

KSCSTE NEWS

A QUARTERLY NEWSLETTER OF KSCSTE
VOL.III ISSUE I JANUARY - MARCH 2024



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**KERALA STATE COUNCIL FOR
SCIENCE, TECHNOLOGY AND ENVIRONMENT (KSCSTE)**

കേരള ശാസ്ത്ര സാങ്കേതിക പരിസ്ഥിതി കാൺസിൽ

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Layout, Design & Print

SB Press Pvt. Ltd.

Thiruvananthapuram

Ph : 0471-2471904

Published & Printed on behalf of

The Member Secretary, KSCSTE

Thiruvananthapuram

Published from

Kerala State Council for

Science, Technology and Environment (KSCSTE)

Sasthara Bhavan, Pattom, Thiruvananthapuram

(Private Circulation only)



Title Code: KERENG 02683

Cover Story

Prof. Morten P Meldal



Prof. Morten P. Meldal has been credited with discovering the ‘click reaction’ in 2001 that paved the way for rapid progress in the synthesis of a diverse array of molecules applicable in areas such as pharmaceuticals, materials chemistry, drug discovery, and biology. Awarded the 2022 Nobel Prize in Chemistry alongside Sharpless and Carolyn R. Bertozzi, Meldal’s contributions extended to his innovative techniques in peptide synthesis, including the use of polyethylene glycol (PEG)-based resins and fluorescence-based screening, as well as his development of microparticle matrix (MPM) encoding for molecular library identification.

Prof. Meldal was one of the major centres of attraction in the 36th Kerala Science Congress held during 8-11 February 2024 at Government College Kasaragod. Kerala Science Congress, started in 1989, is an annual mega science gathering of scientists and scholars in Kerala, organised by Kerala State Council for Science, Technology and Environment (KSCSTE) for revitalizing Research and Development activities in Kerala and to identify new talents in scientific research in Kerala and also to keep pace with the latest trends in science research.

Prof. Meldal, delivered a riveting talk in the Science Congress whose fervour for the subject left attendees spellbound. Prof. Meldal delved into his personal journey, tracing back his deep-rooted passion for chemistry to his childhood. Reflecting on his early years, Prof. Meldal emphasized the significance of observing nature as a fundamental catalyst for nurturing an interest in chemistry. “There is nothing beyond chemistry”, he proclaimed, highlighting the omnipresence of chemical processes in our daily lives and the natural world.

Addressing a hall packed with eager students and enthusiasts, Prof. Meldal shared anecdotes from his own experiences, showcasing how curiosity and observation can unlock the mysteries of chemistry. His words resonated powerfully as he urged the young minds present to embrace chemistry as not just a subject, but a profound journey of exploration and understanding. “Chemistry holds the key to unravelling the mysteries of the universe”, Prof. Meldal declared, inspiring a new generation to take up the mantle of scientific inquiry. His impassioned plea for curiosity-driven learning left an indelible mark on all those in attendance, igniting a spark of enthusiasm for chemistry that promises to endure for years to come.

Dr. Phaedria Marie St.Hilaire, CEO and Chief Consultant at Phaedria Marie Consulting and wife of Prof Morten P. Meldal, who was accompanying him, also spoke on women empowerment and career perspectives of women in STEM.

Prof. Meldal, a Danish chemist, significantly advanced click chemistry through his pioneering research in peptide synthesis, notably developing the copper-catalyzed azide-alkyne cycloaddition (CuACC) reaction. This reaction, which he independently discovered alongside K. Barry Sharpless, revolutionized research and development, particularly in materials science and pharmaceuticals. Furthermore, Meldal’s academic journey saw him graduated with a Ph.D. in chemical engineering from the Technical University of Denmark (DTU) in 1983. He then pursued postdoctoral research at prestigious institutions such as the MRC Laboratory of Molecular Biology at the University of Cambridge, before returning to DTU as a professor in 1996 and later accepting a professorship at the University of Copenhagen, where he became a pioneer in nanochemistry at the Nano-Science Center in 2011.

More than 500 students got an excellent opportunity to interact with the very recent Nobel Laureate and got inspired. The 36th Kerala Science Congress’s Focal Theme was “Transforming Kerala’s Economy through One Health Approach”. The highlights of the Science Congress included invited lectures by eminent scientists, memorial lectures, a session on applications of science & technology, poster presentations and research paper presentations by young scientists, exhibitions, interaction with PG students and research scholar, children’s’ science congress, walk with scientists, presentation of various Awards etc.

36th KERALA SCIENCE CONGRESS

The 36th Kerala Science Congress (KSC) was convened at Govt College Kasaragod from February 8th to 11th, 2024, on the focal theme “Transforming Kerala’s Economy through One-Health Approach.” Dr. Soumya Swaminathan, Chairperson of MSSRF, Chennai, and former Chief Scientist at the World Health Organization, was the chairperson of the 36th KSC. The association with KSCSTE-CWRDM and Govt College, Kasaragod, facilitated the successful conduct of this significant event.



Hon'ble Chief Minister, Shri. Pinarayi Vijayan, inaugurating the 36th Kerala Science Congress

The National Expo, one of the highlight of the 36th KSC was commenced on February 8th, 2024, at 11:00 am, inaugurated by the Hon'ble MLA Shri. N A Nellikunnu. Featuring the participation of 44 organizations across 99 stalls, the Expo showcased diverse activities. Notably, the Expo attracted a considerable audience, including schoolchildren and the general public from Kasaragod district and its vicinity.



National Expo inauguration by the Hon'ble MLA Shri. N A Nellikunnu

The Hon'ble Chief Minister, Shri. Pinarayi Vijayan, inaugurated the 36th Kerala Science Congress on February 9th, 2024, amidst distinguished guests. At the inauguration ceremony, Dr. S. Pradeep Kumar, Member Secretary and 36th KSC General Convenor extended a warm welcome to the gathering, while Prof. K.P. Sudheer, Executive Vice President, and President, 36th KSC presided over the event. The Chief Minister of Kerala released the Climate Statement for 2023 and presented several awards, including the Kerala Sasthra Puraskaram, Chief Minister's Young Scientists Gold Medal Awards, Science Literature Awards, and the KSCSTE Best Scientist Award. Sri Rajmohan Unnithan, Member of Parliament from Kasaragod released the abstract of the 36th KSC, and the vote of thanks was delivered by Dr. Manoj Samuel, Executive Director of KSCTE-CWRDM and Convenor, 36th KSC organizing committee.

Following the inauguration, Professor Morten P. Meldal, Nobel Laureate in Chemistry in 2022, delivered a captivating lecture that resonated deeply with all attendees. His talk emphasized the crucial

role of chemistry and served as a source of inspiration for students, encouraging them to pursue their aspirations in scientific careers. Professor Meldal's insightful presentation was warmly received and left a lasting impression on the audience.



