

KSCSTE NEWS

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

കേരള ശാസ്ത്ര സാങ്കേതിക പരിസ്ഥിതി കാൺസിൽ

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*Inset picture : Dr. M.S. Valiathan receiving
the Kerala Sasthrapuraskaram 2013 from Sri
Oommen Chandy, the then Chief Minister of
Kerala*

Cover Story

Dr. M.S. Valiathan and Kerala State Council for Science, Technology and Environment



Dr. M.S. Valiathan

Dr. M.S. Valiathan is a renowned Indian cardiac surgeon and a pivotal figure in the establishment of the Kerala State Council for Science, Technology and Environment (KSCSTE). His contributions significantly impacted the scientific and technological landscape of Kerala. Here are some key points about his contributions:

Visionary Leadership: Professor Valiathan brought a

visionary approach to the development of science and technology in Kerala. His leadership played a crucial role in conceptualizing and setting up the KSCSTE to foster research and innovation in the state.

Institution Building: As a prominent figure in Indian science and technology, Valiathan's involvement helped in garnering support from both the state and central governments. His efforts were instrumental in creating an institutional framework that could support and nurture scientific research.

Policy Advocacy: Valiathan's expertise and reputation in the scientific community helped in advocating for policies that promoted science and technology in Kerala. His influence ensured that the KSCSTE received adequate funding and resources to support its initiatives.

Focus on Indigenous Research: Under Valiathan's guidance, KSCSTE emphasized the importance of indigenous research and the development of technologies that could address local needs. This approach helped in creating a self-reliant scientific ecosystem in Kerala.

Educational Initiatives: Valiathan advocated for enhancing the quality of science education in Kerala. He believed in building a strong foundation for future scientists and researchers, which led to various educational programs and scholarships being instituted by KSCSTE. The "Sasthraposhini" scheme and KSCSTE Fellowship programme are worth mentioning.

Collaboration and Networking: Recognizing the importance of collaboration, Valiathan promoted partnerships between KSCSTE and other scientific institutions, both within India and abroad. These collaborations helped in bringing global scientific advancements to Kerala.

Public Awareness and Outreach: Valiathan also emphasized the need for public awareness about science and technology. Under his influence, KSCSTE organized numerous programs and events to engage the public and inspire young minds to pursue careers in science.

Professor M.S. Valiathan's contributions to the establishment and growth of the Kerala State Council for Science, Technology and Environment have had a lasting impact, fostering a culture of scientific inquiry and innovation in the state.

Establishment of Science Parks in Kerala: Accelerating Innovation and Collaboration

The Government of Kerala has decided to establish three Science Parks in the State envisaged on the cutting-edge hubs for industrial and entrepreneurial R&D, fostering international partnerships with universities and industries. Kerala State Council for Science and Technology and Environment [KSCSTE] is designated as the Special Purpose Vehicle for establishing the three Science Parks at Ernakulam, Kannur and Thiruvananthapuram.



Agreement with the AED Consultant M/s Arcop Associates Pvt. Ltd.

KSCSTE invited Expression of Interest [EoI] for the selection of the Architectural Engineering Design [AED] Consultant Agency for Science Park, Kannur. Based on the evaluation of the credentials and the documents submitted by the bidders, M/s Arcop Associates Pvt. Ltd, New Delhi has been selected as AED consultant for the preparation of DPR for Science Park, Kannur. KSCSTE executed the agreement with the AED consultant. Topographical survey and geotechnical investigations initiated for the preparation of the conceptual campus master plan.



Dr. Anilkumar C, Senior Principal Scientist and Nodal Officer, NGC has attended the review meeting of the Environment Education Programme of the MoEF & CC at New Delhi on 17th May 2024

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



Team interacting with the Tribal community at Oravampadi settlement in Parambikulam, Palakkad

CWRDM has conducted the following programmes

- CWRDM has initiated projects on flood forecasting and mitigation measures for selected river basins of Kerala and to compute the environmental flow for rivers in Kerala, integrated management of surface water and groundwater, assessment of the effectiveness/ impact of managed aquifer recharge, ecological risk of microplastics, impacts of ballast water on coastal biodiversity, biological nutrient removal of slaughterhouse wastewater, elucidating role of multiple abiotic stresses on water use efficiency of selected orphan crops of northern Kerala, optimizing water productivity and nutrient dynamics in lateritic soil with organic nutrition and hydrogel, molecular profiling of flood-tolerant traditional rice cultivars of Kerala and mass multiplication of paddy for climate resilience, spectral characterisation of laterite soils of Kerala and to develop high frequency sequential rain sampler for stable isotope study of extreme rain events.
- Integrated water management studies initiated in techno park Trivandrum, Info Park Kochi on consultancy basis. Consultancy services have also been extended to KSEB for rectification works of Barapole hydroelectric project and Shengulam augmentation project.

KFRI has conducted the following programmes

- Seasonal variability of evapotranspiration using empirical methods and ANN in moist and dry deciduous forests of southern Western Ghats, Kerala
- Water stress hot spots in central Kerala
- Taxonomy and ecology of bambusicolous lichens from Kerala
- Registration of Marayoor sandalwood for geographical indication tag
- Case study on application of terrestrial laser scanner and unmanned aerial vehicle (UAV) in forestry
- India's bamboo economy sustainable and implementable mechanism to improve access of untapped forest resources
- Preparing a roadmap for the revival of the bamboo sector in Kerala: unlocking sustainable development opportunities
- Monitoring eco-restored sites of Walayar and Ottappalam in Palakkad forest division
- Indigenous knowledge and technology for mitigating human-wildlife conflict; documentation and case studies from Kerala's forest dwelling and forest fringe communities
- BTSG coordination and annual action plan
- Long-term monitoring of natural forests of Kerala - phase 1
- Identification of elite varieties of selected medicinal plants using phytochemical methods

JNTBGRI has conducted the following programmes

- JNTBGRI has initiated a new project "Functional Exploration of Therapeutic Etiquettes of a Novel Group of Antibiofilm agents against infectious human pathogens: Molecular, Proteomic and Biophysical Approach" funded by KBC-KSCSTE
- Scale up production of plants for large scale multiplication of high value medicinal plants of the Western Ghats by micropropagation (in vitro) for commercial cultivation/custom farming at Chhattisgarh State- New Project - sanctioned dated 4th April 2024 -Or No.187/2024/KSCSTE - Chhattisgarh Medicinal Plant Board, Govt. of Kerala.
- Scale up production of mericlones of *Acorus calamus*, *Plumbago rosea*, *Curcuma aromatica*, *Curcuma zedoaria*, *Curcuma caesia*, *Ravoulfia vomitoria*, *Embelia ribes* are in good progress.

