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Department of Scientific & Industrial Research commences Swachhata Hi Seva Campaign 2024 on the theme 'Swabhav Swachhata, Sanskar Swachhata'

CSIR

20th September , 2024

To take on the Government of India Vision of Swachh Bharat, Department of Scientific & Industrial Research (DSIR) along with Autonomous Body, Council for Scientific & Industrial Research (CSIR) and two PSUs i.e. National Research Development Corporation (NRDC) & Central Electronics Ltd. (CEL) has launched the Swachhata Hi Seva Campaign 2024 starting from 17th Sept to 2nd Oct., 2024 with a series of activities focusing on collective cleanliness efforts and community engagement.



Swachhata Hi Seva campaign rolled out with collective Swachhata Pledge and plantation by senior officers under 'Ek Ped Maa Ke Naam' programme.

Special initiatives have been taken by the Department during Swachhata Hi Seva Campaign 2024 which include the Plantation drives, Trainings & Workshop and Shramdaan activity around the office of DSIR and its organizations i.e. CSIR, CEL and NRDC.

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CSIR-NCL Hosts Prof. K. Venkataraman Memorial by Dr. Mukund Gurjar

CSIR-NCL

20th September , 2024

The CSIR-National Chemical Laboratory (CSIR-NCL) in Pune hosted the prestigious Prof. K. Venkataraman Memorial Lecture on September 19, 2024. The featured speaker, Dr. Mukund K. Gurjar, Chief Scientific Officer and member of the Board of Directors at Emcure Pharmaceuticals Limited, captivated the audience with an insightful lecture titled “My Science Journey and Where I Am Now.”



Dr. Gurjar recounted his early fascination with science, beginning with his research work at Nagpur University and continuing through his academic tenure at the University of London.

He discussed his pivotal Ph.D. work, particularly his mechanistic studies on the Stobbe reaction, and explained his discovery of the rapid formation of the 3',6'-Anhydro ring compared to the 1,2-anhydro ring, driven by the influence of neopentyl CH₂OH. His insights shed light on the structural dynamics of the furanose ring.

Dr. Gurjar's presentation spanned a wide array of his scientific contributions, including oligosaccharide synthesis, understanding N-glycan biosynthetic pathways, and the synthesis of cell wall arabinogalactan peptidoglycans in *Mycobacterium tuberculosis*.

He emphasized the practical applications of these discoveries in the pharmaceutical industry, particularly his pioneering work on AZT and its subsequent industrial manufacturing applications.

Dr. Gurjar shared experiences of his collaborations with leading pharmaceutical companies and discussed notable breakthroughs in Active Pharmaceutical Ingredient (API) development, citing key products such as S-Amlodipine, S-Metoprolol, S-Atenolol, and Eribulin.

His lecture also explored the vital relationship between academic research and industrial application, particularly in the synthesis of peptides, Gd-chelating agents, and the role of chirality in pharmaceutical development. He highlighted how chiral switching has shaped the modern pharmaceutical industry.

Dr. Ashish Lele, Director of CSIR-NCL, praised Dr. Gurjar's remarkable contributions to Organic Chemistry and noted that luminaries like him would continue to inspire future scientific exploration at CSIR-NCL. The event was anchored by Dr. Swati Chadha, with Dr. Moneesha Fernandes delivering vote of thanks.

Fennel oil-infused polymeric beads to combat mosquito larvae

CSIR-CIMAP

20th September , 2024

The Council for Scientific and Industrial Research– Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), in its recent study, developed polymeric beads that can help eradicate mosquito larvae. These beads will be released by the institute by the end of October. Fennel oil has been mixed with two varieties of polymers, which help in the controlled release of oil.



In several studies, fennel has been found to control a wide range of infectious diseases caused by fungi, bacteria, viruses, and others. Fennel oil has also been found effective against mosquitoes and as an alternative for mosquito larvicidal activity.

“If fennel oil is used directly as a larvicide or mosquito repellent, it evaporates quickly. The beads obtained from this research solve the problem by encapsulating the oil and ensuring controlled distribution,” said scientist Narayan Prasad Yadav, who worked on the technology.

He shared that a mixture of two polymers, a solvent, and fennel oil was dropped into a calcium chloride solution, forming the beads.