Professor Morten P. Meldal

Prof. Soumya Swaminathan, presided over the focal theme lecture. Prof. Mathew George (Department of Public Health and Community Medicine, Central University of Kerala) and Dr. B Ekbal (public health activist) delivered the focal theme lectures. The MS Swaminathan Memorial lecture was given by Dr. Swati Nayak (International Rice Research Institute). Dr. AA Mao (Director, Botanical Survey of India) delivered the E K Janaki Ammal memorial lecture. Shri. K. Jayakumar (Director, Institute of Management in Government) presented the P.T. Bhaskara Panicker memorial lecture on February 10, 2024. Similarly, Prof. K.J. Joseph, (Director, Gulati Institute of Finance and Taxation) delivered the P.K. Gopalakrishnan memorial lecture on February 11, 2024.

A total of 348 research papers spanning 12 subjects were presented at the congress. These technical paper presentations were conducted simultaneously and rigorously evaluated by experts in their respective fields. Certificates for the best oral and poster presentations were awarded during the valedictory function, recognizing outstanding contributions to the scientific discourse.

A noteworthy aspect of the Kerala Science Congress was the inclusion of research paper presentations by young scientists selected for the national children's science congress. Differently abled Child scientists also showcased their research findings during these sessions, enriching the scientific exchange with their innovative contributions.

At the 36th Science Congress, four shortlisted proposals from SciSol, focusing on societal issues in Kasaragod and their scientific solutions, were presented. The best proposal received a cash prize of Rs. 50,000, generously sponsored by Union Bank.

The concluding speech of the event was delivered by Prof. S Bijoy Nandan, Vice Chancellor of the Kannur University. In the valedictory function, he presented the awards for the best paper and best expo stall.

Dr. Manoj Samuel, Convenor, 36th KSC organising committee presented the report on the 36th KSC.

Walk with Scientist



“Walk with Scientist” was a special interactive session for school students to walk with famous scientists/ academicians and to get inspired in science and technology by opening the mind through morning walks in the nature. A group of Scientists, namely Shri. M. C. Dathan (Scientific Advisor to Chief Minister, Kerala & Former Director, VSSC, Thiruvananthapuram), Dr.Suresh Das (Former Director, CSIR-NIIST, Thiruvananthapuram), Dr. P.E Rajasekharan (Principal Scientist, ICAR-IIHR, Bengaluru) and Prof. G. Anilkumar (Senior Professor, VIT University, Vellore, India) have been with the selected students at the campus of Govt. College, Kasaragod. The students were interacted with the scientists fruitfully and explored the current and future scope of science, technology and innovations. This session was helpful for students to generate curiosity, sharpen skills, and enhance scientific temper.

Post Graduate Student’s Interactive Session



36th KSC have arranged a dedicated session for PG students to get an opportunity to interact with the eminent scientists in the field. Prof. K. P Sudheer, Executive Vice President, KSCSTE was the moderator cum panel expert for the programme and following panel of experts participated

in the session, Shri M.C. Dathan, Dr. Suresh Das (Former EVP, KSCSTE), Prof. P.E Rajasekharan (Principal Scientist, ICAR-IIHR),



Prof. G. Anilkumar (Senior Professor, VIT University), Prof. K.P Sudheer (Professor, KAU), Prof. N. Sandhya Rani (Professor, NIT Calicut), Prof. Sudha Kappalli (Professor, Central University, Kerala), Prof. Aparna Lakshmanan. S (Professor, CUSAT). About 100 registered Post-graduate students from various universities and colleges across Kerala were participated in this programme

Memorial Lecturers

KSCSTE organised Memorial lectures as a prelude to 36th Kerala Science Congress and the details are as follows



G. N. Ramachandran Memorial Lecture: Dr. Shekhar C. Mande, former Director General, CSIR & Distinguished Professor, Bioinformatics Centre, Savitribai Phule Pune University, Pune delivered the commemorative lecture on 12th January 2024 at Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram



Thanu Padmanabhan Memorial Lecture was organised on 18th January 2024 at School of Pure and Applied Physics, MG University. **Prof. Ajith Parameswaran**, International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bangalore delivered the commemorative lecture.



PK Iyengar Memorial Lecture was organised on 22nd January 2024 at CWRDM. **Dr. D K Aswal**, Senior member, Trombay council, BARC, Mumbai delivered the commemorative lecture.

Science Literature Awards (2022)

Science Literature Awards (2022) were distributed by the Hon'ble. Chief Minister Sri. Pinarayi Vijayan during the inaugural function of 36th Kerala Science Congress. Each category Award comprises of a cash prize of Rs. 50,000/- along with a Plaque and Certificate.



Hon. Chief Minister Sri. Pinarayi Vijayan distributed the Science Literature Awards (2022) to Smt. Saga James, Dr. B Ekbal, Sri. C M Muraleedharan, Sri. P Suresh Babu and Smt. Seema Sreelayam

Kerala Sasthra Puraskaram Award 2022

Professor P. K. Ramachandran Nair (distinguished Professor of Agro forestry, University of Florida) was selected for the prestigious Kerala Sasthra Puraskaram award 2022 for his lifetime scientific achievements and significant contributions in the area of agroforestry. The award comprises of a Memento, citation and cash award of Rs. 2 lakh.



Hon'ble Chief Minister presented the award during the inauguration session of 36th Kerala Science Congress. Dr. Syam Viswanath, Former Director, Kerala Forest Research Institute received the award on behalf of Prof. P. K. Ramachandran Nair.

KSCSTE Best Scientist Award (2023)



Honorable Chief Minister presented the KSCSTE Best Scientist Award for the year 2023 to Dr. U. Surendran, Principal Scientist, KSCSTE-Centre for Water Resources

Development and Management in appreciation of his noteworthy research contributions, innovative contributions to science, capacity building efforts, mentoring and effective co-ordination of externally funded projects among the whole Scientists of KSCSTE System.

KSYS Awards -2023



Trainees in the Bio entrepreneurship Industrial Certification Programme (2022- 2023) of KBC, Ms. Krishnasree R S and Ms. Gauthame A, were awarded the Best innovation awards in the 'Start up and Incubation Centres' category.

Two Scientists were selected for KSYS Award- 2023. The awards were presented by the Hon'ble Chief Minister, at the inaugural session of 36th KSC



Dr Harsha Bajaj, Scientist, Microbial Process and Technology Division, NIIST. Thiruvananthapuram



Dr Murali S, Scientist & In-charge, Engineering Section, ICAR-Central Institute of Fisheries Technology, Kochi

KSCSTE TECHFEST 2024

The Technological Festival (TECHFEST) is an annual event organized by the Kerala State Council for Science, Technology, and Environment (KSCSTE). It mainly houses a contest of innovative engineering projects developed by students from engineering colleges across Kerala. With the primary objective of offering a platform for budding engineers to exhibit their projects and exchange insights, TECHFEST fosters an environment conducive to sharing experiences, ideas, and knowledge among participants.

The KSCSTE TECHFEST 2024 took place at the Indian Institute of Technology, Palakkad, from March 2nd to 3rd, 2024. The event was jointly organized by KSCSTE, IIT Palakkad and NSS College of Engineering. TECHFEST-2024 was inaugurated by Prof. A. Seshadri Sekhar, Director, IIT Palakkad on 2nd, March 2024 in a function presided by Prof. K. P. Sudheer, Executive Vice President, KSCSTE. Prof. Seshadri also released the proceedings of KSCSTE TECHFEST 2024. Prof. Santhakumar Mohan, Dean ICSR, IIT Palakkad and Prof. Suresh P. R., Principal, NSS College of Engineering gave the felicitation during the inaugural programme.