- Three CSR/CER funded projects by LuLu International namely Beautification of Annie Mascarene Round, Vazhuthacad, Beautification of Devaswam board Junction, Nanthancodu and Beautification of Government Guest House Round, Thycaud. The work of making a fountain in Annie Mascarene Round is progressing.
- Two New project proposals planned for the beautification of Kalamassery Medical College Campus and Cancer Center Campus were submitted and they are at the approval stage.
- SHRESTA- Centre of Excellence Programme on Phytochemical Nano Technology funded by KSCSTE is ongoing.

MBGIPS has conducted the following programmes

- R&D Projects in Medicinal and Aromatic Plants in Chhattisgarh: Projects funded by Chhattisgarh State Medicinal Plants Board through KSCSTE, along with JNTBGRI and KFRI.
- Endophytic Bacterial Community Structure and Characterisation of Plant Growth Promoting Effect and Disease Resistance on Selected Medicinal Plants.
- Phytoextraction of Persistent Organic Residues from Pesticide-contaminated Soil for Medicinal Plant Cultivation.
- Establishment of a Research Laboratory at CGSMPB.
- Conducted two field visits to Raipur and Pendra districts during April and May 2024 as part of Chhattisgarh State Medicinal Plants Board projects.
- Creating Native Orchid Enhanced Urban Landscapes: Connecting People with Nature (*in association with Royal Botanical Garden, Kew, London*): A potential partnership is established between Royal Botanic Gardens, Kew (UK) with JNTBGRI, MBGIPS and KFRI (Stakeholders include Kerala State Council for Science Technology and Environment, Department of Tourism, Departments of Education and Higher Education). 26 species of native Orchids were collected from different parts of Northern Kerala and planted in the landscapes of Sarovaram Biopark, Kozhikode. The programme aims to raise awareness about the importance of orchid diversity and its conservation in the Western Ghats.



ICCS has conducted the following programmes

- Integrated River Basin Development for the Greater Pamba Basin (Consultancy project)
- 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.
- ICCS conducted a water stress survey for the districts of Alappuzha, Kollam, and Pathanamthitta.
- Landsat imagery-based coastline change study for Kerala.
- Understanding the Arabian sea warming signals

IRTC has conducted the following programmes

- Centre for Geospatial Science and Technology along with Waste management, Energy, Environment divisions of IRTC has started working to assess carbon foot print towards Net carbon Neutrality at Tier 3 level (with individual household level data collection to reduce uncertainties to the minimum) to forge global response to the climate emergency at Sreenarayanapuram GP, Thrissur.
- Energy Division has started monitoring the Vertical axis wind turbine installed in the campus using KSCSTE Plan Fund 23-24. The main objective is to map the performance of the system at minimum wind speed.
- Waste management division of IRTC has been actively guiding project and internship students with research topics such as Human hair waste bio-degradation, Biochar preparation and characterization from distinct wastes, Anti-termites study, Enzymatic dehairing of industrial solid wastes, Fish feed formulations, Anaerobic inoculum development from actively running bio-gas plant samples with questionnaire survey, to increase the biogas yield and fecal sludge management.
- Large-scale microbial consortium (inoculum) production in bioreactor for organic waste management is a continuous activity in the Waste management division.
- The Waste management division has trained officers from KILA, farmers, students and other trainees regarding the waste management practices and facilities available in the campus.
- The Waste management division has submitted a societal project to the Department of Biotechnology under "Biotechnology based programme for societal development in rural areas and aspirational districts" Scheme – "Solid, Liquid and Fecal Waste Management for Societal Development of Scheduled Caste People at Erode District, Tamil Nadu, India" [(81) Lakhs.
- Tata Institute of Social Sciences, (TISS), School of Rural Development Tuljapur Campus is the rural campus 7 BASW students enrolled for block field work programme in the areas of education, health, water, sanitation, drought mitigation, rural technologies, women empowerment, youth development, Support to SHG, and other social issues.

Significant Innovation/Invention

- HYDRAH (Hydrological Rainfall Analysis for Humid tropics) rainfall dashboard
- A DSS on Soil Erosion Risk Assessment is developed and hosted in CWRDM website for public use.
- Capillary action-based irrigation device for field (Wick) to improve crop productivity and water use efficiency

- The project on conservation, eco-restoration and popularization of three endemic and threatened tree species of Kerala, India namely *Madhuca diplostemon*, *Syzygium palodense*, *Buchanania abrahamiana* funded by Kerala Forests and Wildlife Department is progressing.

- The project funded by KSCSTE on endemic tree planting programme is progressing
- Research on odour free microbial consortium (inoculum) in the waste management division has been completed successfully with the addition of probiotics. Laboratory scale composting experiments and composting at IRTC compost yard using the newly formulated probiotic inoculum turned fruitful. Zero emission of obnoxious smell, after a week of storage of the inoculum (in normal room temperature) was a notable factor. As probiotics are *Generally Regarded as Safe* [GRAS], the newly formulated microbial consortium will be more user friendly.

LIC HFL CSR

The project has been designed to empower the spice farmers with

right knowledge, best practices and marketing to improve the yield, quantity and quality of the product leading to increased income for the smallholder spice farmers of Wayanad. Continuous training and capacity building and skill development are the integral part of the project to achieve the above intended goals.

HDFC CSR

HDFC Bank and MSSRF have collaborated to launch a Holistic Rural Development Programme in the Ernakulam district of Kerala. The programme aims to improve the quality of life of marginal farming communities over a three-year period. It aims to increase farm production, create income opportunities from both on-farm and non-farm based livelihood and build the resilience against the climate change related challenges in Agriculture and daily life

- Carbon Dioxide Temperature Gradient Chamber
- Atomic Absorption Spectrometer at Water Quality Lab in Neyyattinkara Sub centre
- Establishment of an additional Secondary Hardening Facility at KSCSTE-KFRI Sub Centre, Kuzhur, funded by Kerala State Bamboo Mission (KSBM), Govt. of Kerala.
- Established a Genetic Fidelity Testing Laboratory at KSCSTE-KFRI Sub Centre, Kuzhur, funded by Kerala State Bamboo

Mission (KSBM), Govt. of Kerala.

