ANNUAL REPORT

2024-'25

KSCSTE - NATPAC

NATIONAL TRANSPORTATION PLANNING AND RESEARCH CENTRE

Head Office:- Thiruvananthapuram

Regional Office:- Ernakulam, Kozhikode

ANNUAL REPORT
2024-'25

KSCSTE - National Transportation Planning and Research Centre
(An Institution of Kerala State Council for Science, Technology and Environment)
K Karunakaran Transpark, Aakkulam, Thuruvikkal P.O, Thiruvananthapuram - 695 011
www.natpac.kerala.gov.in
E-Mail: contactus.natpac@kerala.gov.in
Phone: 0471-2779200

PUBLISHED BY
Dr. K.P. Sudheer
Director (i/c), NATPAC

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Director's Note…

Greetings from NATPAC!

KSCSTE - National Transportation Planning and Research Centre (KSCSTE-NATPAC) *functions as a Centre of Excellence in the fields of traffic engineering and transportation planning, highway and pavement engineering, planning of rural roads, regional transportation, public transport system, alternate options for transport system, water transport, traffic safety, tourism planning, transport energy and environmental studies. It supports the Government to formulate policies in relevant areas of transportation. I am happy to present before you this Annual Report of NATPAC for the period 2024-25. The Centre has made exponential progress over the years and the period under report is no exception.*

The Centre has carried out 25 research projects, 7 need based studies and 38 consultancy projects during the period under report. 11 research papers were published in journals, 22 conference proceedings and 64 research papers were presented at seminars. We are proud to won the ESRI India's GIS Day – Celebrate and Win Contest. NATPAC scientists were also members of various technical committees. NATPAC signed MoUs with research institutions for research and academic collaborations.

NATPAC convened a one-day workshop on "Energy and Environmental Challenges for Sustainable Transportation," funded under the Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) — a decentralized initiative sponsored by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. Two stakeholder meetings were organised in Kozhikode and Ernakulam to showcase the activities of the Centre and to extend its support in addressing various transportation issues and challenges faced by stakeholders in Kerala.

The Centre organised a one-day seminar on "Roads to a Sustainable Future: Biodiversity Conservation through Green Transportation", sponsored by the Kerala State Biodiversity Board (KSSB), on 6th February 2025 at the NATPAC Akkulam Campus. GIS Day 2024 was observed by organising an expert talk and a webinar. The TransTech and TransPedia Research talk series conducted by NATPAC envisioned to promote research for shared benefits, by disseminating knowledge on diverse topics from cutting-edge technologies to sustainable solutions.

The Library of KSCSTE-NATPAC is a specialized one that caters to the scientific community of the institute and extends its services to the scientists and research students of various other research institutions and universities. The library is maintaining a blog natpaclibrary1.blogspot.in to make users abreast of the latest developments in the library. Web OPAC extension of KSCSTE-NATPAC Library is available in https://natpac.libsoft.org/.

We provide facilities and guidance to students to accomplish their project work and training. Several students from reputed academic institutions carried out their project work for B.Tech/M.Tech programmes during this period.

The continuous support obtained from the Executive Vice President of KSCSTE, Research Council and Management Committee of NATPAC are thankfully acknowledged. My gratitude to all the retired staffs of NATPAC who made immense contributions in building up the Centre. I wish to place on record my heartfelt gratitude to our staff, whose commitment, hard work, and collaborative spirit have been the driving force behind the Centre's successes this year. As Joel A. Barker says "Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world."

With Best Wishes

Dr. K.P. Sudheer
Director (i/c), NATPAC

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ABOUT THE INSTITUTE

In 1976, National Traffic Planning and Automation Centre (NATPAC) was established as a unit of Kerala State Electronics Development Corporation (KELTRON), Public Sector Enterprise owned by the Government of Kerala. Owing to the contributions and achievements made to the State, it was reconstituted into National Transportation Planning and Research Centre in the year 1982, an autonomous Research and Development Centre under the Department of Science & Technology, Government of Kerala. In 2002, NATPAC was amalgamated with Kerala State Council for Science, Technology and Environment (KSCSTE), an autonomous body under Department of Science and Technology, Government of Kerala.

KSCSTE-NATPAC undertakes research, consultancy, and outreach programmes in the fields of traffic engineering and transportation planning, highway and pavement engineering, planning of rural roads, regional transportation, public transport system, alternate options for transport system, water transport, traffic safety, tourism planning, transport energy and environmental studies. The Centre has its Headoffice in Thiruvananthapuram and Regional Centres in Kozhikode and Ernakulam districts.

The vision and mission of NATPAC are:

Vision

"To develop a safe, sustainable, efficient and equitable transportation system through scientific, multi-disciplinary and innovative interventions for societal needs".

Mission

- To promote a safe, reliable, and integrated transport system for fair and effective movement of goods and people;
- To engage and collaborate with multi-disciplinary stakeholders to evolve sustainable and optimal solutions;
- To develop design strategies with state-of-the-art laboratories and technologies through research and practice;
- To explore and advocate intelligent technologies assisted with advanced computation and data analytics for smart mobility;
- To frame guidelines, policies and protocols for transportation needs and to deliver scientific advice to the stakeholders;
- To establish a Centre of Excellence in the field of transportation engineering through research and development;

- To disseminate knowledge to user communities, practitioners, and institutions for fostering the growth of transport sector.

NATPAC presently has a multidisciplinary team of 25 Scientists specialized in the different fields of Transportation Engineering and its allied areas supported by Technical Officers and Technical Assistants. The Administrative and Accounts sections of the Institute are coordinated by the Registrar and assist the Director in managing the day-to-day functioning of the Institute.

Thrust Areas of Research

- Traffic Safety / Intelligent Transportation System
- Marginal / Alternate materials for Transport Infrastructure
- Public Transport System and Logistics

Research Council

1	Prof. (Dr.) Tom V Mathew, IIT Bombay	Chairman
2	Dr. S. Velmurugan, Chief Scientist, CSIR-CRRI	Member
3	Prof. (Dr.) Lelitha Devi Vanajakshi, IIT Madras	Member
4	Prof. (Dr.) Kusum Sudhakar Reddy, IIT Kharagpur	Member
5	Prof. (Dr.) Ashalatha R, CET	Member
6	Prof. (Dr.) M. V. L. R. Anjaneyulu, NIT Calicut	Member
7	The Director, NATPAC	Member Convenor
8	The Member Secretary, KSCSTE	Permanent Invitee

The Research Council met on 16th and 17th August 2024 (31st RC) under the chairmanship of Prof. (Dr.) Tom V Mathew.

Management Committee

1	The Director, NATPAC	Chairman
2	Joint Secretary, Science & Technology Dept., Government of Kerala	Member
3	Member Secretary, KSCSTE	Member
4	Registrar, NATPAC	Member
5	Director, ICCS	Member
6	Senior most Scientist, NATPAC	Member

The Management Committee met on 26th September 2024 (42nd MC) under the chairmanship of the Director, NATPAC.

Information Officers as per the Right to Information Act

1	State Public Information Officer (Administrative matters)	Shri. D. Shaju, Section Officer
2	State Public Information Officer (Scientific &Technical matters)	Shri. Subin B, Senior Scientist
3	Asst. Public Information Officer	Smt. Arya S K, Office Assistant Grade 2 (– 01.04.2024 – 09.12.2024) Smt. Mayadevi M, Office Assistant Grade 2 (10.12.2024 – 31.03.2025)
4	Appellate Authority, RTI Act	Director

Collaborations

Sl. No.	**MoU Institutes**	**Date of Signing**
1	Indian Institute of Technology (IIT), Palakkad	29.05.2024
2	Maulana Azad National Institute of Technology (MANIT), Bhopal	29.05.2024
3	Additional Skill Acquisition Programme (ASAP) Kerala	07.06.2024
4	Indian Institute of Technology (IIT), Bombay	04.10.2024
5	RASTA Center for Road Technology, Bangalore	27.01.2025
	MoA Institute	
1	St. Thomas College of Engineering & Technology, Chengannur	11.07.2024

RESEARCH & DEVELOPMENT PROGRAMMES

ONGOING PROJECTS

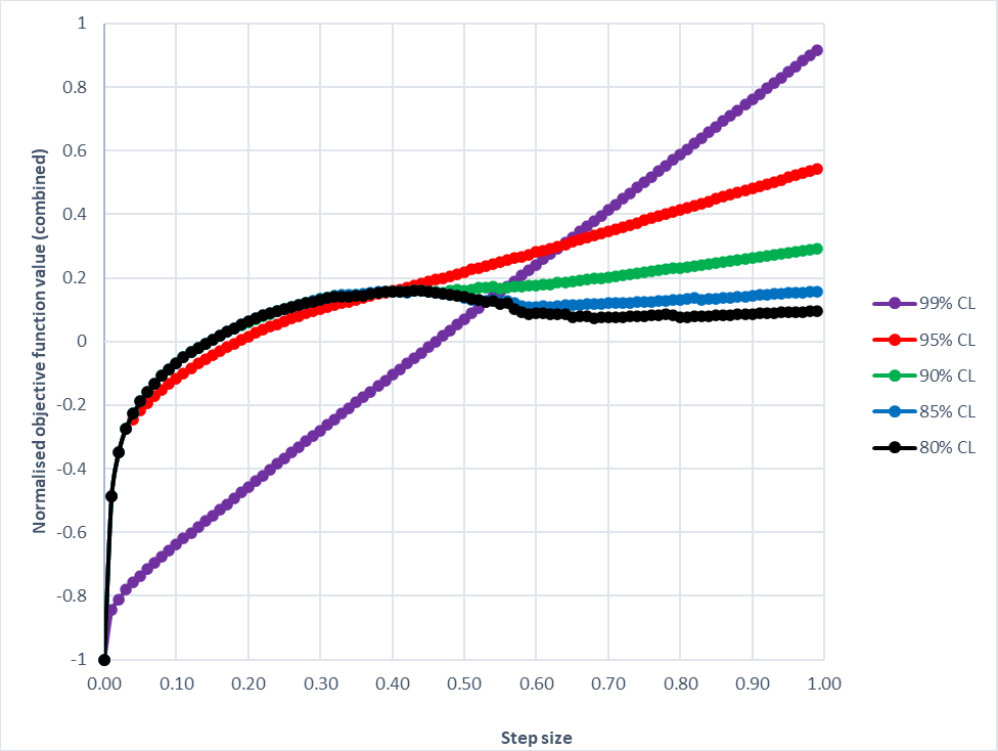
1. *Synthesis of rich origin –destination matrices using fusion of multiple sparse data sources*

PI: Shri. B Anish Kini, Scientist
Duration: 2021- 26

As travel patterns are constantly changing due to higher ownership of private vehicles, growth of ride hailing apps etc., urban level planning does not serve the purpose. Therefore, regional planning is the need of the hour. Dynamic travel demand on the regional level is quintessential for transit scheduling and time-based implementation of traffic management measures. This calls for the development of a Regional Dynamic Travel Demand Model (RD-TDM). Moreover, as Kerala has a rural-urban continuum development pattern, a clear distinction of urban and rural areas is difficult. In this context, there needs to be a methodology which can help identify priority zones in the network where scant resources need to be invested for trip related data collection. This is of essence also due to the unavailability of periodic household level trip data or travel related proxies.

The use of betweenness centrality (BC) for estimating traffic volume and spatial interactions has motivated its use in determining the travel demand on large networks. Temporal Origin Destination Betweenness Centrality (TODBC) weighed by the normalised population and employment of the OD pair has been proposed through this study which quantifies the OD interactions at the node level. The BC of nodes is aggregated at the zonal level. Clusters are built using combinations of zonal BC and zonal aggregates such as population and employment which is tested for statistical significance using ANOVA and Post-Hoc analysis. Multi objective optimisation has been used to identify the priority zones for data collection by maximising the zonal BC and minimising the resource budget requirement, constrained to a statistically significant sample size from each cluster. Figure below shows the variation of the combined objective function (normalised) value with varying step size (0 to 1 increments of 0.01), which helps in obtaining the limiting resource budget required for data collection for developing the RD-TDM. The proposed methodology has been tested on the synthetic network of urban network of Thiruvananthapuram district and implemented on the regional network of Kerala state. This implementation with sensitivity analysis (i.e. changing confidence levels CL of 99%, 95%, 90%, 85% and 80%) holds promise for decision makers by identifying priority TAZ where trip related data needs to be collected,

along with knowledge of phasing of funding and data collection efforts. It has been observed that higher BC coverage is obtained with lower area coverage, which implies that higher OD interactions are getting captured by surveying a smaller area and therefore forms a vital tool in the hands of policymakers.



Combined objective function value with varying confidence levels

2. *Study on effect of dynamic speed display boards on driver behaviour at black spots and critical locations*

PI: Shri. Subin B, Senior Scientist
Duration: 2022-25

This study identified the various factors which influences the overspeeding behaviour and investigated the influence of Dynamic Speed Display Board (DSDB) (real time speed feedback device) on drivers' speeding behaviour. Driver's tendency to comply with the speed limit after installing the dynamic speed display unit (DSDB) and their behaviour changes are the primary focus of this study. The scope of the study is limited to the application and evaluation of the DSDB signs in various black spot locations and crash-prone locations under different category roads in Kerala.