Prof. A. Seshadri Sekhar, Director, IIT Palakkad inaugurating the KSCSTE TECHFEST

Apart from the project contest, KSCSTE TECHFEST 2024 featured four dynamic technical ideathons, held in collaboration with esteemed professional bodies and industries Collaborators such as IEEE, Saint Gobain, HailStone Innovations, and Genrobotics partnered with KSCSTE to sponsor these

ideathons. This proactive collaboration not only enriched the overall event experience but also facilitated invaluable industry-academia partnerships, nurturing knowledge exchange, skill enhancement, and laying the groundwork for future collaborations.



The winners of the TECHFEST project contest and technical ideathons were honored with awards distributed by the Chief Guest.



Release of proceedings of
KSCSTE TECHFEST 2024

A notable highlight of KSCSTE TECHFEST 2024 was the Industry Interaction Session, designed for the students' benefit. Four prominent industries—Saint Gobain, Genrobotics, Hailstorm, and Lenore Industries—actively engaged with students, fostering an elevation in their innovative and entrepreneurial spirits.

The Valedictory function of KSCSTE TECHFEST 2024 took place on March 3rd, 2024, at 3:30 p.m. Prof. Saji Gopinath, Vice Chancellor, APJ Abdul Kalam Technological University, was the Chief Guest for the valedictory function.

As part of KSCSTE TECHFEST-2024, a post-event industrial visit to Saint Gobain, Hail Stone Innovations, and Genrobotics was also organized on March 4th, 2024.

TECHFEST-2024 proved to be a resounding success with substantial public engagement and vibrant interactions between visitors and participants. The project exhibition garnered significant attention, drawing numerous students from IIT Palakkad and neighboring educational institutions.

Four New research projects sanctioned under KSYSA Research grant scheme.

1. Giant-Magneto-Resistance Eddy-Current Probes and Linearized Digitizing Electronic Systems for Non-Destructive Evaluation of Metallic Specimens.
 2. On best approximation, orthogonality and differentiability in the space of bounded operators on Banach spaces
 3. Lipidomics and vibrational spectroscopy based chemo informatics for comprehensive assessment of quality in seafood supply chain
 4. An automated machine learning based pipeline for generation of 3D Digital twin city models and topographic digital database from airborne LiDAR dataset: Case study of Thiruvananthapuram city
- Collaborative programme of KSCSTE with Chhattisgarh Tribal Local Health Traditions and Medicinal Plants Board (CGSMPB).

Kerala State Council for Science, Technology and Environment (KSCSTE) has initiated a collaborative programme with Chhattisgarh Tribal Local Health Traditions and Medicinal Plants Board (CGSMPB), State



Forest Research and Training Institute, Raipur, for the improvement of Medicinal & Aromatic Plant (MAP) cultivation at Chhattisgarh. Six projects from KSCSTE-JNTBRI, KSCSTE-KFRI, KSCSTE-MBGI PS submitted with Dr. S. Pradeep Kumar, Member Secretary, KSCSTE as the Executive Authority from KSCSTE and Dr. K. Vijayakumar, Principal Scientist, KSCSTE as Project Co-ordinator was sanctioned and work initiated.

Shri. JACS Rao, CEO, CGSMPB with Dr.S. Pradeep Kumar, Dr. P.E. Rajasekharan, Former Principal Scientist, IHR and scientists of KSCSTE during the visit to KSCSTE- JNTBGRI in connection with the Collaborative programme.

- Sanction was accorded to CWRDM for implementing a consultancy project entitled “Measures to Mitigate Water Related Issues of Perumanna Panchayath, Kozhikode” funded by Perumanna Panchayath, Kozhikode.
- National Bamboo Mission, Govt. of India funded a study on ‘Identification of genetically superior bamboo species – Phase 2’ (GO IRP 879/2024).
- Kerala Forests and Wildlife Dept. (KFD) funded a study on ‘Wood Balance Study in Kerala During 2022-23’ (GOK RP 880/2024).
- National Medicinal Plants Board (NMPB) - RCFC (SR), Govt. of India funded ‘QPM production of high-value medicinal plants through micropropagation to compensate the resource limitation’ (GOI EP 387/2024).
- International Tropical Timber Organization (ITTO), Japan funds ‘5th World Teak Conference (5th WTC) titled ‘Developing Sustainable Development of the Global Teak Sector- Adapting to Future Markets and Environment in Kerala, India’ (INT EP 388/2024).
- National Bamboo Mission, Govt. of India funds ‘Establishment of Bamboo seasoning plants’ (GOI EP 389/2024).

- The Garden Management Division of JNTBGRI has undertaken the beautification and re-landscaping of the frontage garden with rubble steps leading to the granite paved foot path, floral beds of *Pentas*, *Euphorbia milii*, *Coreopsis*, *Lantana* and *Ixora* in the carpet grass background of 4500 m² area, 250 m² road paved with interlock underneath the *Ficus* model, 1700 m² area covered with carpet grass in front of the tissue culture laboratory, 500 m kerb stone boundary throughout the borders of the renovated landscape, 75 m² area paved with interlock towards the fruit garden, visitor’s leisure garden on the riverbanks and the VMC (Visitors Management Centre) and the reservoir area, terrace landscaping opposite the parking ground and shifting of the sales pavilion and sales counter into a new location near bambusetum



- Statistical downscaling and bias correction of CMIP6 GCM models for Kerala.
- Setting up of runoff forecasting system using GEFS for Bharathapuzha river basin.
- Setting-up of satellite-based drought early warning system for Bharathapuzha river basin.



The Annual Climate Statement was released by the Honorable Chief Minister of Kerala during the 36th Kerala Science congress in the presence of Nobel laureate Prof. Morten P. Meldal, Kasaragod on February 2024.

- A novel methodology combining Google Earth Engine, Edge Detection Algorithm, and QGIS to extract the shoreline using Landsat and Sentinel imagery

Centre of Excellence in Microbiome (CoEM)

Microbiome research is one of the vibrant field that has recently attracted key attention across the globe. To effectively utilize the various possibilities in this field, Govt. of Kerala decided to establish a Centre of Excellence in Microbiome (CoEM) in the State. Honorable Chief Minister Sri Pinarayi Vijayan officially released the Centre's logo on 5th February 2024. Director Dr. Sabu Thomas, submitted the action plan covering various activities of the new Center to the Chief Minister. The Centre of Excellence in Microbiome is envisioned as a significant global center that coordinates inter disciplinary research, cross domain

collaborations and innovative product development to boost the role of microbiota in a One Health perspective. Microbiome research is significant in the context of post-COVID19 era. The Centre will serve as a global hub for research and entrepreneurship in key domains of microbiome – Human, Animal, Plant, Aquatic and Environment. Such an institute dedicated to microbiome to explore the possibilities of diversified microflora will be the first of its kind in the country. The center intends to leverage the potential of Next Generation Sequencing, Big Data analysis and Artificial Intelligence to create spatio- temporal mapping of microbiome across the population.



CoEM

KFRI

- Developed an AI-powered Machine Learning Algorithm (Mycorrhiza) for timber forensics.
- Invented a teak seed scarifying machine (a new tool)
- Customized and implemented software tools (ODK/KoboCollect) for efficient field data collection in various wildlife and ecological studies.



