDC) transferred the “NAARI-infection preventing and biodegradable herbal sanitary napkins” to SS creations (Femigiene). The technology was developed by the CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow.

The technology transfer tripartite license agreements were signed and exchanged among NRDC CMD Cmde Amit Rastogi (retd.), CSIR-CIMAP director Dr Prabodh Kumar Trivedi and women entrepreneur Tanuja Bhatnagar of the SS creations in the presence of scientists of CSIR-CIMAP and other executives of NRDC and industries.

NRDC Vizag head and senior manager Dr BK Sahu and scientist Dr Bhavya Manjeera participated in the programme.

According to NRDC officials, this TLA exchange will be way forward in creating scope of collaboration and opportunities to honour planet and people to safeguard women’s health, environment, biodiversity and sustainable development goals. This technology aims to revolutionise menstrual hygiene of women by offering a natural, eco-friendly and healthier alternative to conventional sanitary products. The technology is biodegradable, nontoxic, and safe to use with no side-effects.

According to Dr Sahu, this is a low cost medicated sanitary napkin with natural aroma, prepared by using plant extracts, aloe vera and essentials oils.

**Published in:**

[Times of India](#)



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