Blackspots were identified at Adoor-Kottarakkara Road (Enathu and Kulakkada) in SH-1, Pala-Ponkunnam Road (Koprakkalam) and Muvattupuzha-Thodupuzha road

(Kadhalikkadu) in SH8. Overspeeding-related safety issues are still prevalent at this stretch. Though overspeeding and overtaking is prohibited through road signs and markings, due to disregard of these, the stretch is crash prone. The Dynamic Speed Display Board (DSDB) was installed at these locations with the posted speed limit signs. Figure below shows the DSDB installed at the survey locations. Best suited positioning of the DSDB is above the centre of the lane properly fixed on gantries but due to the technical difficulties in materializing the same, the unit is installed besides the shoulder ensuring long visibility.

DSDB installed at the survey locations

The installation of DSDB significantly reduces the percentage of over-speeding vehicles across all types, indicating the efficacy of the device in speed reduction. This highlights the role of DSDB in increasing driver awareness among their speed and encouraging adherence to speed limits. Regardless of factors such as gender, age, or other socio-demographic details, the majority of drivers express a positive perception regarding DSDB. Whereas the factors such as age, gender, trip purpose and driving experience can influence driver's likelihood of engaging in overspeeding behavior. Attitude towards DSDB (ATD) and Perceived Behavioral Control (PBC) and Subjective Norm (SBN) are significant predictors of the Intention (INT) to reduce speed. Among these, PBC has a stronger influence on intension to reduce speed. Intention (INT) to reduce speed is a strong predictor of actual speed reduction behaviour (SPR), indicating that if drivers have the intention to reduce speed, they are very likely to follow through with the behaviour. DSDBs enhance drivers' Perceived Behavioral Control by providing real-time speed feedback, making them more aware and encouraging better speed regulation. Educational campaigns can improve speed compliance by raising awareness about the dangers of speeding, explaining the purpose of DSDBs, and promoting responsible driving behavior through community outreach, workshops, and media engagement.

3. *Development of Parking Policy Framework for Kerala*

PI: Dr. Shaheem S, Principal Scientist
Duration: 2022-25

With the rapid global expansion of urban areas, there is a surge in the requirement for parking spaces, leading to significant parking challenges in major cities. This study is part of an ongoing effort to develop a parking policy framework for Kerala. The primary goal of this study is to create a thorough knowledge of how commuters behave while making parking decisions, and to analyze the features of parking in the various land uses within the study region. Major municipal corporations and municipalities in Kerala were selected for the current study. The first phase of the study was conducted in municipal corporations such as Thiruvananthapuram and Kozhikode, followed by the second phase in three major municipalities in Kerala, namely Alappuzha, Palakkad, and Thalasseri. The third phase is extended to minor municipalities with populations less than one lakh namely Attingal and Kalamassery. Trip generation and parking rate models were developed for seven different land uses such as mercantile, restaurant, residential, hotels with lodging, hospitals, public offices and private offices. Mode choice models of parkers were developed using the data collected from the user opinion survey to identify significant factors influencing choice of various modes.

Trip generation models were developed for different land uses are expressed in terms of trips per sq.m/no: of beds/ no: of rooms/no: of seats. Parking policies based on population criteria were formulated to manage parking supply and demand. The parking policies of urban areas in Kerala were formulated for three different population criteria i.e., 5 lakhs to 15 lakhs population (Metropolitan cities), 1 lakh to 5 lakhs population (Major Municipalities), and <1 lakh population (Minor Municipalities).The peak hour parking model developed for mercantile land use shows a higher rate of 2.32 ECS /90 sq.m by major municipalities followed by corporations (2.2) and then minor municipalities (1.41). The peak hour parking model developed for restaurant land use shows a higher rate of 9.29 ECS /20 seats by major municipalities followed by corporations (9.2) and then minor municipalities (8.58). The peak hour parking model developed for public office land use shows a higher rate of 2.53 ECS /90 sq.m by major municipalities followed by corporations (2.2). For residential land use the parking rate is higher for major municipalities of 1.86 ECS/90 sq.m followed by corporations (1.5). The peak hour parking model developed for

private office land use shows a higher rate of 2.16 ECS /100 sq.m by minor municipalities followed by major municipalities (2.04). The peak hour parking model developed for hospital land use shows a higher rate of 8.91 ECS /10 beds by major municipalities followed by corporations (8.09). Finally, the peak hour parking model developed for hotel land use shows a higher rate of 4.10 ECS /4 rooms by major municipalities followed by corporations (3.6).

Parking rates estimated were compared with the relevant IRC, ITE and Kerala Municipal Building Rules (KMBR). The study revealed that the space required for parking in each land use category across the three municipalities exceeds the current parking standards. All land uses exhibited parking rates ranging between 1 and 10 ECS, which are significantly higher than the existing standards prescribed by the Indian Roads Congress (IRC) and Kerala Municipal Building Rules (KMBR). These findings highlight the growing parking demand across land use types and the need for revised policy interventions. Thus, parking policies were recommended to meet the challenging existing and future parking demands of major cities in Kerala.

4. *Investigation of pavement deterioration due to the overloading of vehicles*

PI: Shri. Chandra Prathap R, Scientist
Duration: 2022-25

This study assessed pavement deterioration associated with overloaded freight movement on national highways in Kerala. This year focused on structured scenario evaluation, topographic effects, and simulation-based performance assessment to draw comprehensive insights on damage patterns and potential mitigation strategies. One of the key contributions during this year was a structured comparison of overloading situations across various regulatory and enforcement frameworks. The study assessed five loading scenarios that reflect real-world variations in axle weight violations, aiming to understand their relative impact on pavement wear. This exercise helped to establish a clearer picture of how targeted regulation can influence long-term structural performance and service life outcomes.

In addition to load variation, the study addressed the often-overlooked effect of gradients in terrain, especially in hilly corridors. By examining a range of upward slopes and interpreting axle load redistribution on inclines, it was found that road geometry plays a critical role in amplifying pavement stress under overloading. The analysis underscored the need for

considering such conditions explicitly in both design and policy decisions. Further, the project integrated field-derived pavement data with software-based evaluation methods to support decision-making. Simplified models were used to illustrate the structural strain responses under different traffic and terrain profiles. These tools allowed the team to estimate potential reductions in service life and assess the implications of enforcement practices and vehicle regulation.

Another notable addition was the development of an analytical model to assess vertical stress and surface deformation under traffic loads, simulating realistic axle load effects. These simulations helped visualize the underlying deformation trends contributing to surface rutting and enabled a better understanding of subsurface strain behavior.

The study also captured recent field changes through repeat pavement condition surveys and load data collection, ensuring that the results reflect current traffic realities. The deterioration trends observed during the reporting period reinforce the broader conclusions about the need for strengthening regulatory enforcement on overloading and accounting for geometric constraints in design. This final phase has rounded out the investigation with a holistic view of the problem, offering practical and research-oriented insights that can inform future planning, design, and policy discussions. The findings form a sound base for more advanced academic inquiry and publications, while also contributing to the long-term objectives of improving highway asset management in heavily trafficked corridors.

5. *Effect of permeability on the performance of bituminous mixes*

PI: Shri. Wilson K C, Senior Scientist
Duration: 2023-25

Water infiltration into asphalt pavements can lead to moisture damage, primarily by weakening the cohesive bond between binder particles and the adhesive bond between binder and aggregates. Measuring the permeability of Hot-Mix Asphalt (HMA) mixtures is essential to assess water ingress into pavement layers. This engrossed moisture can initiate and propagate pavement distress, adversely affecting the structural integrity and functional performance of the pavement; ultimately reducing the service life. Present study investigates the impact of permeability on the performance of bituminous surface courses, specifically Bituminous Concrete (BC) and Stone Matrix Asphalt (SMA), incorporating various fillers and binders.

Marshall specimens at 4% and 7% air voids were prepared in laboratory for the determination of indirect tensile strength (ITS), tensile strength ratio (TSR), coefficient of vertical permeability (kv) and air void topology at optimum binder content. ITS dry testing followed Asphalt Institute MS II; wet conditioning for adhesion failure and pore-pressure were applied by MIST. FM 5-565 procedure was adopted for the measurement of coefficient of vertical permeability as per falling head principle, followed by X ray CT scanning of specimen. Test results indicated that the permeability of all mix combinations was below the critical value. Among the tested fillers, lime was found to be the most effective in reducing permeability. Analysis of the permeability coefficient in relation to TSR and ITS indicates an inverse relationship between the coefficient of permeability.

In the case of BC mixes, MIST conditioning resulted in an increase in the vertical permeability coefficient (k_v) by more than 100%, and in some instances up to 200%, particularly for mixes incorporating VG 30 binder with Dust and Cement fillers. This substantial increase suggests that the pore pressure generated during conditioning significantly alters the internal void structure, enhancing permeability. Analysis of porosity along horizontal and vertical sections of BC mixes revealed that the mix containing lime exhibited lowest porosity. Percolation number in the horizontal sections of BC ranges from 0.68 to 0.78, whereas in the vertical sections it ranges from 0.70 to 0.97, shows higher connectivity along vertical direction. In SMA mixes, lime consistently reduced perviousness at both 4% and 7% air void while NRMB binder and quarry dust demonstrated lower percolation numbers in both horizontal and vertical sections. For both BC and SMA mixes, the vertical permeability coefficient remained consistently below the critical permeability threshold, thereby supporting long-term structural integrity. Additionally, differences observed in porosity, Euler's number, and percolation number between horizontal and vertical slices of the samples reveal the presence of anisotropy in the hydraulic conductivity of the mixes.

6. *Stabilisation of pavement layers with the use of Reclaimed Asphalt Pavement (RAP) confined in coir geosynthetics*

PI: Dr. Salini U, Scientist
Duration: 2023-26

The base course in pavement construction is crucial for the stability and longevity of roads. Traditional methods rely on conventional aggregates, which significantly deplete natural

resources. This study explores the use of Recycled Asphalt Pavement (RAP) and Construction and Demolition (C&D) waste as alternative base course materials in the place of natural aggregates (NA) to address environmental concerns and resource scarcity. Although previous research has examined synthetic geosynthetics for reinforcing base courses, there has been limited investigation into the use of coir geocells for this purpose. Coir geosynthetics offer advantages in sustainability, cost-effectiveness, and local availability. This study evaluates the performance of base course layer reinforced with coir geocells. The performance of coir geocell reinforced base course with conventional natural aggregates is compared to that of RAP, and CDW as infill material in coir geocells. The methodology involves a comprehensive literature review, experimental investigations, parametric studies, cost analysis, and load-carrying mechanism evaluations, culminating in recommendations for optimal use and future research directions. Monotonic plate load tests, were utilized to investigate the behavior of coir geocells, demonstrating their suitability as pavement materials. Interim results demonstrate that coir geocell reinforcement significantly improved the ultimate bearing capacity (UBC) of pavement models, with G2 geocells showing superior load-bearing efficiency due to their smaller cell structure. These cost-effective and environmentally friendly alternatives to synthetic geocells can support heavier loads. The choice of infill material, such as NA, RAP, or CDW, significantly influenced bearing capacity enhancement. CDW showed the highest bearing capacity, followed by natural aggregates and RAP. Recycled materials like CDW showed higher initial and sustained improvements due to enhanced interlocking and frictional resistance. The surface deformation profiles showed the effectiveness of coir geocells in minimizing maximum heave and redistributing stress away from the load plate. Coir geocells retained their shape after loading, demonstrating their potential for performance comparable to synthetic geocells. The significance of this research lies in its potential to provide a cost-effective and sustainable alternative to synthetic geosynthetics, particularly for resource-constrained regions. By reinforcing RAP with coir geosynthetics, the study contributes to climate-resilient and eco-friendly infrastructure development, aligning with Kerala's environmental and waste management challenges.

Coir geocell with aggregate

Plate Load Test Setup

7. *Study on road crashes involving vulnerable road users with focus on pedestrian fatal crashes*

PI: Shri. V S Sanjay Kumar, Principal Scientist
Duration: 2023-26

Pedestrians are among the most vulnerable road users, accounting for 23% of global road crash fatalities. In Kerala, the situation is even more concerning, with over 5,100 pedestrian deaths reported between 2018 and 2022, representing 26.5% of all road crash fatalities in the state. This study focused on pedestrian crashes in Kerala during 2018, 2019, and 2022, analyzing a total of 11,807 pedestrian-related crashes. These include 1,450 fatal, 8,452 grievous injury, and 1,905 minor injury crashes. The study is driven by three primary objectives: to demarcate pedestrian-vulnerable corridors in Kerala based on crash records, to develop models for predicting pedestrian crashes, and to devise a methodology for establishing a Pedestrian Vulnerability Index. An important expected outcome of this research is the development of a Pedestrian Safety Manual, which will offer evidence-based guidelines and strategies to enhance pedestrian safety across Kerala.