- The Center of Excellence programme funded by KSCSTE on Phytochemical Nanotechnology at Puthenthoppu Campus has become fully functional.
- RET Conservatory and Crop germplasm (cowpea, tubers, wild edibles, etc.) maintained at the centre. Planting of traditional/ farmer's tuber varieties carried out in April-May.

Technologies Established/Demonstrated

- Technology developed for slaughter house waste water management by Dr. Chithra V S, Scientist B
- 4620 Kg IISR Pragathi Turmeric and 1875 Kg IISR Varada Ginger variety were distributed to 60 tribal farmers in Selected villages in Wayanad.

Training programmes/ Workshops/Internships organized

Workshop on IPR filing: Inception to Monetization



Dr. Saji Gopinath, Vice Chancellor, Digital University, Kerala delivering his inaugural speech

KSCSTE -IPRIC-K jointly with the IPR Cell & IIC, Digital University of Kerala organized a one day Workshop on 'IPR filing: Inception to Monetization' on 31st May, 2024. Honorable Vice Chancellor of Digital University Dr. Saji Gopinath inaugurated the Workshop. Dr. Ajit Prabhu V, Chief Scientist, KSCSTE & Former Nodal Officer of IPRICK delivered the Keynote Address and emphasized the significance of fostering an IPR environment in Educational Institutions. Three Technical Sessions on various aspects of IPR including Copyrights, Trademarks, Trade secrets, Patent searching and IP Monetization were

covered in the Workshop by Experts in the field. Around 60 Participants attended the workshop.



Group Photo of Participants with Resource Persons

World Environment Day Celebrations 2024

KSCSTE, the EIACP Hub Kerala, the Kerala State Pollution Control Board, and the Department of Environment, Government of Kerala, organized the World Environment Day 2024 celebration on June 5th at Kendriya Vidyalaya Pattom, Thiruvananthapuram. Dr. V. Venu, IAS, Chief Secretary, Government of Kerala, inaugurated the event, which was presided over by Prof. K.P. Sudheer, Principal Secretary of the S&T Department. Dr. S. Pradeep Kumar, Member Secretary of KSCSTE, Er. Sreekala S., Chairperson of the Kerala State Pollution Control Board, Shri. R. Giri Sankaran Thampi, Principal of Kendriya Vidyalaya Pattom,



Dr. V. Venu, IAS, Chief Secretary, Government of Kerala, inaugurating the event

Thiruvananthapuram, and Dr. P. Harinarayanan, Senior Principal Scientist and EIACP Kerala Coordinator, spoke during the program. Dr. K.P. Jaikiran, Associate Professor (Rtd) of the Department of Geology at University College, Thiruvananthapuram, delivered the focal theme lecture and interacted with the students.



Inauguration of workshop at MG University by Prof K P Sudheer, Principal Secretary, Science & Technology Department, Govt of Kerala

Mission LiFE programme :

EIACP Hub Kerala, in collaboration with KSCSTE-NATPAC, conducted a one-day workshop on Energy and Environmental Challenges for Sustainable Transportation on May 10, 2024. The International Day for Biological Diversity was celebrated in association with KSCSTE-JNTBGRI on May 22, 2024. The Hub partnered with STIC, CUSAT, Kochi, to conduct a Hands-On Training Program on Food and Water Testing for Higher Secondary School Students on May 23, 2024. Additionally, EIACP Hub, in collaboration with KSCSTE-ICCS and Mahatma Gandhi University Kottayam, organized a one-day state-level workshop titled "Towards a Healthy, Sustainable, and Climate Resilient Community" on June 3, 2024, in Kottayam. EIACP Hub Kerala, in partnership with KSCSTE-MBGIPS, Kozhikode, conducted a one-day Garden Attachment Programme on May 30, 2024.

- Organised one day Brainstorming workshop on Forest Hydrology 'Scoping study to Assess the Hydrological services provisioned by the Forest Eco systems' on 22 June 2024 at College of Forestry, Vellanikkara, Thrissur



CWRDM organized High end Karyshala Workshop on 'Hyperspectral Sensing for Agriculture and Water Resources Management' during 5th June to 18th June, 2024.

- Organized the Observance of World Environmental Day on 5th June at CWRDM campus. Dr Parveen Kumar, Director, ICAR-Central Coastal Agricultural Research Institute, Goa was the Chief guest. Dr. S Sandeep, Principal Scientist KFRI delivered expert talk on 'Beyond the food Platter: Emerging Perspectives in Soil Management'. Painting and Quiz competitions were conducted for school students.



Dr Parveen Kumar, Director, ICAR- Central Coastal Agricultural Research Institute, Goa inaugurating the Observance of Environmental Day and Karyshala Workshop

- Conducted a one-month paid training program on "Hands-on training program on "Applications of Geo-spatial Technologies and R Programming (with reference to Water Resources & Agriculture)" to the B.Tech students of College of Agricultural Engineering, University of Agricultural Sciences, Raichur during April 15-May 14, 2024.
- Organised SasthraSameeksha- a science orientation programme of KSCSTE at CWRDM during 4 days (14-17) for school students.
- CWRDM and Calicut Chemistry Collective (CCC) jointly organized "Hands-on Training on Water Quality Monitoring Techniques" during 27th -29th May 2024 at CWRDM.
- CWRDM in association with Kozhikode Block Panchayat

organized Workshop on International Biodiversity Day on 21st May 2024.



CWRDM Executive Director Dr. Manoj P Samuel inaugurating the Sasthrasameeksha programme



Dr. Madhavan Komat, Retd Scientist CWRM delivering lecture on Water quality at Sasthrasameeksha programme

- CWRDM organized two days paid training on “Hands on Training on groundwater modelling using Feflow” at CWRDM in collaboration with DHI New Delhi during 15.05.24 -16.05.24.
- Organized online training programme on ‘Advanced decision making tools for climate smart agriculture, during 25-28 June 2024 jointly with MANAGE Hyderabad.
- CWRDM celebrated the 1st Annual day of Creche established at CWRDM campus with the support of Women & Child Development Department, Kerala



Hands-on Training on Classical and Molecular Techniques in Plant and Fungal Identification, Anusandhan National Research Foundation (ANRF), GOI, 10th - 15th June 2024.