“The substances used in the process are biodegradable and not harmful to humans or animals. The beads are about 2.5 mm in size, and once air-dried, they shrink to about 1.5 mm,” he added.

He also said that about 25 grams of beads, when dropped into 50 liters of water, would kill

existing mosquito larvae within 24 hours, while preventing mosquitoes from breeding for about seven days. The research was conducted on mosquitoes responsible for diseases such as dengue and malaria, as well as wild mosquitoes.

It is considered safe for use in controlling mosquitoes in various household settings, such as summer coolers, garden ponds, and small pots for birds.

An Indian patent has been filed for the product. It will be sent to the product review committee in the coming weeks, and once approved, it will be released by CSIR-CIMAP for user trials. The technology will later be transferred to entrepreneurs and businesses. Interested parties can contact the CIMAP director for technology transfer.

“The cost per gram of beads is currently Rs. 5, and this may decrease with mass production,” Yadav said.

CSIR-CIMAP director Prabodh Trivedi stated that this is a safe technology and could be a solution to mosquito-borne diseases. “Discussions with industry are underway, and the product may reach the market by the end of this year,” Trivedi added.

NDMC collaborates with CSIR-CRRI

CSIR-CRRI

20th September , 2024

The New Delhi Municipal Council (NDMC) on Thursday signed a Memorandum of Agreement (MoA) with the CSIR-Central Road Research Institute (CRRI) to enhance the city's road infrastructure through technical expertise and training. "The aim of this MoA is to provide technical guidance in ascertaining the maintenance needs, the thickness of overlays and also quality control with the broad objective to provide technically sound and economical solutions," an official statement of the NDMC said.



The CRRI and NDMC agreed to work together towards a common goal for the maintenance of the road network in the city and the training of engineers and staff members, it added.

According to the statement, the MoA was signed by NDMC Chief Engineer Sanjay

Arora and CRRI Director Manoranjan Parida at the civic body's headquarters, Palika Kendra, in New Delhi.

Under the MoA, the CRRI will offer consultancy on assessing pavement conditions, suggesting recarpeting layers and conducting third-party quality assessments for road works, the statement said.

The partnership aims to deliver technically sound and cost-effective solutions for New Delhi's road network maintenance.

In addition to evaluating the condition of roads, the agreement includes training programs on pavement evaluation techniques and their application in maintenance and rehabilitation, it said.

“To achieve the long-term objectives, this MoA will be valid for a period of five years from the date of signing and the agreement can be extended for an agreeable tenure for the next five years on the same terms and conditions,” the statement added.

CSIR-IIIM Jammu inks MoU for value addition of aroma crops

CSIR-IIIM

20th September , 2024

CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, and Agrovoltic Power Solutions Private Limited, Dehradun, (APSPL), have entered into a Memorandum of Understanding (MoU) to collaborate on the value addition of aromatic crops and extension of aromatic crops across North-Eastern region including Uttarakhand. According to a CSIR- IIIM spokesperson, the MoU signing ceremony at CSIR-IIIM Jammu today marked a significant milestone in the synergy between these two esteemed organizations.



This collaboration aims to leverage CSIR-IIIM's expertise in natural product research and APSPL proficiency in the procurement of aromatic plants and providing the significant value addition, meeting market demands and enhance agricultural sustainability. It will also bring the close connect among the farmers of local region of UT of J&K and the aromatic industries, ultimately will enhance the already booming agri-startup and agri-economy of the region.

In a statement at the event, Dr Zabeer Ahmed, Director of CSIR-IIIM, expressed enthusiasm about the new partnership with APSPL. This collaboration is a perfect match for CSIR-IIIM's mission to bridge the gap between scientific discovery and real-world applications,' he stated. "By joining forces with APSPL's industry expertise, we're poised to unlock the full potential of aromatic resources, driving economic growth and environmental sustainability. This innovative venture will also provide significant support to local farmers, empowering them to add value to their crops, develop new products, and access broader markets," he added.

APSPL, renowned for its innovative work in aromatic plants and industries, sees this partnership as a strategic one to expand its product offerings and drive expansion within the aromatic sector. “By leveraging the scientific expertise of CSIR-IIIM, APSPL aims to develop novel and sustainable solutions that meet the evolving demands of the market,” Managing Director of APSPL, Ajay Panwar, said.