Crash data for the study was obtained from the Kerala State Crime Records Bureau for the three selected years. Initially, 400 pedestrian-vulnerable corridors were identified based on reported fatalities. These corridors spanned a total of 555.81 km, with individual corridor lengths ranging from 200 to 4,000 meters. Each recorded between 2 and 24 pedestrian fatalities, and the majority were situated in rural areas. During the financial year 2024–2025, the scope of the study was significantly expanded, with a total of 1,778 pedestrian-vulnerable corridors demarcated based on pedestrian crashes, spanning 1,893.64 km. These corridors accounted for 7,372 pedestrian crashes, representing 62.44% of all such incidents

reported during the period. Among the districts, Ernakulam recorded the highest number of vulnerable corridors (227), covering 266.68 km and accounting for 1,079 crashes and 196 fatalities. Thiruvananthapuram followed with 219 corridors extending over 209.39 km and reported the highest number of pedestrian fatalities (234). Kozhikode had 173 corridors totaling 211.34 km, which saw 757 crashes and 163 deaths. The corridor lengths varied considerably, ranging from 120 m to 16,237 m, and were predominantly located in rural areas (61%), with urban areas accounting for 31%. Of these, 462 corridors were identified as repeated crash-prone zones, contributing to 2,003 pedestrian crashes and 248 fatalities. To understand corridor characteristics, clustering was performed using the Crash Severity Index (CSI), resulting in four clusters comprising 1,493, 243, 2, and 40 corridors, respectively. To supplement the analysis, road inventory and traffic surveys were conducted on 220 corridors: 150 from Cluster 1, 50 from Cluster 2, and 20 from Cluster 4. Additionally, FIR data containing 10,000 pedestrian crash records were analyzed. These provided insights into crash-specific attributes, such as pedestrian demographics, movement types, causes of crashes, time of occurrence, and infrastructure availability.

8. *Evaluation of the effectiveness of traffic calming measures in Kerala*

PI: Shri. Arun Chandran, Senior Scientist
Duration: 2023-25

Traffic Calming Measures (TCMs) are widely used around the world with the objective of improving safety on roads by reducing the speed of the vehicles. The various literatures pertaining to the study was collected and were reviewed and the objectives and methodology for the study was formulated. The study locations were selected such that it includes various urban and rural locations in Kerala. In this study, the impact of three types of TCMs installed in roads of Kerala such as Transverse Bar Markings (TBM), Speed Humps and Speed Tables in speed reduction and safety are studied. TCMs selected for study has varying geometric features and the roads selected for the study also varied in geometrical and land use characteristics. Twenty-one locations in the urban and rural areas of Thiruvananthapuram (7), Kollam (3), Kottayam (3), and Kozhikode (8) were selected for the study.

Study locations

Traffic data collection was conducted using drone surveillance and videographic surveying using a camera during off peak hours and crash data was collected from police stations. Data extraction was completed using Kinovea and Data from Sky software. The percentage reduction in speed of vehicles at traffic calmed links were studied and it was observed that the maximum reduction in speed was observed at locations with speed tables and speed humps, 58.4% and 64% respectively. The reduction in crashes were observed more at same locations, about 40%.

Multiple linear regression models were developed to represent the percentage speed reduction of vehicles at traffic calmed locations. As the height of the speed table and speed humps increases the speed reduces, thus the percentage reduction in speed increases and as the width of the speed table and speed hump increases, the speed increases, thus the percentage reduction in speed decreases. An effectiveness indicator was used to determine the effectiveness of the measures installed at different locations. Comparing the percentage speed reduction and accident data before and after the implementation of the measures at each location and effectiveness indicator, speed tables and speed humps are found to be suitable for these roads.

9. *Problems and prospects of inland water transportation in Kuttanad region*

PI: Dr. Sabitha N M, Senior Scientist
Duration: 2023-26

The project aims to comprehensively evaluate and enhance the potential of water-based transport in Kuttanad by addressing key infrastructural, environmental, and operational challenges. The objectives include updating the GIS database of existing water routes, proposing a scientific classification system for all regional waterways (excluding national waterways), and identifying technical issues such as inadequate bridge clearances and siltation. The study also conducts hydrologic and flood vulnerability analyses to assess the impact of climate change on water transport. It aims to understand commuter behaviour, evaluate the socio-economic implications of current practices, and prepare an actionable plan to promote sustainable and efficient inland water transportation in the region.

A field visit was conducted to assess the challenges facing water transportation in the Kuttanad region. Several issues were identified, such as narrowing canal widths, encroachment on water bodies, instances of flooding, shallow areas, water pollution, blockages caused by aquatic weeds, sand deposits, overcrowding by houseboats, and the general lack of maintenance of waterways. These challenges present significant barriers to the efficiency of inland water transport and require urgent attention to maintain the functionality of the system. To effectively assess and classify the waterways, comprehensive data on the waterway network and associated cross-structures were collected. This included an inventory of 770 kilometers of canals, detailing canal names, locations, widths, types of bank protection, adjacent land use, water quality, and other factors. A bridge inventory was also conducted, documenting the names, locations, dimensions, and clearances of each bridge. Additionally, information about electrical lines, including location, capacity, and clearances, was gathered. The boat jetty inventory contained details on locations, structures, terminal facilities, and accessibility, all essential for improving the operational capacity and longevity of the waterways.

A detailed morphometric analysis was performed on five rivers—Pamba, Achankovil, Manimala, Meenachil, and Muvattupuzha—draining into Vembanad Lake. Using DEM-derived contour maps and manually digitized drainage networks from toposheets, key morphometric parameters were assessed under areal, linear, and relief categories. Findings revealed variations in basin shapes, drainage densities, and elevation profiles. Pamba exhibited the highest stream count and basin area, while Manimala demonstrated efficient runoff. Achankovil had high erosion potential due to steep slopes. The TOPSIS method ranked flood susceptibility, with Pamba being most vulnerable and Meenachil the least. This analysis supports flood risk management and planning.

Rainfall trends were analyzed using CHIRPS daily data (2015–2024) via Google Earth Engine (GEE). Assessments of pre-monsoon (January–March) and post-monsoon (June–October) rainfall revealed seasonal impacts on flood potential. Based on flood frequency, hazard zones were classified as Very Low, Low, Moderate, and High. The High-Risk Zone, concentrated around Pamba River, was identified as the most flood prone. This classification allows for prioritized flood mitigation and resource planning.

A 20-year projection (2034–2054) analyzed the effects of land use and land cover (LULC) changes on flood risk and ecosystem services in the Achankovil River Basin. Using CA-

ANN modeling, HEC-RAS hydraulic simulations, and ecosystem service valuation (ESV), the study found significant increases in built-up and agricultural areas at the expense of forests and wetlands. This shift resulted in the expansion of flood-prone areas and increased flood depths. ESVs related to water regulation and forest services sharply declined, stressing the need for integrated land management and nature-based flood mitigation strategies.

Additionally, a study investigated mode choice behavior and commuter preferences in Kuttanad, where inland water transport (IWT) has been historically dominant. Despite its ecological and economic benefits, a shift toward road transport was noted due to infrastructural limitations and service irregularities. A survey of 566 commuters revealed key socio-demographic characteristics, with a dominant user base of married working adults (age 32–56). Peak usage occurred between 9:00–10:00 AM, with 74% satisfaction levels, though 10% expressed dissatisfaction. Notably, 93.1% of respondents expressed interest in metro services, indicating the need for improved infrastructure and efficient service delivery to promote sustainable transport alternatives.

10. *Safety implications of vehicle maneuvering characteristics on two lane highways with heterogeneous traffic*

PI: Smt. P N Salini, Senior Scientist
Duration:2023-26

Unsafe vehicle maneuvering and risk-taking behaviour while passing slower vehicles is prevalent on highways in Kerala. This significantly affect operations and safety of traffic especially at vulnerable locations like straight stretches prevalent with speeding and risky overtaking maneuvers. The present study evolves out a safety evaluation framework for risk assessment of unsafe vehicle maneuvering on highways which can be insightful towards adopting appropriate safety interventions. The study intended to carry out the risk assessment of unsafe vehicle maneuvering during lane changes while overtaking by vehicles on two-lane two-way highways.

The study is conducted on straight road stretches in vulnerable locations of selected highways in Kerala. Video graphic methods and surveys using instrumented vehicles with cameras and sensors and drone videography were employed for field data collection. Analysis on various data collected were done to arrive at estimates of surrogate safety measures which indicates the extent of risks involved in vehicle maneuvering by integrating

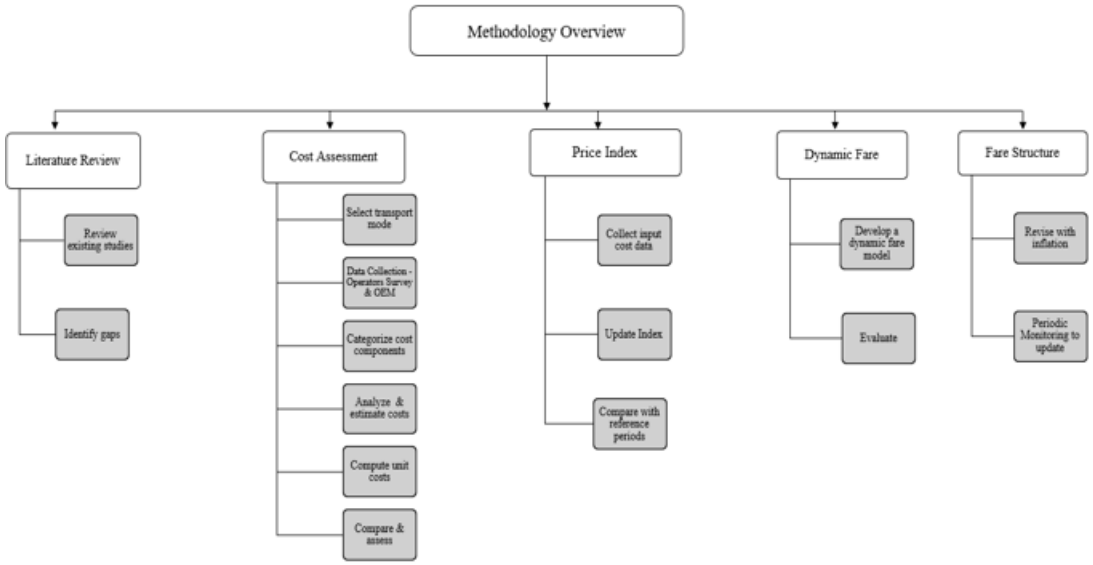
the exposure time to hazardous situation and the severity level involved in during the overtaking operations.

The potential risks between interacting vehicles during overtaking manoeuvres is assessed by doing safety margin analysis considering the distance gap existing between the interacting vehicles during overtaking and the stopping distance of vehicles in the case of a potential crash event. From estimated SSM measures, it is inferred that risks are associated with either any or all of the events in the overtaking maneuvers and the risks involved are estimated in terms of indices. A rational methodology is being evolved out for safety evaluation of the risky vehicle maneuvers on two-lane two-way highways.

11. *Periodic updation of price indices for different public transport and freight operations*

PI: Dr. Sanjai R J, Technical Officer
Duration: 2024-25

NATPAC has been consistently doing studies on fare revisions of all public and freight transport modes in Kerala, including stage carriages, taxis, autorickshaws, state passenger boat services, and goods vehicles. The project addressed the crucial need for maintaining an economically sustainable and socially equitable fare structure by analysing operational costs across various transport modes, including stage carriages, autorickshaws, taxis, container trailers, etc. This systematic approach has provided the Kerala government with reliable recommendations for fare adjustments for over 14 years.



General Framework of the Study

In 2024-25, the study incorporated comprehensive surveys capturing both variable and fixed costs. Using data from original equipment manufacturers (OEMs) and detailed analyses via reverse engineering principles, operational costs for multiple fuel types of autorickshaws were computed as part of the revision of the Standard Cost Tables. This standard cost table facilitated the creation of a revised composite price index, which offers insights into cost fluctuations across reference periods.

The study further explored the implementation of dynamic pricing. It recommended a customized dynamic pricing model suitable for Kerala, integrating operational costs, demand-supply dynamics, and a controlled surge multiplier (maximum 100%) with typical discounts capped at 25%. The analysis revealed key challenges associated with dynamic pricing, including potential driver dissatisfaction due to income variability, market instability from aggressive competition, consumer fairness perceptions, technological limitations affecting reliability, and the socioeconomic impact on lower-income groups.