Three-day workshop on “Using Cartoons for Environmental Advocacy” funded by Ministry of Environment, Forest and Climate Change, June 19, 20 & 21, 2024 – [Beneficiaries -22 Cartoonists and Media Editors]

- Fifteen days Training on Bamboo Product development at Idukki, Funded by DST, Govt. of India, May 27 to June 10 ,2024 – [21 participants]
- The KSCSTE and JNTBGRI organized Sasthra Sameeksha-2024, a five-day science orientation program for high school students from May 20th to 24th, 2024. With financial support from KSCSTE, the event featured interactive lectures, hands-on lab experiences in plant sciences, visits to rare plant conservatories, nature walks, and interactive sessions. Held at the Visitors Management Centre (VMC) in JNTBGRI, the program ran from 9:30 am to 3:30 pm daily and participated a total of 251 students from 19 schools.



Sasthra Sameeksha 2024 at JNTBGRI

- One month internship training on the topic “Cultivation and hybridization practice for orchids and vegetable crops” was provided to six B.Sc. students (M. Abinaya, F.A. Gracelin Anna,

D. Jemina Eliz, T. Mary Jenifer, R. Sahaya Jenisha and S Shanu) from Holy cross College, Nagarcoil during the period from 15th May to 14th June, 2024.

- One month internship training on “Demonstration of anti-dengue compounds from *Nerium oleander L.* through in silico methods” was provided to four M.Sc. student (Ackcilin Seki R, Anna Joe Mythili N and Misha A) from Holycross College, Nagarcoil during the period from 15th May to 14th June, 2024.
- One month internship training on “Plant Tissue Culture Techniques” was provided to Department of Plant Biology and Plant Biotechnology, Presidency College, Chennai
- One week training on “Plant Tissue Culture” was provided to M.Sc. Biotechnology students (Athulya Raghunath, Gouri Mohan and Andreana Robin) from Sree Budha College of Engineering, Alappuzha.
- Three students, Ann Viya Vinod from Department of Bio Science, Marthoma College, Thiruvalla; Afsana Kalam from Calicut University, Sathivel from Bharathiyar University completed their M.Sc dissertation work.
- Ten days training on “Tissue culture” was provided to Ms. Navami Ashok GS, Ph.D. student from Govt. Womens College, Thiruvananthapuram from 10th June 2024 to 21st June 2024.
- Provided internship training to 21 students in molecular Biology during the period from 1st April to 30th June, 2024.
- 35 RFO trainees (10th Batch) & 2 faculties, Telengana State Forest Academy, Dulappully, Hyderabad on 3rd April 2024.
- 34 RFO trainees (10th Batch) & 1 faculty, Tamil Nadu Forest Academy, Coimbatore on 13th April 2024.
- 56 BAMS students & 2 faculties of Pankajakasturi Ayurveda Medical college & PG Centre, Thiruvananthapuram on 29th May 2024.
- 34 RFO trainees (11th Batch), SFTI, Aripa on 14th June 2024
- 25 M.Sc. Students (Botany with specialization in Biodiversity Conservation), Kerala University, Thiruvananthapuram on 21st June 2024.
- 15 BFO trainees (88th Batch) SFTI, Aripa on 25th June 2024.
- 19 BAMS students from Immanuel Arasar Ayurveda Medical College & Hospital Nattalam, Marthandam, Tamilnadu on 28th June 2024.



Inaugural session of One-Day Workshop on “Energy and Environmental Challenges for Sustainable Transportation”

- KSCSTE-NATPAC convened a One-day workshop on the topic “Energy and Environmental Challenges for Sustainable

Transportation” at NATPAC Head Office, Akkulam, Thiruvananthapuram on 10th May 2024. The workshop was funded by the Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP), which is a decentralized system sponsored by the Ministry of Environment Forest and Climate Change (MoEF&CC), Govt of India for ensuring integration of national efforts in environmental information generation. The purpose of the workshop was to provide a platform for discussion about the need to conserve energy and shift towards more environment-friendly energy sources to attain the goals of sustainable transportation. The workshop explored the various aspects of alternative sources of energy adopted to cater for the needs of the transportation sector and, subsequently, the environmental aspects of using these sources of energy. The workshop was attended by over fifty government and non-government officials, scientists, stakeholders and policymakers.

- The workshop opened with a welcome statement by Dr Sabitha N. M., Senior Scientist, KSCSTE-NATPAC, followed by a brief description of the program deliberated by Dr P. Harinarayanan, Senior Principal Scientist, KSCSTE. The Presidential Address for the workshop was delivered by Prof (Dr) Samson Mathew, Director, KSCSTE-NATPAC. The program was inaugurated by Smt Sreekala S., Chairman, KSPCB and the Special Address was orated by Prof N. V. Chalapathi Rao, Director, NCESS. Shri Suresh Kumar K., Registrar, KSCSTE-NATPAC conferred the vote of thanks. The workshop was organized in two sessions, a technical session followed by an interactive session adored by eminent commentators from diversified disciplines.

Training/Invited Expert Talk



Dr. Mini Shaji Thomas, Former Director, National Institute of Technology, Tiruchirappalli visited NATPAC and delivered lecture on ‘Women Empowerment’, on 17th April 2024.

TransTech Talk Series

- KSCSTE-NATPAC has initiated a technical talk series entitled “Trans Tech Talk Series” focussing on various aspects of Transportation sector.
- The fifteenth talk in the series was delivered online by Dr. Alfred Kalyanapu, Ph.D., Professor, Tennessee Technological University on the topic “Development of Low-cost, Real-time Water Level Monitoring System – A Case Study for Falling Water River Watershed” on 11th April 2024.
- The sixteenth talk in the series was delivered online by Dr. Priyanka Alluri Ph.D., P.E., RSP2BI, Associate Professor,

Department of Civil and Environmental Engineering, Florida International University on the topic “Improving Transportation Safety: Bridging the Gap Between Research and Practice through the 4 Es”.