Seed Scarifier

- JNTBGRI has recently discovered that the growing *Nepenthes* pitchers carry carbon dioxide (CO₂)-enriched cavities, holding nearly ten times (≈ 4000 ppm) the atmospheric level of the greenhouse gas within them. Open pitchers emit CO₂ as a cue attracting preys towards them. The study also demonstrates that the most critical features of *Nepenthes* prey traps such as their growth, metabolism, prey capture, digestion and herbivory are driven by the CO₂ within them. *Nepenthes* pitchers are classic examples of leaf-evolved structures displaying manifestations of elevated CO₂ within them. Further, it is showed that the extrafloral nectar (EFN) secreted by *Nepenthes* pitchers, long regarded as the nutritional 'reward' to the visiting arthropods, is a carbohydrate-rich secretion devoid of key nitrogenous constituents such as amino acids, proteins (low) and vitamin C.



Moreover, *Nepenthes* EFN and its constituent, (+)-isoshinanolone, displayed strong inhibition of acetylcholinesterase (AChE) *in vivo* and *in vitro*. This AChE inhibitor is a promising insecticidal entity and a likely candidate for Alzheimer's disease therapy. The studies testify that *Nepenthes* EFN is 'a toxic sugar bait' which hinders neuronal activity and flight of the visiting arthropods. In fact, *Nepenthes* EFN plays the dual role of a lure and a toxin. These unique traps adopt various deceptive strategies for prey capture, and our discovery eliminates the notion that *Nepenthes* EFN is a 'reward' to visiting ants and other arthropods.



Conobregma lek

The rogadine genus *Conobregma* is newly reported from India and Thailand. We describe two new species, *C. embigi* Ranjith from India and *C.*



Conobregma embigi

lek Ranjith from Thailand. *C. embigi* was discovered as part of our Ecological studies related to interactions with Dipterocarps trees and insects. *C. embigi* was collected from campus of KSCSTE- Malabar Botanical Garden and Institute for Plant Sciences. *C. embigi* is named after KSCSTE-Malabar Botanical Garden and Institute for Plant Sciences, Kerala, India in recognition of the outstanding contribution towards the taxonomy and conservation of plants. The acronym 'MBG' is widely used to refer to the institution and is pronounced in English as Em-Bi-Gi.

JNTBGRI

MBGIPS

CWRDM

KFRI

Facilities / Infrastructure

- Audio- Visual facilities upgraded in Lecture hall-2 of CWRDM Headquarters
- CWRDM established new CO₂ Chamber Facility
- Established a model nursery at Devikulam Field Research Station, Munnar for QPM production especially of shola species. Funded by **National Horticulture Mission, Govt. of India.**
- Installed Confocal Micro-Raman Spectrometer System, Funded by **KSCSTE Special Programmes**
- Established insectarium at Forest Entomology Department, KFRI.
- Established a Bark and Ambrosia beetle culture room at Forest Entomology Department, KFRI.

- As part of the National Bamboo Mission project, a museum for scientific display and demonstration of Bamboo products for extension-education and a Bamboo Craft Centre for skill development has been established at JNTBGRI.



Amphitheatre

JNTBGRI

MBGIPS

- RET Conservatory and crop germplasm (cowpea, tubers, wild edibles, etc.) maintained at the centre. Harvesting completed in crop germplasm and planting will initiate from April onwards.



- Harvesting completed from the Community Conservation plots raised at tribal hamlets for conservation of traditional germplasm of various tubers (14 varieties of 5 tuber crops), leafy greens and other vegetables. This has enabled them to secure livelihood and economic security.

- Inaugural event of the joint venture of MSSRF, Nenmeni Panchayth, Agriculture Department and Kisan Service Society for promoting millet cultivation in 60 acres in Nenmeni Panchayth.



Technologies Established/Demonstrated

- CWRDM developed a prototype of water filter with silver doped nano titania coated Fe_3O_4 @chitosan core-shell magnetic beads for removal of nitrates from drinking water

Research / Academic Programmes :

	CWRDM	KFRI	JNTBGRI	NATPAC	MBGIPS	ICCS	MSSRF
Plan funded	54	37	21	23	1	5	
Externally funded	18	45			4	2	
Consultancy funded	22	11		14			
PhD	3	36	30		6		
PDF	1						
M. Tech/ MSc Dissertation	12			17			
Internship		6		26	33		25

Training programmes/ Workshops/Internships

EEP Kerala- Children's Green Parliament

DIMC Trivandrum district is organised Children's Green Parliament to discuss environmental issues on 18th January 2024 in the Old Legislative Building of Kerala Niyamasabha. The program was organised under the Thematic Campaign program of Environment Education Program of the Ministry of Environment Forests and climate change & KSCSTE.



The Children's Green Parliament was a great platform for young minds to discuss and propose solutions to environmental issues. 150 participants from various schools have been selected for the Green Parliament event. The selected students represented the Governor, Chief Minister, other Ministers and Opposition leaders, watch and security guards for the event. The focus of the Green Assembly was to create awareness for young generation on various environment problems near us and to educate and engage young minds on environmental conservation. The programme was inaugurated by the Hon'ble Speaker Shri. A.M Shamseer. Shri V.K Prasanth, MLA, Dr. Anilkumar C, State Nodal Officer EEP, Smt. J. Thanakmony, DDE and Dr. Anuja MM, Project Officer EEP attended the programme.

EEP Kerala-Thematic campaigns

Thematic Campaign programme under EEP Kerala aims to raise public awareness on environmental issues through various activities like cleaning beaches, rivers, ponds, and public places, as well as

organizing field trips to protected areas and adopting them, organising awareness rallies etc. The involvement of students and the public in these campaigns is crucial for creating a positive impact on the environment. KSCSTE and NGC District Implementation Committee organized 163 programmes involving the participation of more than 250 Ecoclub schools across the 14 districts during January –March 2024.



EEP Kerala-Thematic competitions

Thematic Competitions was organized under the Lifestyle for Environment (LiFE) mission by KSCSTE – EEP Kerala for National Green Corps ecoclub students of various districts. These competitions, including Quiz, Debate, Essay, and Painting, provide a great platform for students to showcase their talents



and knowledge on environmental issues. As part of the programme 28 competitions were conducted across 14 districts during January-March 2024 shows a strong commitment to promoting environmental awareness and education among students.

District level stakeholders' Brainstorming workshop

The Scheduled caste & scheduled tribe cell at KSCSTE organized the Palakkad district level stakeholders' Brainstorming workshop on Science and Technology for the sustainable development of Scheduled Caste (SC) and Scheduled Tribe (ST) communities at Integrated Rural Technology Centre (IRTC), Mundur on 21st February 2024. The programme was inaugurated by Dr. S.Chithra IAS, District Collector, Palakkad. Delegates from Stakeholding Departments, Peoples representatives NGO's, Community representatives and scientist from R&D institutions participated.



Field Survey

The Project team of SC&ST cell conducted field survey in the various settlements of SC and ST community in Kasaragod, Thrissur, Palakkad, Thiruvananthapuram and Pathanamthitta districts to collect the data pertaining to the livelihood to identify the requirements of Science and Technology based solution for the sustainable development.