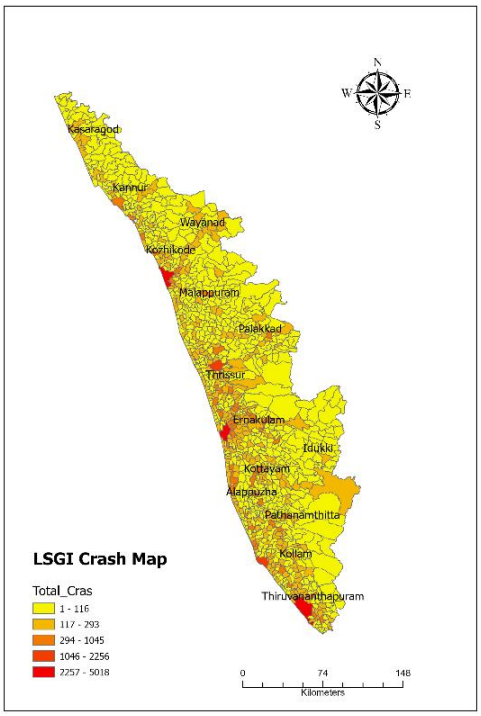
The results demonstrated a steady increase in price indices across different transport categories. Between March 2022 and February 2025, autorickshaw operations (PIARO) saw a cumulative rise of 3.78%, taxis (PITO) 3.40%, and significant hikes in container trailer operations (PICTO), ranging between 22.85% and 25.05% depending on vehicle type and axle count. Notably, diesel prices rose moderately (3.22%); however, substantial increases occurred in other operational costs like tyres (10.47%), lubricants (4.70%), spare parts (2.54%), and crew wages (8.80%). In conclusion, the project effectively outlines fare trends, operational cost dynamics, and the challenges in dynamic pricing, providing comprehensive guidelines for sustainable fare revisions. Ongoing efforts include the updating of price indices, evaluating economic impacts on transport operators, and integrating technology-driven cost assessments to enhance decision-making accuracy.

NEW PROJECTS

1. *Spatio-temporal analysis of traffic crashes in the Kerala State – Level 1: Macroscopic level*

PIs: Shri. Ebin Sam S, Scientist
Dr. Vasudevan N, Junior Scientist
Duration: 2024-27

This research aims to study the crashes at a regional/zonal level comprising of larger road network area at macroscopic scale for the State of Kerala. Secondary data such as crash data, administrative boundaries, weather data, etc were collected from the concerned ministry/departments/agencies. Maps required for the study were were digitized and converted to shapefiles. Spatial and temporal analysis were undertaken, and it was found that that Ernakulam has a greater number of crashes as well as victims every month, in the district level analysis. Kozhikode Taluk had the highest number of crashes in the Subdistrict level analysis. In the Village level, Ernakulam Village was found to have the highest crashes, whereas in the LSGI level, Thiruvananthapuram Municipal Corporation had the highest number of crashes.



Total Crashes (2021-2023) across the LSGIs in Kerala

The final output will be a crash vulnerability map indicating probability of crash occurrence and the severity levels across different road segments over time. This map will assist authorities in identifying high-risk areas and implementing targeted safety policies.

2. *Assessment of surrogate safety measures for two-lane road with inclusive motorized two-wheeler lanes*

PI: Smt. Ardra S Krishna, Junior Scientist
Co-PI: Shri. Ebin Sam S, Scientist
Duration: 2024-26

Motorised Two-wheelers (MTWs) are a popular mode of transport in India, particularly in urban areas. However, their higher vulnerability to road crashes raises significant safety

concerns. Dedicated lanes for MTWs can improve their safety by separating them from other vehicles. Kerala implemented inclusive MTW lanes on the Muvattupuzha-Thodupuzha (SH8) stretch in the year 2020 and 2021. This study assesses changes in crash patterns, identify risk factors, analyse traffic conflicts and to suggest appropriate interventions in crash-prone locations, where inclusive MTW lanes are implemented.

A detailed road inventory survey was conducted along the study corridor to collect geometric details essential for analysis. The level of compliance shown by two-wheelers towards the MTW lanes was assessed. Traffic simulation of the study corridor was also carried out to assess the overall effectiveness of the MTW lane width under varying compliance scenarios. Crash prone locations namely, Kothamangalam road junction, Vazhakkulam and Edakkattukayam, were identified by performing risk map analysis using Kernel Density Estimation.

Kothamangalam road junction near Vazhakkulam area

Drone data collection was carried out at identified crash-prone locations to capture real-time traffic conflicts during both peak and off-peak hours. Traffic conflict analysis was performed with the help of data from sky platform, which was validated using video analysis of the drone data of study intersection, namely, Kothamangalam road junction. The trajectories of the vehicles passing through crash prone locations were extracted and surrogate safety parameters were obtained. Around 43% of the TTC-based conflicts involved cars, followed by 30% involving motorized two-wheelers and 11% involving buses. The most frequent conflicting vehicle pair was between cars and two-wheelers, with an average TTC value of 1.34 seconds, indicating criticality of the study location. Microsimulation models will be developed for the study location where inclusive MTW lanes are implemented, and appropriate interventions will be suggested for reducing the number of traffic conflicts.

3. *Safety evaluation of forced gap behaviour at unsignalized intersections*

PI: Dr. Praveen P S, Junior Scientist
Co-PI: Dr. Anila Cyril, Junior Scientist
Duration: 2024-26

Unsignalized intersections are those that are manually operated or do not have any signal control. Unsignalized junctions are prone to accidents, particularly in developing nations like India where irregular traffic patterns predominate and laws are not fully adhered to. Vehicles while aggressively cross the conflict area of an unsignalized intersection under the diverse traffic conditions present in India, major road vehicles are forced to slow down. In areas of the intersection where there is conflict, the rules of priority are not always completely adhered to. Forced gap behavior refers to aggressive behavior by a vehicle from a lower-priority stream (minor road) to make an entry into a higher-priority stream by forcibly slowing down traffic on the major road to create a gap. The capacity of movement is increased, but at the expense of safety in the intersection area, by the aggressive behavior of vehicles who force their way through conflict areas at intersections. Forced gap behavior affects intersection capacity and safety, necessitating possible corrections to intersection design and enforcement. This project proposes to evaluate the safety of forced gap maneuvers. In this study, safety under forced gap behavior at base and non-base unsignalized intersections will be evaluated by integrating Post Encroachment Time (PET) and speed of conflicting through vehicles.

4. *Optimizing urban transit networks using a multi-criteria approach*

PI: Dr. Anila Cyril, Junior Scientist
Co-PI: Dr. Praveen P S, Junior Scientist
Duration: 2024-26

The primary objective of this study is to optimize the circular urban transit network operated by KSRTC in Thiruvananthapuram using a multi-criteria approach that considers operator efficiency, passenger satisfaction, and broader community benefits. Specifically, the project aims to (1) evaluate the existing route structure based on passenger demand, (2) develop an optimized network design that integrates stakeholder needs, and (3) establish a frequency-setting strategy to enhance service reliability. The motivation behind this is rooted in addressing KSRTC's operational inefficiencies and financial deficits through improved planning and data-driven service optimization.

ETM transaction data, on-board surveys, and route maps were used to construct an OD matrix, assess spatial travel patterns, and identify underused stops. The transit network was modelled as a weighted, directed graph with adjacency matrices capturing both physical and demand-based linkages. Using graph-based models (L-, P-, and C-space), a multi-centrality framework was applied to evaluate five centrality measures- closeness, betweenness, degree, eigenvector, and PageRank—to identify influential transit stops. Rank consistency and distributional analysis of centrality values highlighted skewed nodal importance, with certain hubs emerging as disproportionately critical. Additionally, statistical and topological metrics (e.g., connectivity index, clustering coefficient, redundancy index, global efficiency) were computed to assess the robustness and navigability of the network.

Key findings reveal a sparsely connected but structurally hierarchical network. Closeness centrality is evenly distributed, indicating widespread accessibility, whereas betweenness and eigenvector centralities show power-law and log-normal distributions, identifying a small number of stops (eg. Thampanoor, East Fort, VJT Hall) as critical transfer hubs. The network has low clustering and efficiency, suggesting long travel paths and limited alternative routes. Only one articulation point was found, indicating a fragile connectivity structure. Overall, the findings point to a need for targeted frequency optimization, redundancy improvements, and possibly express services for high-demand corridors. Future work includes demand profiling at finer temporal scales, frequency setting based on link-level crowding patterns, and the finalization of route-wise timetables.

5. *Economic analysis of road accident cost in Kerala*

PI: Dr. Sunitha Vijayan, Junior Scientist
Duration: 2024-26

As per official sources, the total number of road accidents reported in India was 4,46,768, with Kerala accounting for 43,910 (10%) in 2022 (MORTH, 2022), signaling a significant public health challenge and safety concern within the state. The present study aims to estimate the economic cost of Road Traffic Crashes (RTCs) by combining the direct, indirect and intangible costs of RTCs by employing the Human Capital Approach and Willingness to Pay Approach and the intangible economic burden through Disability-Adjusted Life Years (DALY) using the WHO methodology. The study considers three districts of Kerala from the three regional groups: Northern Kerala (Kozhikode), Central Kerala (Ernakulam), and Southern Kerala (Thiruvananthapuram). The population of the

study involves the total number of persons involved in RTCs during the period between 2019 and 2022. A multistage proportional stratified random sampling method is deployed for selecting the sample from the population, and with a cross-sectional survey design, primary data is collected using the questionnaire survey administered to the RTC victims. This research provides a comprehensive economic analysis of road traffic accidents in Kerala, and the findings shall contribute towards evidence-based policy decisions, aiding in the prioritization of road safety interventions, optimizing resource allocation, and quantifying the health and economic impacts of road accidents.

A preliminary data analysis of the study has revealed a higher average vehicle detention period and vehicle damage cost, correlating directly with the severity of vehicle damage across all vehicle types. Furthermore, authorised service stations reported higher average vehicle damage costs compared to private service stations for equivalent levels of vehicle damage. The mean funeral cost was estimated at ₹ 15,500/-, reflecting the influence of socio-cultural, economic, and logistical factors on funeral expenses. The analysis of Motor Accidents Claims Tribunal (MACT) judgement orders from Thiruvananthapuram, Ernakulam, and Kozhikode districts yielded several major observations: a substantial proportion of victims belonged to the working age group (15-59 years); and a significant majority of victims were belonged to unorganized sector (categorized as self-employed, private service, and skilled workers) suggesting a potential disproportionate impact of RTCs on economically vulnerable sections of the population. Moreover, a consistent trend of escalating expenses was observed with higher injury severity across all major cost parameters, including medical costs, non-medical costs, compensation for pain and suffering and legal costs.

6. *Comprehensive developmental change analysis during past two decades in Ernakulam District - Remote sensing and GIS based approach*

PI: Shri. M S Saran, Scientist
Duration: 2024-27

Rapid and unregulated population growth, along with economic and industrial development, particularly in emerging nations in the late twentieth and early twenty-first centuries, has significantly accelerated the rate of Land use Land cover (LULC) change. As a result, quantitative assessment of changes in LULC is one of the most effective approaches to understand and manage land transformation, it is necessary to compare the accuracy of

various LULC mapping algorithms in order to determine the best classifier for future earth observation applications. Modern technologies like Remote sensing and GIS are useful to develop land use classifications and predictions. The present study attempts to quantify the rate of land use land cover changes in the selected local bodies within the Ernakulam district over a period of 2 decades using remote sensing and GIS. Furthermore, it also predicts future changes in LULC by applying machine learning model CA-ANN (Cellular Automata-Artificial Neural Network) through QGIS MOLUSCE Plugin. One of the objectives is to conduct a thorough examination of the urban expansion in the region and the subsequent analysis of land transformation trends along with diverse factors that are involved in future development.

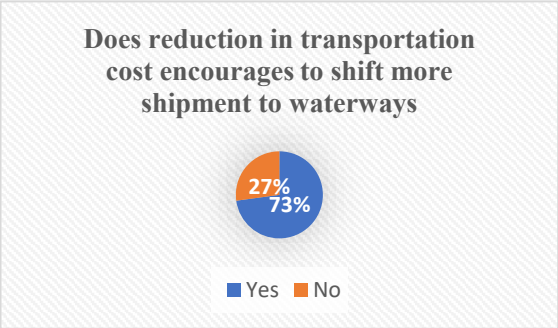
7. *Development of policy interventions for the efficient and sustainable freight distribution through Cochin Port*

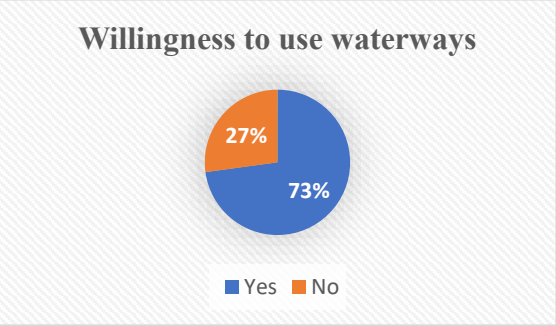
PI: Dr. Rameesha T V, Junior Scientist
Duration: 2024-26

The efficient movement of freight is a crucial aspect of modern supply chains. Choosing the appropriate transportation mode for freight plays a pivotal role in optimizing costs, reducing environmental impact, and ensuring timely deliveries. This proposal outlines a comprehensive approach to mode choice modeling for freight transport through Cochin port to its hinterland and other minor ports, aiming to provide insights into the decision-making processes of shippers and carriers and to investigate the necessity of shifting cargo from land to water.