The signing ceremony was attended by key officials and researchers from both organizations, underscoring their mutual commitment to fostering scientific collaboration and driving innovation in the aromatic industry. The event was organised by CSIR-IIIM Aroma Mission Team, under the supervision of Abdul Rahim, Chief Scientist & Head, RMBD&IST, and BDG, and Nodal Scientist, Dr Suphla Gupta and Dr Love Sharma.

Purple Prosperity: How Lavender is changing J&K's agricultural landscape

CSIR-IIIM

19th September , 2024

A vibrant transformation is underway in Jammu and Kashmir. Fields once barren or struggling with traditional crops are now awash in a sea of purple, as lavender cultivation takes root across the Union Territory (UT). This agricultural shift, aptly named the “Purple Revolution,” rapidly positions J&K as a key player in India’s aromatic crop industry.

The journey of lavender in J&K began as an experimental crop but has since blossomed into a full-fledged agricultural movement.

Dr Zabeer Ahmed, Director of CSIR-IIIM Jammu, explains the expansion: “What started in the Kashmir Valley has now spread to the temperate regions of the Jammu division, four neighbouring states, and even the high-altitude Union Territory of Ladakh. This widespread adoption is a testament to the crop’s adaptability and economic potential.”

Central to this agricultural revolution is the proactive support from the J&K government. Recognising the potential of lavender as a high-value crop, authorities have implemented a comprehensive strategy to encourage its cultivation:

This includes a buy-back scheme, industry connections, technical assistance, and ongoing research and development.

Dr Abdul Sami, a renowned agricultural scientist, highlights the impact of these initiatives: “The buy-back scheme, in particular, has been a game-changer. It provides farmers with the confidence to invest in lavender cultivation, knowing they have a guaranteed market for their produce.” The effects of the Purple Revolution are perhaps most evident in the stories of individual farmers. Ghulam Ali, who transitioned to lavender farming, shares his experience:

“Our land was once barren, yielding little to no income. Today, thanks to lavender cultivation, we not only earn a stable living but can also afford to educate our children. It’s given us new hope and a sustainable future.” This sentiment is echoed across the region, with many farmers reporting significant increases in their income since adopting lavender cultivation.

The scale of lavender production in J&K is growing rapidly. Dr Zabeer Ahmed provides recent data: “This season alone, we extracted 100 kg of fresh lavender oil from cultivations in the Doda district. Currently, we have a stock of almost 7 quintals, indicating the substantial volume of production.” Historically, the region has shown even greater potential.

Dr Shawl, an expert in the field, notes, “At its peak, Kashmir was producing around 700-800 kg of lavender oil. With the current expansion and improved varieties, we’re poised to surpass those figures.”

One of the most promising aspects of the Purple Revolution is its appeal to the younger generation. Kamal Bhat, Research Assistant at Lavender Farm Sirhama, observes, “We’re seeing a surge of interest from unemployed youth in the valley. They’re recognising lavender farming as a viable and profitable career path.” This engagement of young farmers is crucial for the long-term sustainability of the industry. As more youth enter the sector, they bring innovation and energy, potentially leading to further advancements in cultivation and processing techniques.

Beyond its economic impact, lavender cultivation offers environmental benefits. The crop is well-suited to the region’s climate and requires relatively little water, making it a sustainable choice for areas prone to water scarcity. Moreover, the vibrant purple fields have become a tourist attraction in their own right, opening up opportunities for agri-tourism and further diversifying the local economy.

3-day meet on CO₂ conversion to value-added chemicals begins at CSIR-IICT

CSIR-CSMCRI, IICT

19th September , 2024

A three-day national conference on “Catalysis for Energy, Environment & Sustainability (CEES-2024)” commenced at the CSIR- Indian Institute of Chemical Technology (CSIR-IICT) here on Wednesday, under the patronage of the Catalysis Society of India (CSI) and CO₂ India Network.

The meeting, being hosted alongside the “CO₂ India Network 3rd Annual Meet”, aims to advance research and development in catalysis, focusing on CO₂ conversion to value-added chemicals, materials for selective CO₂ capture, and fine chemicals.