World Wetland Day 2024

EIACP Kerala in collaboration with KSCSTE - CWRDM celebrated World Wetland Day on 1st February 2024 through action oriented programme at Sarovaram Biopark, Kottuli Kozhikode. The programme was inaugurated by Dr Manoj Samuel, Executive Director, CWRDM in a function presided Dr. P. Harinarayanan Senior Principal Scientist & EIACP Kerala Coordinator. Lecture on focal theme, Photography & Quiz competitions were the highlights of the programme.



World Water Day 2024

EIACP Kerala in collaboration with KSCSTE- Kerala Forest Research Institute (KFRI), Peechi, and Government engineering college Thrissur celebrated World Water Day 2024 on 22nd March 2024. A discussion on the topic Forests for Water: Fostering Prosperity and peace was organised as part of the celebrations. The programme was inaugurated by Dr. N. Krishnakumar IFS (Rtd), Chairman, Research Council, KSCSTE-KFRI. Dr K P Sudheer Executive Vice President, KSCSTE, Dr E J James, Former Executive Director CWRDM, Prof. Sumit Sen, IIT Roorke, Dr Pramod G Krishnan APCCF, Dr T V Sajeev, Dr Seena P, Dr. P. Harinarayanan and Dr. V. Anitha, spoke during the programme. More than 150 participants attend the programme.



Mission Life Programme

As a part of Mission LiFE programme EIACP Kerala conducted awareness programmes on schools/ colleges/ government institutions. The event highlighted on the themes Save Energy, Reduce Single Use Plastics, Water Saved, Reduce E Waste and Healthy Lifestyles. 400 participants were sensitized as a part of the programme and also took Mission LiFE pledge to follow sustainable life style practices.



KSYSYA Travel Grants released to Dr. A. M Ramiya, to attend the "ISPRS Geospatial Week 2023: Remote Sensing for Better Future scheduled to be held at Cairo, Egypt"

Dr. Sudharshan Karthik, to attend the "49 th International Conference of the IEEE Industrial Electronics Society IECON-2023 at Marina Bay Sands Expo & Convention Centre, Singapore.

DBT Skill Vigyan Faculty Training Programme Conducted in Various institutes

Jawaharlal Nehru Tropical Botanic Garden and Research Institute (KSCSTE-JNTBGRI), Palode has conducted Faculty training Programme in the topic of "Gas Chromatographic Techniques in Aromatic Plants Research" from 16th January 2024 to 1st February 2024 (14 Days).



Amritha School of Biotechnology, AmrithaViswavidyapeetam, Kollam has conducted Faculty training Programme in the topic of "LC_MS of Biomolecules" from 29th January 2024 to 14th February 2024.



Centre for Plant Biotechnology and Molecular Biology (CPBMB), Kerala Agriculture University Vellanikkara, Thrissur has conducted two batches of Faculty training Programmes in the topic of 'Molecular Biotechnology and Bioinformatics'. The first batch from 24th January 2024 to 09th February 2024 and second batch from 19th February 2024 to 05th March 2024.



Cochin University of Science & Technology (CUSAT) has conducted Faculty training Programme in the topic of 'Cell Culture Techniques for Biotechnology Applications – Focus on Neurobiology and Cancer' from 14th February 2024 to 27th February 2024.



Rubber Research Institute of India, Rubber Board, Kottayam has conducted Faculty training Programme in the topic of 'Recent Advances in Molecular Biology and Biotechnology' from 6th March 2024 to 19th March 2024



Business Incubation Centre - KUFOS, Kerala University of Fisheries and Ocean Studies (KUFOS), Cochin has conducted



Faculty training Programme in the topic of "Training on Development of sustainable packing techniques of fishery food products" from 19th February 2024 to 6th March 2024.



DST- Science Engineering Research Board funded Kaaryashala (High-End Workshop) on Plant Bio prospecting was organized by KSCSTE at KSCSTE- MBGIPS from 20-26th March 2024. 29 aspiring researchers and PG students in plant sciences from the 14 states of India participated in the week long hands-on training programme. The participants were provided with hands on training in the processes and analytical techniques during the various stages of bio-prospecting from plants and also in the bioinformatics tools in plant research. Experts from premier R&D institutions and academia interacted with the participants.

Training Workshop for IPR Cell Co-ordinators

Patent Information Centre – Kerala, Kerala State Council for Science Technology & Environment, Department of Science & Technology, Govt. of India, in association with College of Engineering Trivandrum organized a two-day Training Workshop for the IPR Cell Coordinators on 10th & 11th January, 2024, at College of Engineering Trivandrum. Prof. K.P. Sudheer, Executive Vice President, KSCSTE & Principal Secretary, Science & Technology Department, Government of Kerala inaugurated the Workshop, in a function presided over by Prof. J. S. Savier, Principal, College of Engineering Trivandrum. There were 7 Technical Sessions on various aspects of IPR, which were lead by national level experts. The review of performance of IPR Cells was also carried out during the course of the Workshop on January 10, 2024. There were 32



Prof (Dr.) K.P. Sudheer, Executive Vice President inaugurating the Workshop



Dr.Saji Gopinath, Vice Chancellor, Digital University of Kerala presenting Memento for the best IPR Cell Award

participants which include 23 IPR Cell Co-ordinators.

Based on the performance during the past five years and as recommended by the Technical Committee, the IPR Cell of NSS College of Engineering, Palakkad is selected for the best IPR Cell Award. Dr.Saji Gopinath, Vice Chancellor, Digital University of Kerala was the Chief Guest for the Valedictory Function held on January 11, 2024, and he presented the Memento for the best IPR Cell Award.

Seminar on 'Intellectual Property Rights'

KSCSTE - IPRIC-K jointly with the IPR Cell of Sophisticated Test & Instrumentation Centre (STIC) and Dept of Ship Technology, CUSAT, organized a Seminar on 'Intellectual Property Rights'



at Dept of Ship Technology, CUSAT, Cochin, on March 15, 2024. Prof. P.G.Sankaran, Vice Chancellor, CUSAT inaugurated the Seminar. Technical Sessions on different aspects of IPR including Overview of IPR and Patenting System in India & Patent searching procedures' were covered in the Seminar, which was handled by IPR Experts. Around 70 participants including UG, PG Students, Research Scholars, Startup Professionals and faculty members attended the Seminar.

Workshop on 'Patenting System in India and Patent Filing Procedures'

KSCSTE-IPRIC-K jointly with the IPR Cell of SCMS School of Technology and Management, Cochin, organized a one day Workshop on 'Patenting System in India and Patent Filing Procedures' at SCMS School of Engineering



& Technology, Cochin on 16th March 2024. The Technical Session was handled by Dr. Asha R, Project Scientist- II, Patent Information Centre-Kerala, KSCSTE. Around 50 Students/ Researchers/ Faculty members attended the Workshop.