Indian government has initiated various initiatives like Sagarmala programme, National waterways act, Inland vessel bill to develop the waterways sector and enable a modal shift. Government policies envision the annual cargo movement by almost 1.2 times for coastal shipping and almost three times on inland waterways for both cargo movement and passenger movement between 2019 and 2030. Currently, most domestic freight is transported via roads (70 percent) and meagre share by waterways (6 percent) (NITI Aayog, RMI India 2021). The government has designated specific stretches of waterways as dedicated freight corridors to prioritize cargo movement and reduce congestion and developed strategies to encourage industries to shift of their cargo from land to water. To study the choice behavior of shippers in transporting cargo from port to its hinterland is critical aspect in logistics management, mode choice modelling mainly involves analyzing

the decision-making process of shippers for transporting their goods from port to its hinterlands. This process is crucial for optimizing costs, resources, service levels, sustainability and policy decisions.





8. *Effect of Seawater on the rheological characteristics of bituminous binders*

PI: Shri. Wilson K C, Senior Scientist
Duration: 2024-26

Recent studies have revealed that asphalt pavement exposed to seawater suffers substantial deterioration. Extended exposure could aggravate the severity of damage due to chemical interactions between the pavement materials and seawater components. Various components of sea water include sodium, chlorides, sulphates, carbonates, calcium and potassium in higher concentration with fluorides, iron, bromide, iodide etc. in traces. Chemical analysis of sea water also shows that proportion of ionic components varies with location (Millero, 2013) and period of sample collection along with slight variation in pH. Literature review could identify that the rheological property of binder types subjected to seawater of different chemical composition and varying exposure time is less attempted. Also, insights on such situations could aid pavement engineers in selecting appropriate mixes and materials, as well as in implementing preventive measures during the construction and maintenance of roads in coastal environments. Hence study on rheological properties of binder is justified and therefore the objective is to investigate the influence of the chemical composition of seawater on the rheological properties of various types of bitumen. The study adopted different binders, conditioned in normal and sea water for predetermined durations after which the samples are subjected to AAHSTO T 315, AASHTO TP 101 and BTSV test procedures using dynamic shear rheometer (DSR). Interim findings show variation in the chemical composition of seawater depending on the period and location of collection. FTIR spectroscopy indicates that aging is more pronounced in

the presence of seawater. Complex shear modulus (G*) of binders are influenced by both the type and duration of moisture exposure. A 30-day conditioning period can result in a significant increase in the stiffness of binders. Variation in phase angle (δ) concerning the duration of conditioning is not statistically significant. Fatigue life of NW conditioned binder is higher than that of SW conditioned samples.

9. *Role of palm oil fuel ash on stabilizing kaolinite-rich lateritic soil*

PI: Dr. Salini U, Scientist
Duration: 2024-27

Improving weak soils is essential when building roads, especially in areas where the ground is not naturally strong. One promising solution is using Palm Oil Fuel Ash (POFA) a waste product from burning palm oil residues to generate power. POFA has shown great potential for stabilizing soft soils, making road foundations stronger and more reliable. When mixed into soil, POFA improves its strength and overall performance. It is not only environmentally friendly since it repurposes waste, but also cost-effective, which makes it ideal for road construction in areas with weak laterite soil. These types of soils often are unable to support roads, particularly under heavy traffic. To test how effective POFA is in stabilizing laterite, laboratory studies were conducted and it is found that POFA can significantly boost soil strength, sometimes increasing unconfined compressive strength (UCS) by up to 90%. It also allows for reduced use of cement and lime, supporting more sustainable building practices. Compared to other materials like fly ash, POFA offers better long-term strength when used with cement, making it a strong candidate for soil stabilization. However, it does not work well as a replacement for lime on its own. When used in combination with cement and lime, POFA enhances performance and can cut down the amount of traditional stabilizers needed by nearly three times. Overall, this study highlights POFA as a high-performance, eco-friendly material that can extend the life of roads built on weak soils, especially in places like Kerala, while also helping to reduce construction costs and environmental impact.

10. *Laboratory assessment of warm mix asphalt using natural and commercial additives*

PI: Dr. Goutham Sarang, Junior Scientist
Co-PI: Shri. Shijith P P, Junior Scientist
Duration: 2024-26

Warm Mix Asphalt (WMA) is considered more environmentally friendly than the conventional Hot Mix Asphalt (HMA) technology, due to lesser energy requirement and the lesser emission of gases during the preparation of WMA. Generally, foaming processes, organic additives and chemical additives are used in WMA, including synthetic zeolite, Sasobit, Cecabase, Evotherm, Rediset, Zycotherm, etc. However, natural zeolite, is not well studied as a WMA additive. Hence in this study, the laboratory performance of Stone Matrix Asphalt mixtures using WMA technology by incorporating two types of natural zeolites as the additive is assessed. Tests are performed to evaluate the volumetric and Marshall properties, fatigue behaviour and resistance to moisture action, skidding and rutting. The mixtures are prepared with conventionally oven dried aggregates as well as by using non-heated moist aggregate. The study provides an understanding about the suitability of using natural zeolite as a WMA additive. Along with trying different dosages/types of natural zeolite, an attempt will also be made to assess the warm SMA mixtures prepared using selected new or less reported warm mix additives.

11. *Performance assessment of selected cement-treated roads in Kerala*

PI: Shri. Shijith P P, Junior Scientist
Co-PIs: Dr. Goutham Sarang, Junior Scientist
Shri. Ashik K Azad, Junior Scientist
Duration: 2024-27

Roads having Cement-treated base (CTB) and subbase (CTSB) offer greater load-bearing capacity and durability than conventional flexible pavements. However, assessing their performance is essential, especially in high-rainfall regions like Kerala, India, where diverse climatic conditions can significantly impact the longevity and effectiveness of these roads. This study analysed the comprehensive performance assessment of selected CTB /CTSB layered roads in Kerala, focusing on their structural behaviour and long-term performance through a combination of field investigations, laboratory testing, and performance evaluation. It is planned to assess the structural evaluation using the Falling Weight Deflectometer (FWD) test. The functional evaluation of the study has been completed, and

the next step involves determining the elastic modulus values of each pavement layer using FWD testing. The outcomes of this performance evaluation are intended to assist decision-makers, engineers, and policymakers in developing more resilient and sustainable road infrastructure, tailored to the specific conditions and challenges of Kerala's Road network.

12. *Precast HFRHPC slab panels for pavements, bridge decks and slab culverts*

PI: Dr. Himasree P R, Junior Scientist
Duration: 2024-27

This research aimed to investigate the structural behaviour and performance of Hybrid Fiber Reinforced Concrete (HFRC) incorporating GGBS as a partial cement replacement and reinforced with different materials including HYSD steel, mild steel, and treated bamboo (B10 and B20), as well as GFRP and BFRP rebars. The study involved mechanical strength tests, bond strength evaluation through pull-out tests, and flexural tests on slab specimens under monotonic loading.

The incorporation of Ground Granulated Blast Furnace Slag (GGBS) in the M35 mix significantly enhanced long-term mechanical properties due to its pozzolanic activity. At 90 days, compressive strength increased by 7%, split tensile strength by 17%, and flexural strength by 10% over the plain M35 mix. All fiber-reinforced mixes (MF-1, MF-2, HF-1, HF-2) outperformed the GGBS-M35 mix in terms of mechanical properties. Among them: HF-2 demonstrated the most significant improvement, with 14% higher compressive, 86% higher split tensile, and 38% higher flexural strength. HF-1 also showed notable gains, particularly in tensile and flexural properties. Hybrid fiber mixes proved to be more effective than mono-fiber mixes due to better crack bridging and stress distribution.

Pull-out test results for GFRP, BFRP, HYSD, mild steel, and bamboo rebars embedded in different concrete mixes revealed that HF-2 mix consistently delivered the highest bond strength for all reinforcement types at all curing ages. In GFRP specimens, HF-II achieved 29.9% higher bond stress than MF-I at 90 days; in BFRP specimens, the improvement was 18.3%. Overall, GFRP exhibited better bond behaviour than BFRP, with bond strength 6–10% higher across all mixes. Among mono fiber mixes, MF-II outperformed MF-I by an average of 13% in bond strength. Across all reinforcement types, the bond strength hierarchy was: HYSD > B20 > Mild Steel > B10. The flexural testing of HFRC slabs

reinforced with different materials provided insights into load-carrying capacity, deflection, and cracking behavior.

The inclusion of hybrid fibers, particularly in the HF2 mix, greatly contributed to the formation of fine, distributed cracks and improved post-crack load resistance. HF2 slabs consistently exhibited narrower cracks and better energy absorption characteristics. Strain-hardening behavior was also observed in BFRP HF-II specimens, suggesting potential for ductile performance even in brittle systems. Treated bamboo strips, especially B20, demonstrated strong potential as a sustainable, low-cost alternative to conventional steel reinforcement when used with HFRC. Their improved bond behavior and competitive load performance make them suitable for light to moderate load-bearing structures, provided appropriate sizing and treatment are ensured.

13. *Performance assessment of HMA by MIST conditioning mechanism*

PI: Shri. Jegan Bharath Kumar A, Scientist
Duration:2024-27

Moisture damage in Hot Mix Asphalt (HMA) pavements poses a significant threat to the structural integrity and longevity of road infrastructure. This type of distress occurs when water infiltrates the asphalt layers, leading to reduced pavement performance and increased maintenance costs. The major objective of the study is to investigate the impact of admixtures on the moisture sensitivity of asphalt mixes with various compaction levels. Besides that, to assess the performance of mix by indirect tensile strength, stability tests and rutting test was performed. The HMA mix is subjected to different moisture such as dry and wet conditions in accordance with ASTM D 1075 and AASHTO T 283 and ASTM D 7870. Moreover, the analysis of air void structure is done using high-quality high-resolution images. A widely used digital scanning method for image acquisition is X-ray CT scanning. Images of the HMA mixes were obtained using X-Ray Computed Tomography Technique.

The volumetric properties of the bituminous mix were assessed under varying compaction levels in both dry and wet conditions. The results indicate that the bulk specific gravity is not significantly affected by the wet condition. Among the volumetric properties of the bituminous mix, air voids were identified as the most significant parameter with a 95% confidence level. When the compaction temperature decreases from 150°C to 130°C, the Marshall stability exhibits a reduction ranging from 3% to 25% in dry conditioned samples

and 6% to 35% in wet conditioned samples. Similarly, decreasing the compaction level from 75B to 35B results in a decrease in Marshall stability, with reductions of 26% to 42% in dry conditioned samples and 29% to 41% in wet conditioned samples. When the compaction temperature decreases from 150°C to 130°C, the ITS value exhibits a reduction ranging from 15%-45% in dry conditioned samples and 13%-41% in wet conditioned samples. Similarly, decreasing the compaction level from 75 to 35 blows results in a decrease in ITS value, with reductions of 26% to 42% in dry conditioned samples and 29% to 41% in wet conditioned samples. From the rut test, as the compaction temperature increases from 130°C to 150°C, the rut deformation of both dry and wet-conditioned samples of all phases decreases at a percentage of 2% to 40 %. Compared to samples compacted at 130°C, those at 150°C had less rut deformation. Similarly increase in compaction level from 35 to 75 blows the rut deformation of both dry and wet-conditioned samples of all phases decreases at a percentage of 17% to 45%.

14. *Performance evaluation of low volume flexible pavements constructed with non-conventional techniques*

PI: Shri. Ashik K Azad, Junior Scientist
Co-PIs: Shri. Subin B, Senior Scientist
Shri. Shijith P P, Junior Scientist
Duration: 2024-26

Low-volume rural roads constitute a significant portion of India's road network, accounting for 80% of the total road length. Typically, these roads are built as granular pavements, sometimes with a thin bituminous surfacing layer. Their design relies on an empirical approach, primarily using the subgrade California Bearing Ratio (CBR) as the key parameter. In Kerala, during recent years, low volume roads have been constructed using several non-conventional techniques with the objective of reducing the effective thickness of the layers coming over the subgrade as well as reducing the utilization of virgin aggregates. However, the performance of the low-volume roads constructed using these non-conventional techniques is hardly investigated. This research proposal primarily aims to evaluate the performance and deflection bowl parameters of the low-volume roads constructed with stabilized subgrades in different traffic and climatic conditions across Kerala, to determine their effectiveness in improving road durability, load-bearing capacity, and cost-effectiveness.

Twelve of road sections (9 stabilized subgrade roads and 3 conventional roads) across four districts viz., Alappuzha, Pathanamthitta, Idukki and Wayanad in Kerala have been identified. Functional evaluation for all the selected road stretches has been conducted using pavement condition surveys as per ASTM D6433-20 and the rating system outlined in IRC: 82-2015 to assess surface distresses such as cracking, rutting, and surface deterioration. The Pavement Condition Index (PCI) for the selected stretches was calculated in accordance with ASTM D6433-20, following the rating guidelines provided in IRC: 82-2015.

PCI evaluations (ASTM D6433-20 and IRC: 82-2015) indicated higher ratings for roads built using stabilized subgrade, reflecting improved durability and lower maintenance. The use of stabilized subgrade materials improved the pavement's resistance to deformation and environmental factors. Using non-conventional methods reduced reliance on virgin aggregates and promoted sustainability by incorporating local and recycled materials.

CAPACITY BUILDING AND TRAINING

Training Programmes Conducted

1. 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' vide G.O. (Rt) No.138/2015/Tran., dated 17th March 2015. 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.