IICT director D. Srinivasa Reddy, chief scientist N. Lingaiah, CSIR-CSMCRI director S. Kannan, TIFR-Mumbai’s Vivek Polshettiwar, HPCL-Mumbai Director (Refineries) Bharathan, IIT Roorkee director Kamal Kishore Pant and others spoke on the inaugural day. Scientists from other CSIR labs, IITs, IISERs, IISc, various universities, and professionals from key industries are participating, said a press release.

CFTRI Mysuru to host technology showcase, networking meet on September 19-20

CSIR-CFTRI, NIScPR

18th September , 2024

To showcase the technologies developed by CSIR-CFTRI, Mysuru, a technology demonstration event titled “Technology Showcasing and Networking Meet of CSIR-CFTRI Food and Millet Technologies” is being jointly organised by CSIR-National Institute of Science Communication and Policy Research (NIScPR), CSIR-Central Food Technological Research Institute (CFTRI), Unnat Bharat Abhiyan (UBA) — National Coordinating Institute, IIT-Delhi and Vijnana Bharati (VIBHA), on the CFTRI campus here on September 19 and 20 (Thursday and Friday).

The objective of the event is to showcase and demonstrate the food technologies developed by CSIR-CFTRI for the benefit of stakeholders from rural areas of the country and how they can be leveraged to create livelihood opportunities in rural areas and promote sustainable development.

Innovative food tech to meet rural challenges

The CFTRI has developed a range of food technologies aimed at enhancing livelihood in rural areas. These technologies address critical challenges related to food processing, agricultural productivity, and value addition, enabling rural communities to improve their economic prospects, ensure food security, and enhance overall well-being, according to the institute.

The event aims to provide a platform where these innovations can be demonstrated to a wide range of stakeholders, including industry professionals, entrepreneurs, researchers, policymakers, and rural communities. By showcasing these technologies, the event seeks to foster collaborations, encourage technology adoption, and drive commercialisation efforts that can benefit both the food industry and rural development, a note from CSIR-CFTRI said.

Dual purpose

The event is designed to be both a technology demonstration and a networking opportunity, where participants can explore potential collaborations, technology transfer, and commercialisation opportunities. This can help to translate scientific research into practical, impactful solutions that can drive growth and innovation in the food sector for rural communities, the scientists said.

The expected outcome of the event is to enhance understanding of the technologies available at CSIR-CFTRI and to increase their adaptation rate for livelihood creation and income enhancement in rural areas. The event will also serve as a catalyst in the exchange of ideas and fostering partnerships, and the event will contribute to the adaptation of CSIR technologies, the release added.

The participation will help to explore how technological advancements can transform rural economies and empower communities.

Increase awareness, boost visibility

The conference includes presentation/demonstrations of CSIR-CFTRI technologies for rural livelihood creation; interaction with funding agencies about the knowledge of different funding scheme available; scientist-participants' interactions and success stories' demonstration by CSIR-NIScPR, CSIR-CFTRI, UBA, and VIBHA.

The conference is expected to increase the awareness level of the stakeholders about CSIR-CFTRI technologies as well as boost the visibility of such technologies. The identification of potential area of application for CSIR-CFTRI technologies is another objective.