- Conducted Water Resources Management Training Programme (WRMTP) on 'Wetland Conservation and Management' during 4-6 January 2024.
- Organized "Sustainable Life Style Workshop for School Students" under National Green Corps during 17-01-2024 to 20-01-2024 supported by Ministry of Environment, Forests & Climate change and KSCSTE
- Conducted WRMTP training programme on 'Environmental Impact Assessment' from 21-23 February 2024.
- CWRDM- Neyyattinkara sub centre conducted two day training programme on "Introduction to Carbon neutral Assessment" on 22-23 February, 2024
- CWRDM Neyyattinkara sub centre organized one day workshop

at SC NTA on Sustainable lifestyle workshop for NGC students funded by Ministry of Environment. Forests and Climate change through KSCSTE on 24.01.2024

- Conducted two training programs on ‘Homestead water management and organic spice cultivation’ sponsored by MIDH-DASD during 20 and 21st of March 2024.
- Conducted one-week training programme on “Training of Trainers (ToT) - Integrating climate change adaptation in water resources planning and management” during the period from 8th to 12th Jan 2024 funded by Ministry of Jal Shakti, Govt. of India. Around 19 officers from different States in India participated the training. Training was coordinated by Er. Ambili G.K and Dr. Thenmozhi M, TORG.
- Conducted WRMTP training on Protected Cultivation: Future Scenario in Agriculture’ during 19th to 21st March 2024 at CWRDM HQ.
- CWRDM Manimalakkunnu Sub centre Conducted an awareness programme in connection with World Water Day and International Day of Action for Rivers on Water availability and quality for public health at Erattayar Panchayat, Idukki on 20 March 20243
- Conducted an innovative Citizen Science Initiative ‘Water Folks’ program during March 20-22, 2024.



Dr. Manoj P Samuel, Executive Director, CWRDM, Inaugurating the DASD sponsored farmers training program at CWRDM



Photograph showing the participants of the ‘Water Folks’ program conducted by CWRDM, during March 20-22, 2024

- Organized one-day national workshop on forest Hydrology on 30th January 2024. Executive Director Dr. Manoj P Samuel Presided over the function. Shri. Pramod G Krishnan IFS, APCCF, Kerala Forest Department inaugurated the workshop. Dr. Sanjayan Kumar IFS,CCF, was also the guest of honour for the programme. Er. Dinil Sony C and Dr. U Surendran were felicitated during the inaugural function. Key note lectures from Dr. Santhosh Kumar A V, and Dr. B Venkatesh were also held followed by panel discussions and group discussions.
- Coordinated a State-wide programme in connection with the National Mathematics Day Celebrations(NMD) from 21-25th



Shri. Pramod G Krishnan IFS Inaugurating the forest hydrology workshop at CWRDM

January 2024 organized by Kerala State Council for Science, Technology & Environment (KS CSTE) with the support of Center for Water Resources Development and Management (CWRDM) at the Kerala School of Mathematics (KSoM).

- Conducted training on **Chromatographic techniques**, funded by Kerala State Council for Science, Technology and Environment (KSCSTE), 05 -23 February 2024.
- **Rooting for a sustainable future: Empowering students for Effective Waste Management and Conservation**, Ministry of Environment, Forest and Climate Change (MoEF & CC), Govt. of India (Through KSCSTE), Jan-March 2024.
- **Application of GIS for Water Resources Management**, Self-Generating through Registration Fees, 11-15 March 2024.
- Three-day training Workshop on ‘**Scope Importance and innovative Techniques in Bamboo Cultivation and Value Addition**’, Department of Horticulture, Plantation Crops, Nagapattinam District, Tamil Nadu (ATMA Scheme), 28 Feb to 01 Mar 2024.
- Three-day training workshop on ‘**Environment Impact Assessment: need and methods for assessment**’, Ministry of Environment, Forest and Climate Change (MoEF & CC), Govt. of India, 03 -05 Jan 2024.
- Workshop on **Scope Importance and Innovative Techniques in Bamboo Cultivation and value addition**”, ATMA Scheme, Govt. of India, 06-08 February 2024.
- JNTBGRI has organized a hands-on training programme on the Cultivation, Hybridization, and Value Addition Practice in Orchids on January 11, 2024, for students of Chinmaya Vidyalaya, Attukal; on January 16, 2024, for students of St. John’s Model HSS, Nalanchira; on January 29, 2024, for students at Govt. Higher Secondary School for Girls, Cottonhill, Vazhuthacadu; and on February 6, 2024, for students of Govt. High School, Avanavancherry, Attingal Thiruvananthapuram. These workshops were financially supported under the KSCSTE-MoEF & CC -EEP Kerala – Sustainable Lifestyle Workshop for School Students under the National Green Crops scheme.



Hands-on training sessions titled Cultivation, Hybridization, and Value Addition Practice in Orchids: Students of GHS, Avanavancherry, Attingal practicing orchid hybridization techniques on February 6, 2024

NATPAC

NATPAC in association with LSGD - Kerala State Rural Roads Development Agency (KSRRDA) conducted One-Day Workshop on Full Depth Reclamation Technology at Thiruvananthapuram, Ernakulam, and Kozhikode where representatives



Prof. Dr. K P Sudheer, Executive Vice President, KSCSTE inaugurating the FDR workshop at Thiruvananthapuram

from various government departments and construction sectors participated. The technical sessions were handled by experts from IITs/NITs, engineers from various government departments and technology providers such as Zydex, RoadstaB, AVS Inno Infra, Vishwa Samudra Engineering and Avijeet Agencies. The workshop at Thiruvananthapuram was held on 8th January 2024 at Parijatham Auditorium, IMG, Thiruvananthapuram; Ernakulam on 10th January 2024 at GCDA Conference Hall, Jawaharlal Nehru International Stadium, Ernakulam and Calicut on 12th January 2024 at Bhaskara Hall, National Institute of Technology (NIT), Calicut.

Observance of National Road Safety Month 2024

As part of observance of Road Safety Month 2024, NATPAC in association with various academic institutions organized 22 road safety training programmes across the 14 districts in Kerala covering the road users like Youth, Driving School Instructors, Ambulance Drivers, Educational Institution Bus Drivers, etc.



Training for newly recruited Civil Police Officials

As part of extension activities and capacity building to stake holding departments, Senior scientist Er. Subin is being engaged as a visiting faculty to Kerala Police Academy. In January 24 a seven-day session is organized at Kerala Police Academy, Thrissur on Scientific Traffic Enforcement for the newly recruited batch of women civil police officials.



Training Course for Drivers of Vehicles Carrying Dangerous and Hazardous Goods

Government of Kerala accorded sanction to KSCSTE-NATPAC for conducting 'Training Course for Drivers of Vehicles Carrying Dangerous and Hazardous Goods'. A certificate for the same is issued to participants on the completion of training and this certificate is valid for 3 years. The training intends to ensure employee's safety, reduce incidents and crashes, increase employee's skills, ensure environmental protection, preclude penalties and reduce operating costs. NATPAC conducted one programme during this period.

TransTech Talk Series

KSCSTE-NATPAC has initiated a technical talk series entitled "TransTech Talk Series" focussing on various aspects of Transportation sector.

The twelfth talk in the series was delivered online by Prof. Krishna R Reddy, Professor of Civil and Environmental Engineering, University of Illinois Chicago (UIC), USA on the topic "Integrating Sustainability and Resilience in Transportation Engineering: Challenges, Frameworks and Applications" on 12th January 2024.