During the year 2024 – 25, one programme was conducted at the KSCSTE-NATPAC office, *K Karunakaran Transpark*, Aakkulam, Thiruvananthapuram. Fifty drivers got benefitted from the course and are successfully endorsed to operate vehicles carrying dangerous and hazardous goods.

Date	Number of drivers Participated
29/05/2024 – 31/05/2024	50

2. Road Safety Training for Various Target Groups

Sl. No.	Details of Training	Date	Venue	No. of Participants
1	Half day training on 'Road Safety' for school children	29.05.2024	Institute of Engineers	100
2	Road Safety Awareness and Training Programme for Students from Good Shepherd School	29.10.2024	KSCSTE-NATPAC, Akkulam	40
3	Safe Road to School training program for SPC Cadets	05.12.2024	Govt. HS Ezhippuram, Kollam	60
4	One day training programme on road safety and youth leadership	23.12.2024	GHSS, Thattathumala, Kollam	60
5	Road Safety and Youth Leadership Training Programme (RSYLP)	23.12.2024	Vidya Academy of Science and Technology	60
6	Road Safety Class for NCC cadets	26.12.2024	Mar Baselios School Maruthamonpally, Kollam	600

Sl. No.	Details of Training	Date	Venue	No. of Participants
7	Road Safety Awareness Class, for NSS camp of Govt. VHSS Kallara	27.12.2024	Govt. LP School, Thengumcode	60
8	Road Safety and Youth Leadership Training Programme (RSYLP)	27.12.2024	Govt. HSS, Kallara	60
9	Little Road Heroes: One Day Training Program for Young Minds on Road Safety	31.12.2024	Govt. LPS, Chithara, Kollam	60
10	Online Training on 'Road Safety Awareness'	16.01.2025	Training given to the faculties of Institutes under Directorate of Technical Education	80
11	Road Safety Awareness Program for Student Police Cadets	17.01.2025	Govt. HSS, Marayamuttom	80
12	Road Safety Awareness Programme for school students	22.01.2025	GHSS Peringolam, Kozhikode	45
13	Road safety training	28.01.2025	Federal Institute of Science and technology	60
14	Online Workshop on 'Identification of Road Accident Blackspots as per MORTH Criteria'	29.01.2025	Training given to Police Officials, GoK	40
15	Training Program on Road Safety and Youth Leadership	29.01.2025	Government Engineering College Barton Hill, Thiruvananthapuram	40
16	Safe Road to School	30.01.2025	KPMHSS Cheriyavelinalloor	75
17	Road Safety and Youth Leadership Training Programme (RSYLP)	31.01.2025	SN College Kollam	150
18	Road Safety Quiz as part of Road Safety Month 2025 Observations	31.01.2025	Online	210
19	Road Safety Awareness Campaign	31.01.2025	Sarvodaya Vidyalaya ICSE School, Thiruvananthapuram	70
20	Road Safety Training Program for National Service Scheme Volunteers	31.01.2025	Mar Ivanios College, Thiruvananthapuram	70
21	Road Safety and Youth Leadership Training Programme (RSYLP)	14.02.2025	MG College, Thiruvananthapuram	60
22	Road Safety and Youth Leadership Training Programme (RSYLP)	28.02.2025	MMNSS College, Kottiyam	100

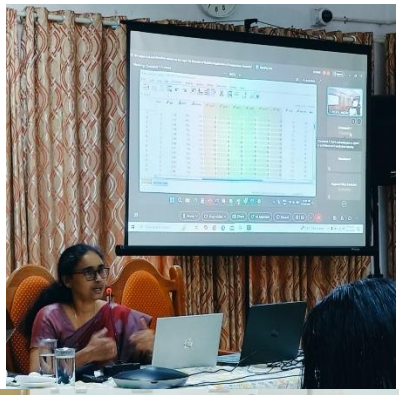
Sl. No.	Details of Training	Date	Venue	No. of Participants
23	Training on Road Safety	05.03.2025	For employees of M/s. TERUMO PENPOL Pvt. Ltd, Vazhuthacaud	30
24	Safe Road to School	14.03.2025	SNVGHS Paravur for SPC cadets	40

3. In-house Training/Invited Expert Talk

Sl. No.	Details of Training	Date
i.	Dr. Mini Shaji Thomas, Former Director, National Institute of Technology, Tiruchirappalli visited NATPAC and delivered lecture on 'Women Empowerment'	17.04.2024
ii.	Dr.Moses Santhakumar, Professor (HAG), NITT interacted with the Scientists	22.05.2024
iii.	Lab visit and demonstration for the students of Musaliar College of Engineering and Technology, 28 students participated	20.06.2024
iv.	Online presentation by ARRB Systems India who specialized in advanced road condition assessment technology, and offers innovative solutions like the intelligent Pavement Assessment Vehicle (iPAVe) and the Hawkeye platform for Scientists/Technical officers/Project Fellows	03.10.2024
v.	An online demo of Web of Science, one of the most authoritative and established multi-disciplinary research citation indexing database	18.10.2024
vi.	Expert session – 'An overview of statistical applications in transportation research' by Dr.Christabell P J, Associate Professor of Economics, University of Kerala	23.10.2024
vii.	Presentation on the ISRO-sponsored NNRMS Faculty Development Program titled "Remote Sensing & GIS Technology and Applications" by Dr.Sabitha N M, Senior Scientist	05.12.2024
viii.	Training programme on 'Remote Sensing and GIS Technology and Applications' for all technical staff and students (project/internship) affiliated with NATPAC. - Hands-on training on "Introduction to GIS" - Hands-on Training on SRTM Data Analysis - Introduction to Google Earth Engine	06.12.2024 09.12.2024 13.12.2024
ix.	Demo and discussions with Trois Infotech regarding Video Analytics in the field of Transportation	09.12.2024
x.	Demo and discussions with DromoLys Research and Development Pvt. ltd. regarding Video Analytics in the field of Transportation	16.12.2024
xi.	Knowledge Dissemination Sessions on 'Road Safety Executive Leadership Course' (RSELC), co-organized by the Johns Hopkins International Injury Research Unit (JH-IIRU) and the Global Road Safety Partnership (GRSP), with support from Bloomberg Philanthropies held at Kula Lumpur, Malaysia, by Dr.Samson Mathew, Director	26.12.2024 – 27.12.2024
xii.	Hands-on Training on "Basics of VISSIM software" at Seminar Hall, Sophisticated Testing and Instrumentation Centre (STIC), CUSAT campus to B.Tech/ M.Tech students from various Engineering	31.12.2024

Sl. No.	Details of Training	Date
	Colleges by Shri.B Anish Kini, Scientist, NATPAC. 35 students participated.	
xiii.	Knowledge Dissemination Sessions on the 5-days short course on 'Advanced Choice Modelling Methods with Applications in Transportation and Urban Systems' at the Indian Institute of Science, Bengaluru, by Dr. Vasudevan N., Junior Scientist, TESD	21.02.2025
xiv.	Presentation by XR Horizon, a startup company aiming to bring innovative solutions to various industries through virtual environments	25.02.2025
xv.	Demonstration of Roads India - Indian Highways/Road Data Analytics Software, by Mr. Viren Mehta, Director of Growth at Akara Research & Technologies	14.03.2025

Honoring Dr. Mini Shaji Thomas, Former Director, National Institute of Technology, Tiruchirappalli



'An overview of statistical applications in transportation research' by Dr. Christabell P J

4. TransTech Talk Series

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

Series No.	Resource Person	Topic	Date
15	Dr. Alfred Kalyanapu, Ph.D., Professor, Tennessee Technological University	Development of Low-cost, Real-time Water Level Monitoring System – A Case Study for Falling Water River Watershed	11.04.2024
16	Dr. Priyanka Alluri Ph.D., P.E., RSP2BI, Associate Professor, Department of Civil and Environmental Engineering, Florida International University	Improving Transportation Safety: Bridging the Gap Between Research and Practice through the 4 Es	15.05.2024
17	Dr. Ram Kumar Veeraragavan, Project Engineer, Federal Highway Administration - Mobile Asphalt Technology Center (MATC), USA	Performance Based Asphalt Mixtures: Balanced Mix Design Approach - Linking Theory to Practice	14.06.2024
18	Mr. Krishnan Srinivasan, Senior Transport Consultant, Multilateral Development Banks	Improving Road Safety Engineering and Management Capacity in India	12.07.2024
19	Shri. Mohammed Nizar Poovanmadathil, Customer Success Manager at Shipshave in Stavanger (Norway)	The path to greener seas: Latest trends in maritime decarbonization	09.08.2024
20	Dr. Muneeza Mehmood Alam, Senior Transport Economist (MENA), World Bank	The Role of Public Transport in Women's Economic Empowerment	06.09.2024
21	Dr. Manoj Mukundan, Senior Geotechnical Consultant at Somehsa Geosciences Pte Ltd, Singapore	Geotechnical Aspects of Planning and Design of Port and Harbor Structures	28.10.2024
22	Dr. Sushant Sharma, Asst. Program Manager and Research Scientist in the Multimodal Freight Program of the Texas A&M Transportation Institute (TTI), Texas A&M University, USA	Freight Technologies and Strategies for Resilient Future	15.11.2024
23	Dr. Phanikumar Mantha, Ph.D. Professor, Michigan State University	Coastal Water Quality and Public Health in the North American Great Lakes: The Science, Technology & Policy Behind Beach Management	23.12.2024
24	Dr. Jayalath Edirisinghe, University of Peradeniya, Sri Lanka	Towards a Sustainable Future: Investing in Public Transportation Systems	17.01.2025

Series No.	Resource Person	Topic	Date
25	Dr. Uma Maheswar Arepalli, Founding Director, Applied Research Professionals INC, Delaware, USA and Assistant Professor in the Department of Civil Engineering at SRM University, Andhra Pradesh	Advancements and Challenges in Flexible Pavement Design: Theory to Practice	07.03.2025
26	Shri. Salil Gokhale, P.E., Director of Consulting, Applied Research Associates, Inc. (ARA)	Pavement Engineering - State of Practice	28.03.2025

5. TransPedia Research Talk Series

TransPedia is a distinctive endeavour 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.

Series. No.	Resource Person	Topic	Date
9	Dr. Parthan K, Assistant Professor, Civil Engineering Department, B.M.S. College of Engineering, Bangalore	Investigating heterogeneity in alternatives, decision rules, contextual variables and choice set in commute mode choice	24.04.2024
10	Dr. Harsha Cheemakurthy, Naval Architect, R&D Department, StormGeo, Sweden	Understanding waterborne public transportation leading to holistic design of ferries	29.05.2024
11	Dr. Aathira K. Das Project Research Scientist, Department of Civil Engineering, Indian Institute of Technology, Bombay	Link Cost Function and Link Capacity for Mixed Traffic Networks	26.06.2024
12	Dr. Nabanita Roy, Postdoctoral Fellow, Department of Civil Engineering, Indian Institute of Technology Bombay	Role of Aggregate on the Skid Resistance of Bituminous Pavements	31.07.2024
13	Dr. Laxman Singh Bisht, Assistant Professor, Centre of Excellence in Safety Engineering & Analytics, IIT Kharagpur	Recommendations for LMICs Based on Road Safety Science Principles to Realize the Global Targets	27.08.2024

Series. No.	Resource Person	Topic	Date
14	Dr. Karthika P. S, Transportation Consultant, Bengaluru	Understanding Pedestrian Behaviour: Insights from Crowds and Laboratory Studies	25.09.2024
15	Dr. Ajeesh K, Research Associate, Department of Civil Engineering, Indian Institute of Technology Palakkad	Design of FRC Pavement with experimentally validated design fatigue models	30.10.2024
16	Dr. Vinayaraj V S, Research Scientist, Department of Civil Engineering, IIT Bombay	Development of Crash Conflicts and Assessment of Safety Performance Functions for Urban Roundabouts in Indian Context	28.11.2024
17	Dr. Sarvani Duvvuri, Transport Analyst, Maricopa Association of Government, Arizona	Freight Congestion and Framework: Understanding Truck Traffic through Socio-Spatial Structure	26.12.2024
18	Dr. Donia Savio, Indian Institute of Technology Madras	Influence of Braking Manoeuvres on the Reliability of Bituminous Pavements	29.01.2025
19	Dr. Ritvik Chauhan, Assistant Professor, Department of Civil Engineering, NIT - Tiruchirappalli	To go, or Not to Go: The Dilemma during the Yellow Phase at Signalised Intersection	28.02.2025
20	Dr. Nischal Gupta, Research Associate, Michigan State University, East Lansing, USA	Examining the impacts of various roadway cross-sectional design elements on travel speeds through speed transition zones	26.03.2025

Student Training and Academic Support

1. Students' Training/Project Work and Thesis

Details of guidance provided by the Scientific Divisions to students from various National Institutes and reputed Professional Colleges during this period is given below:

M.Tech/M.Plan/M.Sc.