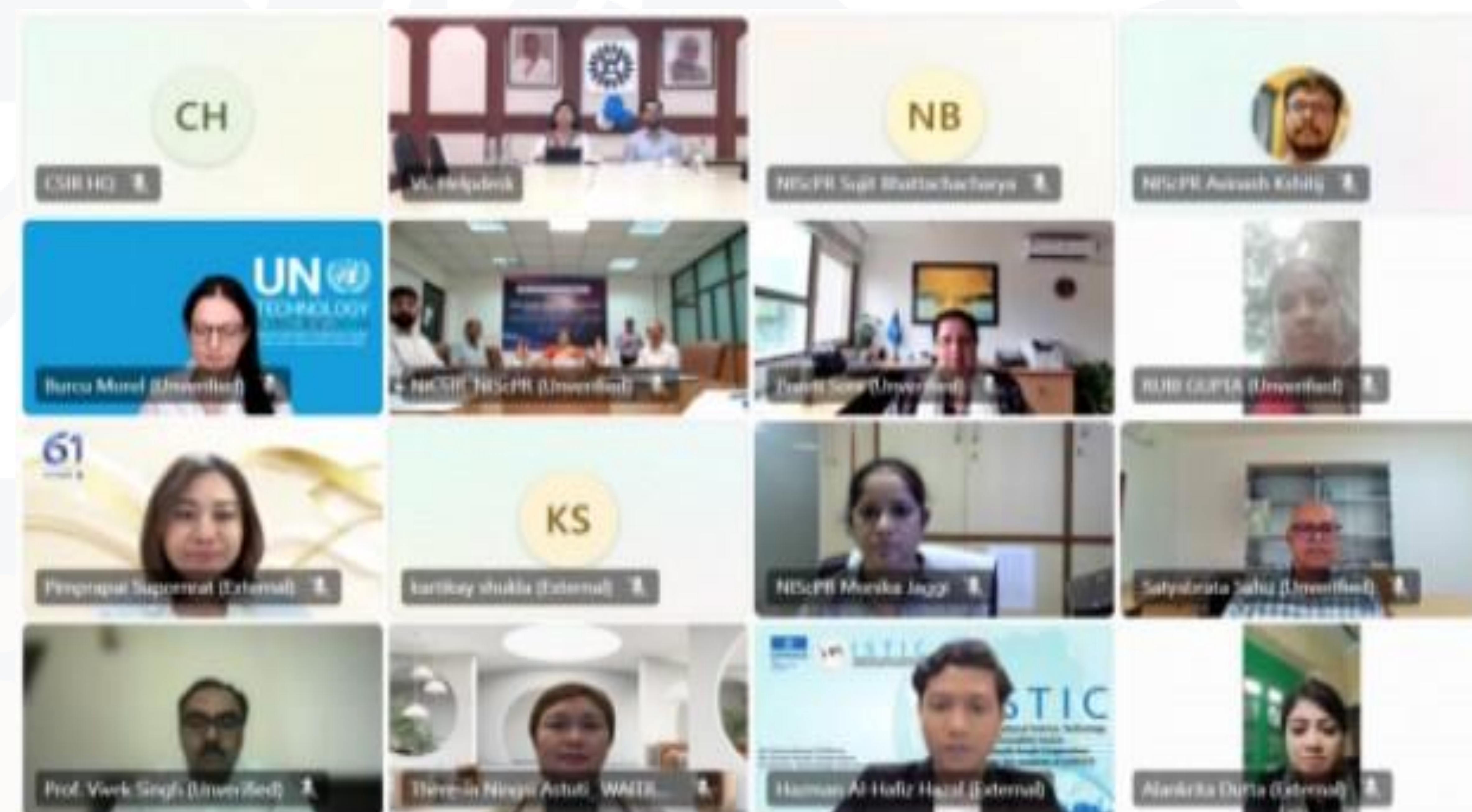
The inaugural of the conference will be held at 10 a.m. in the campus with the director of CSIR-CFTRI, Dr Sridevi Annapurna Singh delivering the welcome address.

CSIR, APCTT-UN ESCAP and WAITRO jointly organized Conclave on Policy Deliberations for Strengthening South-South Cooperation

CSIR-NIScPR

18th September , 2024

CSIR in partnership with APCTT-UN ESCAP (Asian and Pacific Centre for Transfer of Technology), and WAITRO (World Association of Industrial & Technological Research) organized a Conclave on Policy Deliberations for Strengthening South-South Cooperation on 11th September 2024 in online mode. The programme was designed and coordinated by CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR) with CSIR-International International S&T Affairs Directorate (CSIR-ISTAD) and hosted by NIScPR.



The Conclave brought together several global institutions and eminent scholars from South countries. Head/Senior experts of major global institutions focusing on South countries: APCTT, WAITRO, ISTIC-UNESCO International Science– Framework for Ethical and Responsible Governance, West Asia North Africa Institute Jordan, UN Technology Bank for Least Developed Countries gave presentation in this conclave. Experts from various research institutions included National Research and Innovation Agency Indonesia, CSIR-NIScPR, CSIR-ISTAD, CSIR-IMD (Innovation Management Directorate), Wits Business School South Africa, National Research and Innovation Agency Indonesia, Computer Science Department-Delhi University, Indian Institute of Technology-Delhi, University of Nebraska –Lincoln USA, Institute for Studies in Industrial Development, Indian Institute of Science, Department of Science and Technology, Tshwane Univ of Technology South Africa.