- The seventeenth talk in the series was delivered online by Dr. Ram Kumar Veeraragavan, Project Engineer, Federal Highway Administration - Mobile Asphalt Technology Center (MATC), USA on the topic “Performance Based Asphalt Mixtures: Balanced Mix Design Approach - Linking Theory to Practice on 14th June 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 ninth talk in the series was delivered online on the topic “Investigating heterogeneity in alternatives, decision rules, contextual variables and choice set in commute mode choice” on 24th April 2024 by Dr. Parthan K, Assistant Professor, Civil Engineering Department, B.M.S. College of Engineering, Bangalore.
- The tenth talk in the series was delivered online on the topic “Understanding waterborne public transportation leading to holistic design of ferries” on 29th May 2024 by Dr. Harsha Cheemakurthy, Naval Architect, R&D Department, StormGeo, Sweden.
- The eleventh talk in the series was delivered online on the topic “Link Cost Function and Link Capacity for Mixed Traffic Networks” on 26th June 2024 by Dr. Aathira K. Das Project Research Scientist, Department of Civil Engineering, Indian Institute of Technology, Bombay.
- One day garden attachment programme “Engage and Connect



One day garden attachment programme at MBGIPS

Botanical Garden” A programme on sustainable lifestyle practices” jointly organized by Kerala State Council for Science, Technology and Environment (KSCSTE), Environmental Information Awareness capacity Building & Livelihood programme, Kerala (EIACP), and KSCSTE-

- MBGIPS supported by Ministry of Environment Forest and Climate change, Government of India, for high school students on 30.05.2024. The chief guest was Dr. E. Unnikrishnan, Teacher, Environmental Educator he inaugurated the programme and delivered a lecture on the topic “Traditional Plants of Kerala and its Uses”. The afternoon session was handled by Dr. B. Ragupathi, Junior Scientist, KSCSTE- MBGIPS on “Plant Propagation Techniques”. Nearly 60 participants from various schools, Scientists, and other staff of KSCSTE- MBGIPS attended the programme.



The Palakkad District Collector, Dr. S. Chithra (IAS) inaugurated the one-day consultation workshop: “Climate Change and Agricultural Livelihoods: Adapting for Tomorrow”.

- A training programme on plant propagation techniques conducted on 31st May 2024, for the farmers of Panur Block Panchayath, Kozhikode.
- Two-days research orientation programme conducted under the Scientific Social Responsibility Policy of DST-SERB project on Conservation of Crinum on 29th June 2024, with the participation of 10 Research Scholars from various research institutions in Kerala.
- ICCS conducted a one-day consultation workshop for disseminating the research findings of the SERB project. The workshop was conducted at IRTC, Palakkad on 10th May, 2024. This SERB project is a collaboration of KSCSTE-ICCS, KSCSTE-CWRDM, and IIT-Madras.



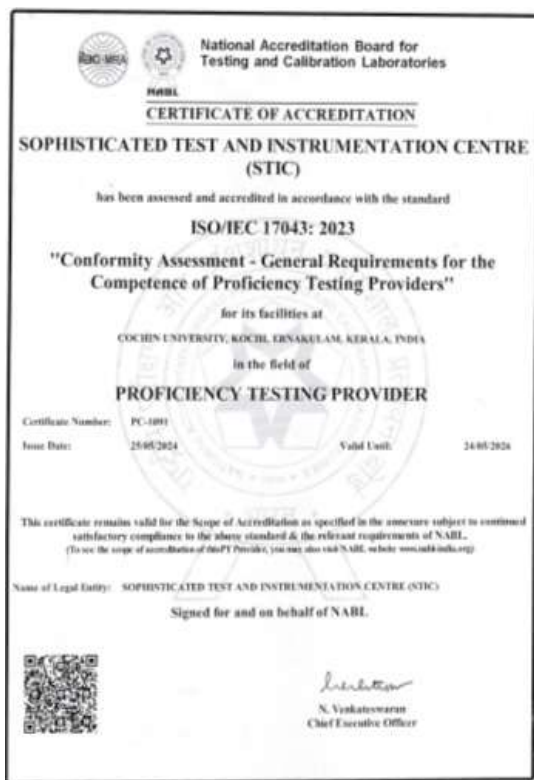
Dr. Sinan Nizar, Scientist-B at ICCS delivered a lecture for the farmers of Bharathapuzha Basin to disseminate the major take aways of the SERB project on climate change.

- Organized a one-day State-level workshop on the title “Towards a Healthy, Sustainable, and Climate Resilient Community” jointly with the Environment Information Awareness Capacity Building and Livelihood Programme (EIACP), KSCSTE, & School of Environmental Sciences, Mahatma Gandhi University. The workshop was sponsored by the Ministry of Environment, Forest and Climate Change, Government of India.



Participants of LQMS - with Director, STIC and Resource Persons

- STIC organized a Four day training programme on Laboratory Quality Management System & Internal Audit as per ISO/IEC 17025 : 2017 on 7 – 10 May 2024.



- STIC Calibration Division is accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) for the Proficiency Test for Mechanical and Thermal areas. This prestigious certificate is first of its kind in the State of Kerala in this area
- Ms. Hamy Michel, Project Fellow, FWT lab has won the First Prize in the Agar Art Competition conducted by the Centre of Excellence in Microbiome (CoEM) - KSCSTE as part of the World Microbiome Day observation.

- STIC conducted Hand on Training programme on Food and Water Testing for Higher Secondary School Students on 23rd May 2024, as part of the Mission LiFE initiative, sponsored by EIACP-KSC-STE



Inaugural Address By Director, STIC. Dr. Madhu, NGC Coordinator on the dais

- KSCSTE Sastra Sameeksha 2024 on the theme ‘Joy of learning’ conducted for 250 School students. This program is intended to develop the curiosity of the students understanding the science in the real-world function through interactive lectures, demons and activities. Basic concepts imparted: Life in water, Microbes in water, Fish and other creatures in water, Cultivation without soil, Plant root functions, Role of microbes, Macro and Micro life in bioconversion, basics of optics, reflections, refraction, interference, water recycling and free energy to electricity.



KSCSTE – Shashtra Sameeksha 2024 “Joy of Learning” weather data collection and interpretation detailing.