The thirteenth talk in the series was delivered online by Prof. Ashish Bhaskar, Professor of Civil and Environmental Engineering at the Queensland University of Technology, Brisbane, Australia on the topic "Real-Time Simulation of Large Urban Networks: Leveraging Big Transport Data" on 9th February 2024.

The fourteenth talk in the series was delivered online by Er.Suvendu Seth, Transportation Consultant on the topic "Improving Road Safety on Indian Roads" on 15th March 2024.

TransPedia Research Talk Series

- TransPedia is a distinctive endeavor from NATPAC, envisioned to promote research for shared benefits, by disseminating knowledge on diverse topics from cutting-edge technologies to sustainable solutions. This also brings out a platform for young researchers across the globe to connect and interact to better shape the future of research and development in transportation.
- The sixth talk in the series was delivered online on the topic "Proactive Road Safety Assessment of Intersections through Microsimulation Approach" on 24th January 2023 by Dr. Madhumita Paul, Assistant Professor, IIT Kharagpur.
- The seventh talk in the series was delivered online on the topic "Microsurfacing: A Sustainable Preventive Maintenance Treatment for Highways" on 28th February 2024 by Dr. Nishant Bhargava, Assistant Professor, Department of Civil Engineering, Birla Institute of Technology and Science (BITS) Pilani, Pilani Campus.

- **Greener with Malabar Botanical Garden- Workshops on Sustainable Lifestyle for School Students:** The programme on "Greener with Malabar Botanical Garden" -Workshops on Sustainable Lifestyle was conducted at Malabar Botanical Garden and Institute for Plant Sciences during 31st January to 03rd February 2024. The programme was organized focusing on giving awareness to school students of classes 07th to 11th on sustainable life style. 150 students from various schools of Kozhikode district participated in this programme. They were given lectures on topics which are of social relevance in today's scenario viz., Plantation methods/techniques, Nursery Management, Garden Management, Waste Management. The sessions included both lecture classes by experts with the multi-media aids and field visits.



- **One Week High- End Workshop under DST- SERB Karyashala on "Plant Bio Prospecting -Analytical Techniques, Sustainable Practices and Opportunities"** conducted at KSCSTE-MBGIPS during 20th to 26th March 2024. 29 PG Students/ Research Scholars from various States participated in this workshop. The sessions included lectures and practical sessions by experts covering multiple aspects of biotechnology



- 15 days skill-based training programme for SC and ST communities for capacity building and livelihood enhancement on 'Landscaping and Lawn Management' from 15th to 29th February,

2024 supported KSCSTE – SC&ST Cell

- A training on Millet farming techniques organized in collaboration with Agriculture Department. Mr Rajees Agriculture officer Ambalavayal imparted training.
- Conducted 3 Days Bamboo handicraft training at Meenangadi chandanchira paniya women group.
- 15-days skill training programme for SC/ST community members organized to impart skill on operationalizing various agricultural machinery and equipments.
- 15 Days Biodiversity Short Course conducted for graduate students across South India.



- STIC conducted sustainable life style workshops in the area of Water Quality Testing, for school students, under National Green Corps Ecoclub Programme



proposed by KSCSTE, during 3 - 6 January 2024. over 150 students from various schools participated in the workshop.

- IPR Cell of STIC along with IUCIPR Studies, CUSAT has organized an INTERACTIVE SESSION ON PATENT FILING on 8th Jan 2024 in association with KSCSTE IPRIC-K at STIC. Dr. M. Bhasi, Director IUCIPR, CUSAT delivered the Keynote address and eminent IPR experts from KSCSTE Empaneled Patent attorneys led the class. Over 60 participants attended the class.
- STIC conducted Four day training programme on LABORATORY QUALITY MANAGEMENT SYSTEM AND INTERNAL AUDIT AS PER ISO/IEC 17025 : 2017 during 16 – 19 January 2024.
- STIC has successfully conducted the programme of “Training on Food and Water Testing” during 5th -6th February 2024 co-sponsored by KSCSTE, Govt. of Kerala and DST, Govt. of India under SC&ST Cell Skill based training for SC and ST communities for capacity building and livelihood enhancement.



Conferences / Symposia / Seminars organised

- Conducted 6th Dr. C Unnikrishnan Warriar Annual Memorial Lecture on 10th January 2024. Dr. Sudhir Kumar, Former Director, National Institute of Hydrology delivered the Memorial Lecture on the topic ‘Role of Isotopes in Identifying Surface water and Groundwater Interaction’.
- CWRDM organized Dr. P K Iyengar Memorial lecture on 22nd January 2024 as part of 36th Kerala Science Congress,. Dr. D K Aswal, Director, Health Safety and Environment Group, Bhabha Atomic Research Centre, Mumbai delivered the lecture on ‘Radiation, Nuclear Energy and Environment’.
- CWRDM conducted observance of ‘World Wetland Day-2024’ at Sarovaram Biopark, Kottuli, Kozhikode on 1st February 2024, with the financial support from SWAK and KSCSTE. Various activities like Wetland Mitra Enrolment, Mangrove Plantation, Expert talk on mangrove afforestation and wetland awareness competitions were organized as part of the programme.



Dr. Sudhir Kumar, Former Director, National Institute of Hydrology delivered the 6th Dr. C Unnikrishnan Warriar Annual Memorial Lecture at CWRDM



Dr. Manoj P Samuel, Executive Director, CWRDM, inaugurating the World Wetland Day Celebrations at Sarovaram Biopark, Kozhikode



Participants of World Wetland Day celebrations organized by CWRDM

- CWRDM celebrated World Water Day on 22nd March 2024. Dr. Salini sasidharan, Assistant Professor, Pacific Northwest University, USA, delivered the keynote address. Sri. Cheruvayal Raman was the guest of address. Dr. Manoj P Samuel, Executive Director, CWRDM, Dr. Priju C. P and Dr. Raicy M.C were present in the program. A Quiz competition was also conducted for college students.



Dr. Salini Sasidharan delivering the key note address during the World Water Day Celebrations at CWRDM, Kozhikode.

As part of the systematic documentation and Bioprospecting of ethnomedically important medicinal plants on tribal/traditional knowledge through molecular pharmacological approach, awareness programmes were conducted at Chaliyar, Chungathara, Mampad, Nirmarathur and Vallikunnu Gramapanchayaths and Ponnani and Parappangadi Municipalities of Malappuram district.



Contact and awareness programme conducted at coastal Municipality, Ponnani, Malappuram district, Kerala on 16th March 2024



- Organized One-week high end workshop on Plant Bioprospecting-Analytical Techniques, Sustainable Practices & Opportunities, 20th to 26th March 2024 at KSCSTE-Malabar Botanical Garden and Institute for Plant Sciences, Kozhikode, Kerala funded by DST-SERB
- Two days Wayanad Community Seed Fest & Seminar 2024 with the prime thrust on showcasing the agrobiodiversity of Wayanad and exchange of knowledge among farmers, researchers and other stakeholders.