Conclave deliberated on how South countries through cooperative partnership can create Responsible governance for science and innovation for achieving Sustainable Development

Goals, especially Goal 5 (Gender equality and empower all women and girls) and 17 (Partnerships for Sustainable Development Goals). The potential partnerships among South countries and possibilities that can be created were highlighted to determine how challenges can be addressed more effectively and how the south-south connect can leverage the existing efforts of individual nations. The Conclave followed by the inaugural session, had three technical sessions. Session 1 was on the topic 'Responsible Governance for Research and Innovation', Session 2 discussed 'Diversity, Equity, and Inclusion in Science', and Session 3 addressed 'Funding Mechanisms and Capacity-Building for R&D Cooperation.'

In the inaugural session, Prof Ranjana Aggarwal, Director CSIR-NIScPR shared a broad overview of the Conclave and its significance. She stressed the need to explore new models and mechanisms that can lead to responsible research and innovation in science, Open science, access to resources, gender equity, diversity and inclusion. She highlighted that the conclave's outcome will be presented on 19th September at the Science Summit at the 79 UN General Assembly CSIR Science Session on 'Strengthening South-South Cooperation for Achieving SDGs'.

Dr Rama Bansal, Head CSIR-ISTAD highlighted the role of CSIR in strengthening India's scientific and technological capacity. Dr. Preeti Soni, Head, APCTT- UN ESCAP, and Ms. Theresia Ningsi Astuti, Regional Representative for WAITRO and National Research and Innovation Agency (BRIN) in Indonesia highlighted the role played by their organizations in enhancing the scientific and technology capacity of South countries and in supporting them for achieving Sustainable Development Goals.

Session 1 was chaired by Prof. Mammo Muchie, DST-NRF SARChI Chair Rated Research Professor in Innovation Studies at Tshwane University of Technology, South Africa. This session focused on responsible governance in the context of research and innovation, emphasizing the need for an open science framework that bridges gaps between North and South countries. The session was moderated by Dr. Yatendra Kumar Satija, Senior Scientist at ISTAD-CSIR. Panellists were Prof. Ravinder Rena from Durban University of Technology,

South Africa; Dr. Diran Soumonni from Wits Business School, South Africa; Prof. John Kalu Osiri from the University of Nebraska-Lincoln, USA; Prof. Vivek Singh from the University of Delhi; and Prof. ChM Dr. Mohd Basyaruddin Abdul Rahman from ISTIC-UNESCO.

The following topics were discussed: Creating enabling policies for an open science framework, Bridging the North-South divide in scientific knowledge and resources, Responsible governance practices that foster inclusion, resource sharing, and sustainability, Developing frameworks for ethically acceptable and socially desirable research in South countries.

Session 2 was chaired by Prof. Rohini Godbole from the Centre for High Energy Physics, Indian Institute of Science (IISc), Bangalore. The session was moderated by Dr. Naresh Kumar, Chief Scientist at CSIR-NIScPR. Panelists were Prof. Vivek Kumar from IIT Delhi's Center for Rural Development and Technology; Dr. Yara Shaban, Head of the WANA Office and Senior Researcher at the West Asia-North Africa (WANA) Institute in Amman, Jordan; and Prof. Ranjana Aggarwal, Director CSIR-NIScPR. The panelists drew attention to the need for developing the policies that promote diversity, equity, and inclusion in science, with emphasis on empowering women in STEM and addressing rural development. Some important examples from Indian policy and implementation in this direction were highlighted.

Session 3 was chaired by Prof. Nagesh Kumar, Director and Chief Executive of the Institute for Studies in Industrial Development (ISID) and Formerly Director at UNESCAP. Dr. Mahesh Kumar, Senior Principal Scientist at the Innovation Management Directorate (IMD), CSIR, moderated the session. The Panelists were Prof. Mammo Muchie from Tshwane University of Technology; Dr. Preeti Soni from APCTT; Dr. S. K. Varshney, Former Adviser and Head of International Cooperation at the Department of Science and Technology (DST) and Dr Rama Bansal of CSIR-ISTAD.

This session addressed the funding mechanisms and capacity-building for R&D cooperation, exploring various funding instruments and schemes that support science and technology

initiatives aligned with SDGs. Examples of successful interventions and capacity building in South countries were highlighted by APCTT, CSIR, and DST.