- Four days training program on fundamentals of GIS and Remote sensing conducted at center for Geoinformatics lab. 45 participants attended this training at three batches.
- Training on Mushroom Cultivation was held for two days – May 28th and 29th, 2024 with a total number of nine participants. Increase in the yield and quality of mushrooms was relatively higher in the academic year than the previous ones
- Skill development training on Drip irrigation for SC/ST women funded by KSCSTE, is going on.
- Eranad Tribal development Producers company director board members and promoters meeting was held at IRTC from June 14 to 15.
- Regarding CWRDM’s post facto evaluation survey of irrigation projects in Palakkad and Thrissur district, training for volunteer’s training was coordinated at IRTC on 6th April..



Six-day Mushroom cultivation and Entrepreneurship development training programme under the SBI gramseva Project Idukki. The session was led by Mr Shine, a trainer from RSETI Idukki. Stakeholders from Kanthalloor in Idukki district were participated.



'Venal Mazha' - Explores the talents of students in the making science-based projects and novel ideas. The programme is jointly organized by K-DISC, Govt of Kerala & MSSRF CabC for School students of Wayanad District



CabC MSSRF organized a seminar for school children under the NABARD-supported school nutrition garden project, themed "Healthy Environment for Nutrition Security." Nutri-plant kits were distributed to inspire kids to replicate the model at home



MSSRF has also provided one session on ecological importance and the plant diversity of Kolagappara, a hill ecosystem in the Krishanagiri village of Meenagady Panchayath, during the World Environment Day program organized by the Panchayath. Ms C S Dhanya, Scientist (MSSRF) presented the outcomes of an MSSRF study on assessing plant species diversity in Kolagappara. Wayanad



MSSRF CabC Celebrates World Environment Day Across Operational Areas. proactively engaged in and organized various awareness programs and associated activities across its operational areas to celebrate World Environment Day. This celebration served as a testament to their ongoing efforts in promoting biodiversity conservation and fostering a culture of environmental stewardship within communities.



MSSRF conducted International Yoga Day programme at Kanthalloor under SBI Gram Seva Idukki. The yoga session was inaugurated by Dr. Joby Joseph, Medical Officer. More than 40 participants attended from project villages.

Conferences/Symposia/Seminars organised

National Green Corps celebrated World Environment Day



- World Environment Day is celebrated globally on June 5th each year, and in Kerala, various eco-clubs under NGC Environment Education programme actively participate in promoting environmental awareness and conservation efforts. Some of the notable activities conducted by eco-clubs in Kerala on World Environment Day included tree planting events in school and public places and distribution of saplings to students and local communities, schools organised special assembly and took Environment day pledges. Also conducted awareness classes, poster-making, essay writing, and photography competitions on environmental themes and recycled art and craft exhibitions showcasing innovative uses of waste materials.

Seed Ball making Campaign



- NGC Ecoclub schools of Thrissur District in association with District Panchayath organised seedball making and dispersal campaigns during the month of July 2024. Seed balls, also known as seed bombs, are small clusters of seeds encased in a mixture of clay and compost. This ancient technique was popularized by Japanese farmer and philosopher Masanobu Fukuoka, a pioneer of natural farming. The clay protects the seeds from being eaten by birds or insects, while the compost provides essential nutrients for germination. Once dispersed on the ground, seed balls remain dormant until conditions are favourable for growth.

Antidrug campaign



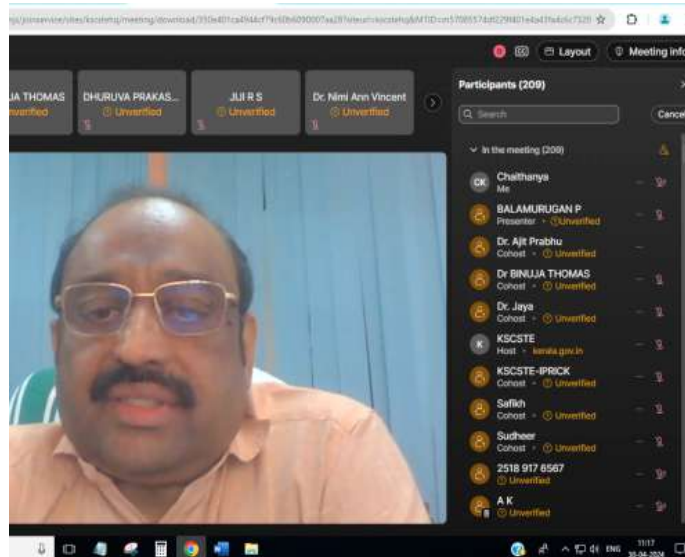
Anti drug Campaign by Panchayath H.S. Kulanada

In July 2024, Kerala has intensified its anti-drug campaigns in schools and colleges in response to the rising incidence of drug use among youth. NGC Ecoclubs associated with the state's excise department, under the Vimukthi mission organised cycle Rallies, antidrug pledges, flash mobs etc in the schools and public places



NGC District co-ordinators meeting held on 20th July 2024 at Sasthra Bhavan.

World Intellectual Property Day 2024 Celebration



Special Address by Dr. Ajith Prabhu. V, Chief Scientist, KSCSTE

- KSCSTE - IPRICK celebrated the World Intellectual Property Day 2024 by conducting an oration on the IP Day Theme 'IP and the SDGs: Building our common future with innovation and creativity' by Shri. P. Balamurugan, Joint Controller of Patents & Designs, Patent Office, Chennai, on April 30, 2024, through Webex platform. Prof. K.P.Sudheer, Executive Vice President, KSCSTE & Principal Secretary, Science & Technology Department inaugurated the Programme. Dr. Ajit Prabhu V., Chief Scientist, KSCSTE delivered the Special Address. Around 260 participants including Students, Researchers, Scientists, Faculty members, Entrepreneurs, attended the Programme. E-Certificates were distributed to the participants.
- Kerala Biotechnology Commission organized a webinar on the topic 'Feeding the World: Contemplating Researcher's Contributions' by Dr. Sajitha Biju, Crop Scientist, School of Agriculture, Food and Ecosystem Sciences, Faculty of Science, The University of Melbourne, Australia, on May 30, 2024.

High-end Workshop on 'Advanced Energy Storage Materials and Device Fabrication'



Prof. Vijayamohanan K Pillai, Dean of Research, IISER, Tirupati inaugurated the workshop.