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
1	National Institute of Technology Tiruchirapally	M. Tech	Dr. Shaheem S	2	Optimising parking infrastructure and pricing mechanism for and urban area: A case study of Attingal Municipality in Kerala

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
2	Mangalore University	M.Sc	Shri. V S Sanjay Kumar	1	Identification of Repeated Pedestrian Vulnerable Corridor
3	Rajiv Gandhi Institute of Technology (RIT) Kottayam	M. Tech		1	Enhancing Pedestrian Safety: Guidelines and Best Practices
4	College of Engineering Trivandrum (CET)	M. Tech		1	Pedestrian safety Assessment in Bus stops
5	Jyothy Engineering College, Thrissur	M.Tech		1	Pedestrian crash severity prediction modelling using machine learning techniques
6	Mangalore University	M.Sc. Geoinformatics		1	Identification of repeated pedestrian vulnerable corridors across Kerala
7	College of Engineering Trivandrum (CET)	M. Tech	Shri. Subin B	1	Behavioural Modelling of Two-Wheeler Accident Among Youngsters
8	Jyothi Engineering College, Thrissur	M.Tech	Smt.P N Salini	1	Speed Characteristics and Speed Prediction Modelling of Different Vehicle Types on Two Lane Highways
9	College of Engineering Trivandrum (CET)	M. Tech	Shri. Wilson K C	1	Comprehensive analysis and re-evaluation of exceptional gradient
10	College of Engineering Guindy, Anna University	M. Tech		1	Study on rutting and moisture susceptibility of different bituminous Mixes
11	Mangalore University	M. Sc (Geoinformatics)	Shri. Ebin Sam S	1	Crash Blackspot Identification and Impact Analysis of Motorised Two-Wheeler lanes on State Highway-8
12		M. Sc (Geoinformatics)		1	Identification of Crash Prone Areas using Spatio-Temporal Techniques
13	College of Engineering Trivandrum	M. Tech		1	Spatial Analysis of Traffic Crashes at Zonal Level - A Case Study
14	Rajiv Gandhi Institute of Technology, Kottayam	M. Tech		1	Optimizing emergency response time: A GIS based approach to ambulance routing
15	NIT Trichy	M. Tech		1	Delineating High-Risk Zones and Developing Crash Prediction Models for Ernakulam District
16	Mar Baselios College of Engineering and Technology (MBCET)	M. Tech	Shri. Jegan Bharath Kumar A	1	Assessing the Performance and Rheological Characteristics of Porous Asphalt Mix
17	Rajiv Gandhi Institute of Technology, Kottayam	M. Tech	Shri. Chandraprathap R	1	Evaluation of Geometric Consistency of Horizontal Curves

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
18	Bharathidasan University	M. Tech		1	Utilizing GIS for mapping suitable aggregates in Road Construction projects, Thiruvananthapuram, Kerala
19	College of Engineering Trivandrum	M.Tech	Dr. Salini U	1	Geocell-reinforced weak subgrade with various infill waste materials under moving load
20	College of Engineering Guindy, Anna University	M.Tech		1	Investigation of Field and Laboratory Permeability of Bituminous Concrete
21		M.E TE		1	Performance and comparison of field and laboratory permeabilities of different bituminous mixes
22	TKM College of Engineering	M.Tech	Shri. B Anish Kini	1	Feasibility study of new Water Transit in Ashtamudi lake
23	Mar Baselios College of Engineering and Technology (MBCET)	M. Tech	Dr. Praveen P S	1	Analysis of Forced Gap Characteristics at an Unsignalized T-Intersection
24	BMS College of Engineering, Bengaluru	M. Tech		1	Evaluation of safety scenarios of forced gap Behaviour using surrogate Safety indicators at Unsignalised intersections
25	National Institute of Technology Calicut	M. Tech	Dr. Vasudevan N	1	Crash Prediction using Machine Learning Approach
26		M. Tech		1	Development of Open Mobility Network for improving first/last mile connectivity for KMRL
27	College of Engineering Trivandrum (CET)	M. Tech	Dr. Himasree P R	1	Study on the behaviour of HFRHPC slab culverts reinforced with FRP rebars
28				1	Performance analysis of HFRHPC slab culverts reinforced with steel and bamboo
29	Rajiv Gandhi Institute of Technology, Kottayam	M. Tech	Dr. Anila Cyril	1	Developing Electric Vehicle Adoption Policy
30	SIT Tumkur	M. Tech		1	Evaluating User Perceptions of Importance, Performance, and Satisfaction in Public Transportation
31	National Institute of Technology, Karnataka Surathkal	M.Tech		1	Integrated Performance Evaluation of Linear Bus Routes using Bootstrapped DEA and Stochastic Frontier Analysis
32	Jyothi Engineering College, Thrissur	M. Tech	Shri. Ashik K Azad	1	Assessment of the Effectiveness of Flexible Pavements on Low-Traffic

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
					Roads Using Innovative Construction Approaches
33	College of Engineering Trivandrum (CET)	M. Tech	Dr.Rameesha T V	1	Feasibility study of Cargo shipping from port to its Hinterland
34	Cochin University of Science and Technology	M. Tech		1	Seismic performance of elevated water tank retrofitted with linked column frame considering soil structure interaction
35	RIT Kottayam	M. Tech		1	Feasibility study of modal shift from Land to water - case study of Cochin port
36	Cochin University of Science and Technology (CUSAT)	M. Tech		1	Structural behaviour of concrete filled steel tube columns under corrosion
37				1	Seismic performance of moment resisting steel frame with storage tank
38	VTMNSS College, Dhanuvachapuram	M.A (Economics)	Dr. Sunitha Vijayan	1	Socio-Economic And Health Outcome of Occupational Drivers: A Study on Public Transport Bus Drivers in Kerala State Road Transport Corporation
39				1	Estimation of Road Accident Cost with the Human Capital Approach
40				1	An Economic Analysis of Willingness to Pay for Avoiding Road Accident Fatalities
41	Mahatma Gandhi College, Thiruvananthapuram	M.A (Economics)		1	Economic Burden of Non-Communicable Diseases: Empirical Evidence from Diabetic Patients in Thiruvananthapuram District, Kerala
42	Mar Ivanios College, Thiruvananthapuram	M Sc (Statistics)	Smt. Ardra S Krishna	1	Effectiveness of an Infrastructural Facility in TW Accident Reduction
43	The Thangal Kunju Musaliar College of Engineering (TKM), Kollam	M.Tech		1	Inclusive Two-Wheeler Lanes in Mixed Traffic Systems: A VISSIM-Based Optimization Approach
44				1	Proactive safety Evaluation of unsignalized T-intersection using predictive safety indicators
45	Rajiv Gandhi Institute of Technology, Kottayam	M.Tech		1	Crash Data Analysis of SH8

B.Tech

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
1	College of Engineering and Management Punnapra	B. Tech	Dr. S. Shaheem	4	Parking policy development for Attingal town in Kerala
2	College of Engineering, Muttathara	B. Tech		4	Parking policy development for Kalamasserry town in Kerala
3	College of Engineering Muttathara, Thiruvananthapuram	B. Tech	Shri. V S Sanjay Kumar	4	Mode choice analysis of student trips in an educational institution
4	Jyothy Engineering College, Thrissur	B. Tech		4	Analysis and Modelling of Pedestrian Crashes in Ernakulam
5	Muslim Association College of Engineering and Polytechnic, Venjaramood	B. Tech		3	Pedestrian Safety Assessment and Risk Mitigation of High-Risk Corridors
6	Jyothi Engineering College, Cheruthuruthy	B. Tech	Shri. Subin B	4	Evaluation of Effectiveness of Posted Speed Sign Boards
7	College Of Engineering and Technology, Payyannur	B. Tech	Dr. Sabitha N M	4	Morphometric Analysis and Flood Risk Assessment of Rivers Draining to Kuttanad Region using Geospatial Techniques
8	Trinity College Of Engineering, Naruvamoodu	B. Tech		3	Assessment of Mode Choice Behaviour of Commuters and Terminal Redesign for Inland Water Transport in Kuttanad
9	Muslim Association College of Engineering, Venjaramood	B. Tech		4	Boat Carrying Capacity of Kuttanad Waterbodies
10	College of Engineering, Muttathara	B. Tech	Shri. Wilson K C	4	Study on effect of concrete filling in potholes
11	Government Engineering College, Barton Hill	B. Tech	Shri. Arun Chandran	4	Evaluation of Efficiency of Traffic Calming Measures
12	Younus College of Engineering and Technology	B. Tech		4	Feasibility Study for Water Metro in Kollam
13	Muslim Association College of Engineering	B.Tech		3	Post Implementation Study of Traffic Calming Measures at Kulakkada
14	Maulana Azad National Institute of Technology (MANIT) Bhopal	B.Tech	Shri. Ebin Sam S	1	Development of Cross-sectional Maps using Digital Technology
15	Vellore Institute of Technology	B.Tech		1	2D Drawing and 3D Modelling
16	St. Joseph's College of Engineering & Technology, Palai	B.Tech		3	Pattern Detection & Prevention of Road Crashes in Kerala using Geospatial and Temporal Analytics
17	Mar Baselios College of Engineering and Technology, Thiruvananthapuram	B.Tech	Shri.Jegan Bharath Kumar A	4	Permeability of Hot Mix Asphalt for Different Compaction and Moisture Conditions

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
18				4	Performance Prediction of HMA Using Machine Learning Techniques
19	Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore	B. Tech		3	Optimization of lime, cement and bagasse content for stabilization of subgrade soil
20	College of Engineering, Muttathara	B. Tech	Shri. Chandraprathap R	4	Study on the Strength Characteristics of Cold Mix Asphalt using Abaca Fiber Additive
21	Trinity College of Engineering Thiruvananthapuram	B.Tech		4	Strategic Enhancement of Junction Safety and Traffic Flow:Nellimoodu-Kanjiramkulam M.D. Road and NH66 Intersection
22	Cochin University of Science and Technology (CUSAT)	B. Tech	Shri. B Anish Kini	6	Development of Traffic Management schemes for Kakkanad area
23	Government College of Engineering, Kannur	B.Tech	Dr. Praveen P S	5	Analysis of forced gap Behaviour using surrogate Safety indicators at Unsignalised intersections
24	Mar Baselios College of Engineering and Technology	B.Tech		4	Work zone Safety analysis at highway construction site
25	Christ College of Engineering, Irinjalakuda, Thrissur	B.Tech	Dr. Vasudevan N	4	Analysing and modelling Park and Ride Facilities for Kochi Metro Rail
26	School of Engineering, Cochin University of Science and Technology, Kalamassery	B.Tech		6	Pedestrian, Traffic and Parking Management around JLN Stadium
27	Muthoot Institute of Technology and Science, Varikoli P O, Ernakulam	B.Tech		4	Traffic Management and Pavement analysis for Kaloor-Kadavanthra Road
28	Musaliar College of Engineering and Technology, Pathanamthitta	B. Tech	Dr. Himasree P R	4	Experimental Investigation on Concrete using Bamboo Fibre and Coir Fibre
29	School of Engineering, CUSAT	B. Tech	Dr. Anila Cyril	6	Design and Simulation of the Flyover Junction at Seaport-Airport Road
30	Federal Institute of Science and Technology (FISAT), Ernakulam	B. Tech		4	Public Transport Route Planning and Conceptual Layout of Mobility Hub
31	College of Engineering and Technology- Payyanur	B.Tech	Shri. Ashik K Azad	5	Assessment of the performance of low volume roads built with innovative technologies
32	St. Thomas Institute for Science & Technology, Thiruvananthapuram	B.Tech		4	Evaluation of Low volume flexible pavement constructed using new technological interventions
33	LBS College of Engineering Kasaragod	B. Tech		4	Evaluating the field performance of cement-

Sl No.	Name of the Institution	Course	Guide	No. of Students	Topic
			Shri. Shijith P P		treated subbase and conventional pavements in Kerala
34		B. Tech		4	Effectiveness of mini roundabout in Koyilandy, Kozhikode
35		B. Tech		5	Assessment of the impact of National Highway 66 widening Project on Thalassery town
36	LBS College of Engineering, Kasargod	B. Tech	Dr. Goutham Sarang	4	Impact of Electric Auto Rickshaws in Kozhikode City
37	Govt. Engineering College Kozhikode	B. Tech		4	Evaluation of Warm Stone Matrix Asphalt Mixtures with Natural Zeolite Additive
38	College of Engineering and Technology Payyannur	B. Tech		4	Evaluation of New Thalassery – Mahe Bypass on the Travel and Economic Characteristics of Mahe town
39	KMEA Engineering College	B.Tech	Dr. Rameesha T V	4	Feasibility of Constructed Wetland Technology in Kochi city
40	College of Engineering Tirvandrum	B.Tech		4	Feasibility of freight transport through Cochin port and Vizhinjan port to its hinterlands
41	Cochin University of Science and Technology	B.Tech		6 6	Design and Planning of Amphibious House Seismic Performance of an elevated water tank strengthened by linked Column frame considering
42	National Institute of Technology, Calicut	B.Tech	Smt. Ardra S Krishna	1	Review of MTW lane studies
43	School of Engineering, CUSAT	B. Tech		6	Operational Assessment of a road with dedicated two-wheeler lanes-A case study on Perumbavoor - Muvattupuzha stretch
44	KMEA Engineering College, Edathala, Cochin	B. Tech		4	Prioritizing Pedestrian Safety: Identifying and Addressing Crash-Prone Locations Along a Selected Corridor on State Highway 8
45	Muslim Association College of Engineering, Venjaramoodu, Trivandrum	B. Tech	Dr. Sanjai R J	4	Macro Level Operational Analysis Study on KSWTD