The conclave concluded with a detailed analytical summary of key issues discussed and promising pathways that South countries have shown in meeting challenges by Dr. Sujit Bhattacharya, Chief Scientist at CSIR-NIScPR. The Conclave underscored the need for South countries to create mechanisms that can promote learning and sharing which is a collective endeavor to create Science-Technology-Innovation ecosystem in South countries for meeting developmental challenges and addressing Sustainable Development Goals.

Council of Scientific and Industrial Research organises 5C for Global Sustainable Development at the Science Summit of the 79th UNGA

CSIR

18th September , 2024

The Council of Scientific and Industrial Research (CSIR), as part of the Science Summit at the 79th United Nations General Assembly 2024 (SSUNGA79), is organising the "CSIR for Connect, Collaborate, Converge and Convert (5C) for Global Sustainable Development" on 18 and 19 September 2024. The two-day event, which will encompass six sessions with 29 speakers and a panel discussion, will showcase CSIR's contributions to science and technology and its efforts towards global sustainable development and strengthening South-South cooperation.



During the inaugural session, Dr N. Kalaiselvi, Director General, CSIR and Secretary, Department of Scientific and Industrial Research, Government of India, emphasised the importance of South-south cooperation for the achievement of SDGs at the global level. Dr Rama Swami Bansal, Head of International S&T Affairs Directorate, CSIR, gave an overview of the programme.

Six scientific sessions will be held over the two days. The topics of the scientific sessions include:

Affordable Healthcare for Global Society
Food and Agriculture
Environment and Waste Management
Sustainable Infrastructure
Climate Change

Encouraging South-South Cooperation for Sustainable Development

Directors and scientists of several CSIR labs are speaking at the UN Science Summit event. The "Strengthening South-South Cooperation for Achieving SDGs" session is being organised in partnership with WAITRO and APCTT with international experts from several International RTOs, Embassies and NAM S&T Centre.

SSUNGA79 is featuring about 400 sessions out of which five sessions were selected for live streaming at United Nations Educational, Scientific and Cultural Organization (UNESCO) including CSIR session.

One innovation, three solutions: NIO devises new tech to convert plastic into biodiesel and protect environment

CSIR-NIO

16th September , 2024

With the country grappling with plastic pollution, depleting petroleum reserves and global warming due to burning of fossil fuel, the CSIR-National Institute of Oceanography (NIO) has devised a new technology that can deal with the three problems in one go.

It will convert plastics into biodiesel using marine bacteria, which will have low carbon emissions. This would be possible through a novel integrated bioreactor system, designed by Abhay B Fulke, Senior Scientist at the NIO's Microbiology Division.

The study on the technology's efficacy has been published in the Elsevier journal 'Bioresource Technology'.

“This study mainly focuses on biodegradation of various types of plastics and comprises two major parts - plastic remediation using highly efficient indigenous marine bacteria *Pseudomonas mendocina* ABF786 and conversion of the by-product carbon dioxide (CO₂), obtained from bacterial degradation of plastics to microalgal biodiesel. We have also mapped the whole genome of marine bacteria *Pseudomonas mendocina* ABF786, representing the plastic-degrading enzyme and genes,” Fulke said.

Speaking about the 'Integrative Reactor' technology, the senior NIO scientist said, “Novel integrated bioreactor system comprises of two different chambers- in the first chamber bacterial degradation of plastic takes place and the byproduct CO₂ that is generated by bacterial degradation of plastic have bypassed to another chamber where microalgal cultivation takes place. This biodiesel has been obtained from microalgal biomass. One of the major nutrients required for the growth of microalgae is CO₂. We have supplied CO₂ for the growth of microalgae that has been obtained from bacterial degradation of plastics.”

When asked about how much plastic this technology can convert into biodiesel, Fulke said, “So far in our laboratory we have converted around 16.67% to 19.17% of the plastic for microalgal biomass production and for further qualitative biodiesel purposes. However, this value could be increased, if we use a continuous reactor with larger volume.”

“Additionally, we are suggesting a green and sustainable replacement to petroleum-based fuels in the form of microalgal biodiesel. Therefore, this technology not only involves mitigation of plastic hydrocarbons which ultimately pollutes the environment but also supports the use of environment friendly microalgal biofuel. The nutrient required for the growth of microalgal biomass would be supplied by biodegradation of plastics in a continuous way,” he said.

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