- DST- Science and Engineering Research Board (SERB) fully funded Karyashala, a High-end Workshop jointly organized by KSCSTE and the Department of Nanoscience and Technology, University of Calicut, Malappuram on 'Advanced Energy Storage Materials and Device Fabrication' at the University of Calicut from 27th May 2024 to 31st May 2024. The presidential address was delivered by Prof. M. K. Jayaraj, Vice Chancellor, University of Calicut. There were various technical sessions on fundamental concepts of energy storage, current trends and perspectives on energy storage materials, device fabrication, performance testing, energy storage applications, etc. were taken by subject experts from regionally and nationally reputed institutions such as IISER, IIT, CSIR-NIIST, CSIR-CECRI, and NIT. Participants were familiar with energy storage materials and devices through lab visits and demonstrations. There were 25 participants of Post-graduate and Ph.D. aspirants from various institutions across India attended the workshop.

World Environment Day 2024



*Dr. V. Balakrishnan, Member Secretary, Kerala State Biodiversity Board on 05-06-2024 after planting *Orophea uniflora* Hook.f. & Thomson (*Annonaceae*) in the Custard apple Park on 05-06-2024*



Students in the Carnivorous plants House as part of Sasthra Sameeksha Programme 2024 at JNTBGRI.

World Microbiome Day Celebrated

- The Centre of Excellence in Microbiome (CoEM), a new initiative of the Government of Kerala under the umbrella of Kerala State Council for Science Technology and Environment observed World Microbiome Day on June 27, 2024 in association with the National Academy of Science - Kerala Chapter, and the Department of Biotechnology of Mar Ivanios College. A one-Day Seminar on 'Microbiome: Current research trends and future perspectives' was conducted. The event was inaugurated by Dr. Rajan Khobragade IAS, Additional Chief secretary to Government, Health & Family Welfare Department, Government of Kerala. In his inaugural address, Dr. Meera George, Principal, Mar Ivanios College, presided over the function. Shri. M. C. Dathan, Mentor (Science) to Chief Minister delivered the Guest of Honour address. The Director of the Centre of Excellence in Microbiome, Dr. Sabu Thomas, provided an introductory speech on the importance of microbiomes and future activities of CoEM, The event also featured remarks from Prof. Dr. Edathil Vijayan, President, National Academy of Sciences - NASI-Kerala Chapter, Dr. Sarika A.R., Senior Scientist, KSCSTE and Dr. Lini N., Assistant Professor and Head, Department of Biotechnology, Mar Ivanios College, Thiruvananthapuram.

- KSCSTE-IPRICK conducted prior art patent database search on 26 applications and determined the patentability status of the inventions. Also, facilitated the filing of 3 Patents, 1 Trademark and 1 Industrial design application. 2 patents were granted during this period.
- Government of Kerala has identified CWRDM as a partner in the One Health Programme under the rebuild Kerala Initiative-preparation of Joint Outbreak Protocol. Ms. Nivetha Received Best Paper Award for the Research paper presentation entitled 'Dynamics of Evapotranspiration: A Kunnammangalam Case Study' at the National Conference on Water and Climate, School of Civil Engineering, VIT.
- Dr Sheeba, Chief Minister's NavaKeralam fellow presented her work at EGU General Assembly-2024 at Vienna, Austria.
- CWRDM Manimalakkunnu Sub Centre was awarded Green Office Certification with A plus Grade by Haritha Kerala Mission
- Dr. Raju Antony received Professor S.S. Bir Gold Medal Award 2024 for his achievements in the field of Pteridological research by Indian Fern Society.



- CWRDM signed MoU with ICAR- Central Coastal Agricultural Research Institute, Goa on 5th June 2024
- Identified the water stress hot spots in 7 districts (Kasaragod, Kannur, Kozhikode, Malappuram, Wayanad, Kottayam and Trivandrum) districts of Kerala.
- Atlas on 'Indian Wetlands' on 1:10000 scale published by SAC, ISRO with CWRDM as a collaborating partner.
- CWRDM provided technical support for preparation of Water budgets in 30 Block Panchayaths covering around 500 Grama Panchayaths in Kerala, under Haritha Keralam Mission initiative.

- Dr. V Anitha, Senior Principal Scientist, Forest Economics Department, KSCSTE-KFRI is named a member of the Kerala State Planning Board (KSPB), Working Group 5 to assess the "Cost Disabilities incurred by the state on account of the high incidence of human-animal interface" (Ref. ORDER No.SPB/14/2024-PCD & D.O.No.SPB/14/2024-PCD).
- A patent application (number 202441029292) has been filed for a method and device to selectively remove bark from Jiggat trees (Jiggat Tree Bark Stripping Device).
- The Centre for Timber Forensics and DNA Barcoding finished four consultancy projects confirming seized sandalwood logs' species identity and began a new project for Maharashtra Forest Department to identify bamboo species using DNA barcoding.
- The Centre for Analytical Instrumentation-Kerala (CAI-K) analyzed over 218 samples (internal and external) and trained 05 students.
- Dr. Anurag Dhyani received Complimentary Membership of Society for Conservation Biology, Washington, DC, USA
- First report of isolation of endophytic bacteria from mushroom *Pleurotus giganteus*. Two of the isolated endopytes were shown to possess antimicrobial activity against human pathogens and were identified belonging to *Serratia* species.
- As part of the in-house project titled, Systematic documentation

and Bioprospecting of ethnomedically important medicinal plants on tribal/traditional knowledge through molecular pharmacological approach;

- Completed data decoding of Chaliyar, Chungathara, Mampad and Vettom Gramapanchayats of Malappuram district.
- Data decoding of documented form coastal areas of Nirmaruthur and Vallikkunnu Gramapanchayaths and Ponnani and Parappanangadi Municipalities of Malappuram district is in progress.
- A Draft book on Ethnobiological studies of the coastal areas of Malappuram, Thrissur and Ernakulam districts of Kerala is under preparation for publication.
- Published 2 volumes of Journal of Traditional and Folk Practices, Vol. 10 No. 1 & 2 (2022) and Vol. 11 No. 1 & 2 (2023) with five and six peer reviewed articles respectively.