Books / Publications / Reports / Patents / Awards / Honours / Recognitions

	CWRDM	KFRI	JNTBGRI	MBGIPS	NATPAC	ICCS	MSSRF
Journal Publication	4	11	27	4	2	2	
Books/Chapter/Monographs	1	2	1		2	1	2
AIR /TV programmes	5						
Conference papers	27	14	14	7	6		
Report	17		2			1	
Awards	2	1					
Lectures Delivered	29						
Training conducted/attended	4		7				
Patent							

KSCSTE-IPRICK conducted prior art search on 37 patent search applications, determined the patentability status of the inventions and informed the inventors. Also, facilitated the filing of 2 Patents, 1 Copyright and 1 Trademark. Seven Patents were also granted during the period.

- JNTBGRI has bagged consecutively for the third time the Global Genome Initiative for Gardens (GGI-Gardens) Award 2024 instituted jointly by GGI-Gardens, BGCI-US and USBG for the collection and conservation of plant diversity.

Appointments

Dr. C. H. Suresh Appointed as Director of Srinivasa Ramanujan Institute for Basic Science (SRIBS)



Dr. C. H. Suresh, Chief Scientist at CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram has been appointed as Director of Srinivasa Ramanujan Institute for Basic Science (SRIBS), an Institution located at Pampady, Kottayam, under Kerala State council for Science, Technology and Environment.

Dr. Suresh is a highly respected authority in theoretical and computational chemistry. He comes to SRIBS with a distinguished career marked by significant contributions.

Dr. Suresh earned his PhD from Savitribai Phule University, Pune, and further strengthened his expertise through postdoctoral research at prestigious institutions like Nagoya University (Japan – JSPS fellow), Indiana University (USA), and Marburg University (Germany – Humboldt fellow). His remarkable career has garnered him numerous accolades, including the CRSI Bronze Medal and Fellowship of the Indian Academy of Sciences, Bangalore (2022).

Dr. Kannan CS Warriar appointed as the Director of Kerala Forest Research Institute.



Dr. Kannan CS Warriar, stands out in the field of forestry with an impressive array of achievements. With a strong academic foundation as the top rank holder in both his Bachelor's and Master's degrees in Forestry and a Doctoral Degree in Forest Genetics, Dr. Kannan Warriar has accumulated 27 years of research experience. He has made significant contributions to Genetics, Tree Improvement, Clonal Forestry, and Biodiversity Conservation, resulting in the release of productive clones and the identification of Plus Trees. Recognized with notable awards such as the National Award of Excellence for Outstanding Research in Forestry and Rolla S Rao Award, Dr. Kannan Warriar's extensive publication record of 303 publications, patents, international exposure through collaborations and training, and involvement in numerous research projects, showcase his exceptional dedication and impact in the field of forestry. Apart from research, he is active in the field of music. He has composed the theme song of Kerala Forest Department sung by the renowned singer, P Jayachandran. He has also presented a music programme, 'Music from Wood' during the celebrations of International Day of Forests by the FAO of the United Nations, Bangkok.

Prof. Ratnakumar P K appointed as the Director of Kerala School of Mathematics



Prof. Ratnakumar P K obtained his PhD from Indian Statistical Institute in 1997 under the supervision of Prof. S. Thangavelu in the field of Harmonic Analysis. His area of research is broadly Harmonic Analysis, with special interest in applications of Harmonic Analysis methods in PDE. He has worked on problems in Harmonic Analysis on the Euclidean Spaces, the Heisenberg group, Rank-1 Symmetric Spaces, Modulation spaces, apart from studying problems

in PDE using harmonic analysis techniques. He has concentrated on initial value problems for evolution equations associated to the twisted Laplacian on C_n and Hermite operator. He worked as a visiting scientist in the Dept. of Mathematics, Brock University, Ontario, Canada, from Sept 1997 to Dec 1997. He also worked as a Post-doctoral Fellow in the Stat-Math Unit, Indian Statistical Institute, Bangalore, from May 1996 to Oct 1998 and in the Institute of Advanced Studies in Mathematics, Technion – Israel Institute of Technology, Haifa, Israel, from Oct 1998 to Oct 1999. He worked as a Lecturer in Applied Mathematics, Department of Mathematics and Statistics, University of Hyderabad, from Oct 2000 to June 2004. Since 2004, he has been working at School of Mathematics, Harish-Chandra Research Institute, Allahabad.

Special News

CWRDM

CWRDM signed an MoU with Agriculture and Farmers' Welfare Department to conduct the carbon footprinting of Six District Agricultural Farms and Athriappilly Tribal Valley Project on 13th March 2024 in presence of Hon'ble Agriculture and Farmer's welfare Minister, Sri. P. Prasad at his office.



- Participated in the river rejuvenation programmes of Bharathapuzha associated with Harithakeralam Mission Palakkad and Executive Engineer, Irrigation Department, Palakkad.
- Active participation in **restoration of degraded grasslands**.
- **Journal of Bamboo and rattan** has achieved a NAAS score of 4.10

KFRI

- **TEAKNET, FAO** - Initiated the Global Teak Resource and Market Assessment study 2023 to update the teak resources and trade flow across the teak growing countries with the financial support of FAO and IUFRO.
- **The 5th World Teak Conference hosted by TEAKNET-KFRI, to be held in Kerala, India in September 2025.**
- The **Bamboo Technical Support Group-South Zone, National Bamboo Mission, Govt. of India** promoted bamboo cultivation and utilization: raised 1 lakh seedlings, planted 40 hectares, conducted training programs
- The **Regional Cum Facilitation Centre - Southern Region (RCFC-SR)**, National Medicinal Plants Board, Ministry of AYUSH, Govt. of India, promoted sustainable medicinal plant cultivation: trained 200 farmers, implemented 12 projects, produced 894,000 plants.
- The **Kerala Forest Seed Centre (KFSC)** collected, processed, and distributed 12.55 tons of forest seeds (61 species) across India.
- The **Centre for Analytical Instrumentation-Kerala (CAI-K)** analyzed over 3000 samples (internal and external), trained 30 students, facilitated approx. 700 No's of academic visits and generated income of 12 lakhs from sample analysis and training programs.
- Provided **DNA testing** of seized timber logs for Judiciary and **DNA barcoding services** for species identification
- **Empowered marginalized communities:** trained 55 individuals in NWFP product development, bamboo craft, and nursery management.
- Provided technical assistance to Kadappuram, Kadukutty, Trithala, and Akathethara Gramma Panchayats for **bamboo plantation establishment**.

Dr. A. A. Mao, Director, Botanical Survey of India at JNTBGRI stall in the Orchid Show at Pune, organized by The Orchid Society of India, 15th to 17th March.



- JNTBGRI has participated in the Orchid Show at Pune, organized by The Orchid Society of India on March 15-17, 2024.
- The Civil Engineering Division at the School of Engineering of the Cochin University of Science and Technology (CUSAT) and the KSCSTE-National Transportation Planning and Research Centre (NATPAC) signed a memorandum of understanding on 15th March 2024 to collaborate on research in various sectors.
- MS Swaminathan posthumously conferred up on Bharat Ratna Award in 2024.



Dr. Nithya Rao, younger daughter receiving the award from Ms. Droupathi Murmu the Honourable President of India.

JNTBGRI

NATPAC

MSSRF



**KERALA STATE COUNCIL FOR
SCIENCE, TECHNOLOGY AND ENVIRONMENT (KSCSTE)**
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