- The Hon'ble Chief Minister's Review meeting of R&D Centres of KSCSTE (KFRI, CWRDM, KSoM & MBGIPS) and the meeting of the Directors of R&D Centres of KSCSTE were held at MBGIPS on 07th June 2024.
- Field exploration conducted at Muzhakkunnu Gramapanchayath for developing a proposal for transforming 136 acre land in Muzhakkunnu Gramapanchayath (located at the bank of River Bavali in Kannur District) to a Biodiversity Knowledge Centre, jointly with the Haritha Keralam Mission.
- Dr. Raghupathi B: Recognised as an Editorial Board Member, Subject Specialist Editor of Horticulture in AGRICOS E- NEWS LETTER- An open access multidisciplinary monthly online magazine with membership id AC-EBM-17 W.e.f. May 2024
- Dr. N S Pradeep & Dr. Raghupathi B : A field visit conducted to Malabar Cancer Center, Thalassery on 02/04/2024 as part of the proposal submitted for the creation of a soothing space during cancer care at Malabar Cancer Centre, Thalassery, Kannur and enclosing the existing infrastructure within a garden atmosphere. The proposal covers providing board with QR codes, descriptive boards for groups of plants, establishing a plant nursery to grow and multiply plants and also training to continue its upkeep.
- Birds' Call- QR Code : Database of a few birds has been prepared and the details of the call of these birds are displayed at various location of the campus, with QR code for easy access to visitor.



MSSRF CAbC & DM WIMS Medical College partnered for a medical camp at Madamkunnu Adivasi Settlement, Wayanad preventive & curative care.

Appointments/Promotions/Retirements/Promotions



Dr. S. Pradeep Kumar, relieved of his duties as Member Secretary of KSCSTE on 24th June, 2024



Dr. V Ajit Prabhu , Chief Scientist , KSCSTE superannuated on 31st May 2024



Dr. K.R. Lekha, Chief Scientist, KSCSTE superannuated on 31st May 2024



Dr. S. Binu, Principal Scientist, JNTBGRI superannuated on 31st May 2024



Dr. R. Rajvikraman, Principal Scientist and HoD, Garden Management Division, JNTBGRI superannuated on 31st May 2024



Dr. C. Anilkumar, Principal Scientist, JNTBGRI superannuated on 31st May 2024



Sri. Vikraman Nair, Security Officer , JNTBGRI superannuated on 31st May 2024



Sri. G. Sudarshana Kurup, Gardener, JNTBGRI superannuated on 31st May 2024



Sri. Sasikumar N P, Office Attendant, CWRDM superannuated on 31st May 2024



Sri. Sivanandan, Office Attendant CWRDM superannuated on 31st May 2024



Dr. Rachel Reena Philip , (Retd. Prof.) Union Christian College Aluva has taken charges as Emeritus Scientist on 1st April 2024.



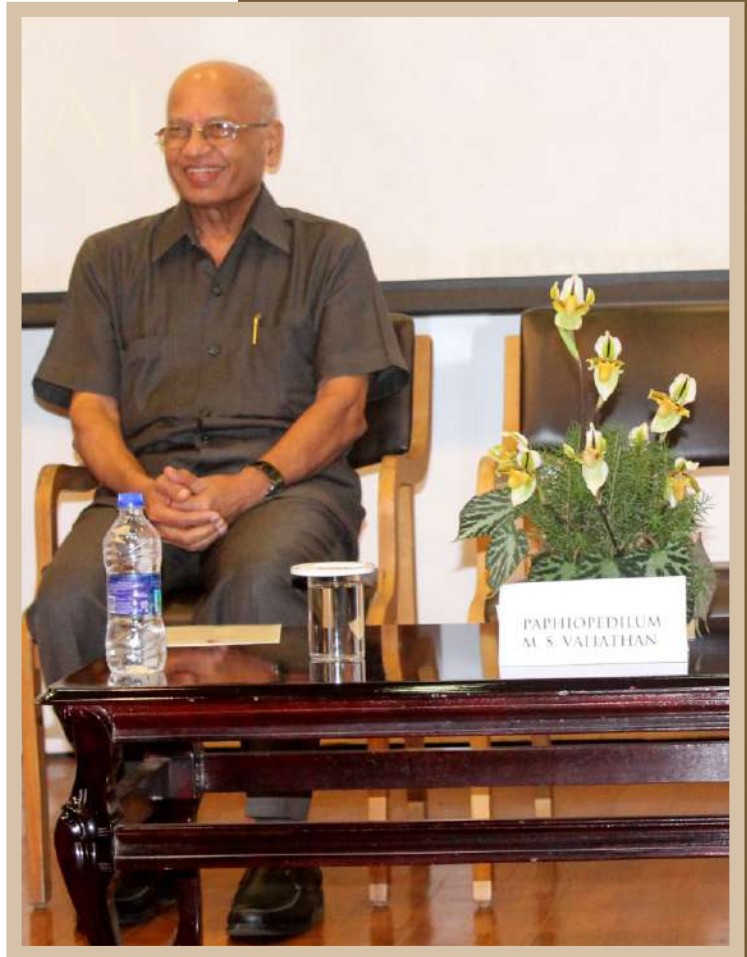
Dr. K. Rajendran took charge as the Director of ICCS (on deputation) on 20th June 2024. Prior to joining KSCSTE-ICCS as director, he served as a Chief Scientist at CSIR Fourth Paradigm Institute (CSIR-4PI), Bangalore for about two decades, Dr. Rajendran has been engaged in research and development in climate modeling, climate variability, climate change projection and climate change impact assessments, and held management roles within CSIR-4PI.



Group Photo taken as a part of retirement function of Dr. S. Pradeep Kumar, Former Member Secretary, KSCSTE



Prof K.P. Sudheer, Executive Vice President, KSCSTE, address the condolence meeting for Dr. M.S.Valiathan at KSCSTE HQ on 18th July 2024



Dr. M.S.Valiathan with the orchid named *Paphiopedilum msvaliathan*



**KERALA STATE COUNCIL FOR
SCIENCE, TECHNOLOGY AND ENVIRONMENT (KSCSTE)**
കേരള ശാസ്ത്ര സാങ്കേതിക പരിസ്ഥിതി കാൺസിൽ
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Technology Department, Government of Kerala

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