M.Tech/M.Sc (Internship)

Sl. No.	Name of the Institution	No. of Students
1	National Institute of Technology Calicut	2
2	National Institute of Technology Tiruchirapally	4
3	Indian Institute of Technology Kharagpur	5
4	The School of Planning and Architecture, Vijayawada	3
5	College of Engineering, Trivandrum	5
6	Thangal Kunju Musaliar College of Engineering, Kollam	2
7	Rajiv Gandhi Institute of Technology (RIT) Kottayam	9
8	Mar Ivanios College, Thiruvananthapuram	7
9	HHMSPB NSS College for Women, Neeramankara	4
10	VTMNSS College, Dhanuvachapuram	5
11	College of Engineering, Guindy, Anna University	4
12	Musliar College of Engineering and Technology, Pathanamthitta	5
13	Government Engineering College, Thrissur	3
14	Government College of Technology, Coimbatore	2
15	Anna University	2
16	MA College of Engineering, Kothamangalam	1
17	Saintgits College of Engineering, Kottayam	6
18	JSS Academy of Higher Education, Mysuru	4
19	University of Madras, Guindy Campus	1
20	BMS College of Engineering, Bengaluru	1
21	Siddaganga Institute of Technology, Tumakuru, Karnataka	1

B.Tech (Internship)

Sl. No.	Name of the Institution	No. of Students
1	Maulana Azad National Institute of Technology Bhopal	2
2	Vellore Institute of Technology, Chennai	5
3	National Institute of Technology Calicut	23
4	The School of Planning and Architecture Delhi	1
5	The School of Planning and Architecture Bhopal	1
6	National Institute of Technology, Tiruchirappalli	2
7	National Institute of Technology Bhopal	2
8	College of Engineering, Trivandrum	1
9	Musaliar College of Engineering and Technology	2
10	Gati Shakthi Vishwa Vidyalaya, Vadodara, Gujarat, India	1
11	Rajiv Gandhi Institute of Technology (RIT) Kottayam	1
12	Amrita Vishwa Vidhyapeetham, Kochi Campus	1
13	Vidya Academy of Science and Technology, Technical Campus Kilimanoor	4

WORKSHOPS, CONFERENCES AND CONSULTATIONS

1. 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 (MoEFCC), 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.

Inaugural Session of One-Day Workshop on "Energy and Environmental Challenges for Sustainable Transportation"

2. Stakeholder Meeting

KSCSTE-NATPAC organised a Stakeholder Meeting at the Government Guest House, Kozhikode on 27th November 2024 to showcase the activities of the Centre and to extend its support to solve various transportation issues/challenges faced by the stakeholders in Kerala.

Inaugural Session of Stakeholder Meeting at the Government Guest House, Kozhikode

Mathrubhumi
മാതൃഭൂമി

ഗതാഗതപ്രശ്നങ്ങൾക്ക് പരിഹാരംതേടി വകുപ്പുകളുടെ യോഗം

നാറ്റ്പാക് സംഘടിപ്പിച്ച വിവിധ വകുപ്പുകളുടെ യോഗം റിട്ട. ചീഫ് എൻജിനിയർ ഇ.കെ. ഐഹദ്ദു ഉദ്ഘാടനംചെയ്യുന്നു

കോഴിക്കോട്▸ ഗതാഗതരംഗത്തെ പ്രശ്നങ്ങളും ചർച്ചചെയ്യാൻ നാറ്റ്പാക് സംഘടിപ്പിച്ച കോഴിക്കോട് മേഖലാ സ്റ്റെയ്ക്ഹോൾഡർ യോഗം. റോഡുകളുടെ ഗുണനിലവാരം, പാർക്കിങ് പ്രശ്നം, റോഡ് നിർമാണത്തിലെ പുതിയ സാങ്കേതികവിദ്യകളും എന്നിവ ചർച്ചചെയ്തു. പൊതുമരാമത്ത് വകുപ്പ്, തദ്ദേശസ്വയംഭരണവകുപ്പ്, ടൗൺ പ്ലാനിങ്, മോട്ടോർവാഹനവകുപ്പ്, കേരള സംസ്ഥാന ഗ്രാമീണ റോഡ് വികസന ഏജൻസി, പോലീസ്, കോഴിക്കോട് എയർപോർട്ട് തുടങ്ങിയ വിഭാഗങ്ങളിലെ ഉന്നത ഉദ്യോഗസ്ഥരും എൻജിനിയറിങ് കോളേജ് അധ്യാപകരും ഉൾപ്പെടെയുള്ള വരാണ് യോഗത്തിൽ പങ്കെടുത്തത്. റിട്ട. ചീഫ് എൻജിനിയർ ഇ.കെ. ഐഹദ്ദു ഉദ്ഘാടനംചെയ്തു. നാറ്റ്പാക് ഡയറക്ടർ ഡോ. സാംസൺ മാത്യു അധ്യക്ഷനായി. സി.ഡബ്ല്യു.ആർ.ഡി.എം. എക്സിക്യൂട്ടീവ് ഡയറക്ടർ ഡോ. മനോജ് പി. സാമുവൽ, കേരള സ്റ്റേറ്റ് ഓഫ് മാത്തമാറ്റിക്സ് ഡയറക്ടർ ഡോ. പി.കെ. രത്നകുമാർ, നാറ്റ്പാക് കോഴിക്കോട് പ്രാദേശികകേന്ദ്രത്തിന്റെ ചുമതലയുള്ള കെ.സി. വിൽസൺ, നാറ്റ്പാക് ഗതാഗത ആസൂത്രണവിഭാഗം തലവൻ ഡോ. എസ്. ഷഹീം എന്നിവർ സംസാരിച്ചു.

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3. Stakeholder Meeting

KSCSTE-NATPAC organised a Stakeholder Meeting at Govt. Guest House, Ernakulam on 12th February 2025 to showcase the activities of the Centre and to extend its support to solve various transportation issues/challenges faced by the stakeholders in Kerala. The programme was inaugurated by Shri. N.S.K Umesh IAS, District Collector, Ernakulam.

Inaugural Session of Stakeholder Meeting at the Government Guest House, Ernakulam

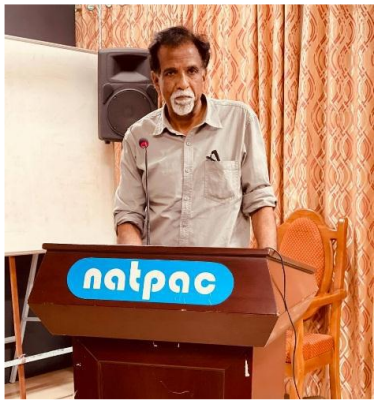
4. Seminar on Roads to a Sustainable Future: Biodiversity Conservation through Green Transportation

KSCSTE-National Transportation Planning and Research Centre (NATPAC) organised one-day Seminar on 'Roads to a Sustainable Future: Biodiversity Conservation through Green Transportation' sponsored by Kerala State Biodiversity Board (KSSB) on 6th February 2025 at NATPAC Akkulam Campus. Shri. Suresh Kumar K, Registrar, NATPAC delivered the welcome address and the program overview was given by Shri. Sanjay Kumar V S, Principal Scientist & Head, Traffic Engineering and Safety Division, NATPAC. The programme was inaugurated by Dr. N. Anil Kumar, Chairman, Kerala State Biodiversity Board. He shared his insights on strengthening conservation efforts in Kerala through sustainable transportation solutions and emphasized KSCSTE-NATPAC's vital role as a leading planning and research institution in shaping a more sustainable future. His presentation, 'How to Complement Biodiversity Conservation Efforts in Kerala through Green Transportation?' shed light on the alarming rate of biodiversity loss, as the planet faces its sixth mass extinction due to deforestation, habitat

fragmentation, and climate change. There was a total of 52 participants in the seminar that included students from various reputed educational institutes.

Technical Sessions

Sl.No.	Name	Designation	Topic
1	Dr. Shaheem S	Principal Scientist, KSCSTE-NATPAC	Sustainable Transportation
2	Shri. K Vijayananthan IFS	CCF, Eastern Circle and Custodian of Vested Forests, Palakkad	Human-Animal Conflict
3	Er. Kalaiarasan P	Environmental Engineer, Directorate of Environment & Climate Change, Government of Kerala	Environmental Impact Assessment



Inaugural address by Dr. N. Anil Kumar

Technical Sessions

Certificate distribution to the participants

AWARENESS CAMPAIGNS AND OBSERVANCES

1. GIS Day 2024

As part of observance of GIS Day 2024, NATPAC organized an expert talk and webinar on 20th November 2024 at NATPAC Campus, Aakkulam. The expert talk was delivered by Dr. Radhakrishnan T, Project Coordinator (Geospatial Data Analytics), Digital University Kerala on the topic "Geospatial Analytics and Geospatial Predictions". This talk explored the foundations and advancements of Geo-AI, a multidisciplinary field that

combines GIS, remote sensing, machine learning and deep learning to analyze and predict spatial patterns. The session introduced new possibilities in spatial decision-making, showcasing how Geo-AI can shape a resilient and sustainable future by providing actionable insights into our changing world.

A webinar was also conducted on the topic "Transportation with Spatial Analytics – Driving Smarter Mobility", by Ms. Esther Jesintha Nallathambi, Engineer, ESRI India. This session explored how spatial analytics enhances planning, from road network development to urban mobility management, with real-world examples of GIS applications in action. The webinar demonstrated how ESRI'S collaborative platform facilitate seamless data sharing, fostering better-connected transportation systems.

GIS Day 2024 at NATPAC Campus, Aakkulam

One-day workshop on 'Introduction to GIS' was also conducted on 6th December 2024 in association with School of Engineering, CUSAT, Ernakulam, in which 36 B.Tech students participated.

Workshop on 'Introduction to GIS' at School of Engineering, CUSAT, Ernakulam

2. Malayalam Day and Official Language Week - 2024

KSCSTE-NATPAC celebrated Malayalam Day and Official language week from 01.11.2024 – 07.11.2024. Bharana Bhasha Oath taking ceremony was conducted in NATPAC at 3 pm on 1st November 2024. Prof. (Dr.) Samson Mathew, Director, NATPAC delivered the oath to the staff of NATPAC.

Malayalam day celebrations were officially inaugurated by Shri.Sumesh Krishnan, Malayalam literary icon on 1st November 2024. As part of official language week celebrations talks were delivered by Shri. Kariavattom Sreekantan Nair, Poet on 4th November 2024, Prof. C R Prasad, Department of Kerala Studies, University of Kerala on 5th November 2024, Shri. S R Lal, Assistant Editor, Grandhalokam Magazine on 6th November 2024 and Shri. Vattakkarikkakom Krishnan Nair, Editor, Vijnanam

Encyclopaedia on 7th November 2024. Five officially using English words and its corresponding Malayalam words were displayed in KSCSTE-NATPAC's Office.

Bharana Bhasha Oath taking ceremony

Inaugural talk by Shri. Sumesh Krishnan

Talk by Shri. Kariavattom Sreekantan Nair, Poet

Talk by Prof.C R Prsad, Department of Kerala Studies, University of Kerala

Talk by Shri. S R Lal, Assistant Editor, Grandhalokam Magazine

Talk by Shri. Vattakkarikkakom Krishnan Nair, Editor, Vijnanam Encyclopaedia

3. Women's Day 2025

KSCSTE-NATPAC organised a Symposium on the topic 'Role of Education in Empowering Women' on 11th March 2025, at NATPAC Akkulam Campus in connection with the observance of Women's Day 2025. Dr. Cicy Roy Mathew, Chairperson of the

School of Good Shepherd, Former Principal of Kendriya Vidyalaya, and recipient of the National Award for Teachers, was the Chief Guest for the programme.

OUTREACH AND EXHIBITIONS

1. Exhibitions

1. Road Safety exhibition in connection with Malabar Garden Festival 2024, organised by Malabar Botanical Garden and Institute for Plant Sciences, Kozhikode, 20.12.2024 -29.12.2024.
2. Road Safety exhibition in connection with the 37th Kerala Science Congress, organized by KSCSTE, with coordination by KSCSTE-Kerala Forest Research Institute (KFRI) and Kerala Agricultural University, Thrissur at Kerala Agricultural University, Thrissur, 07.02.2025 – 10.02.2025.

2. Participation in Workshops, Seminars/Conferences and other Training Programmes

Name of Programme	Organised by	Date (s)	Venue	Participants
Seminars/Conferences				
Advancing traffic safety using ADAS and DMS systems	IIT Hyderabad	19.04.2024	IIT Hyderabad	Shri. Subin B

Name of Programme	Organised by	Date (s)	Venue	Participants
International Conference on Sustainable Infrastructure: Innovation, Opportunities and Challenges-2024	NITK Surathkal	30.04.2024 – 01.05.2024	NITK Surathkal	Dr. Shaheem S Dr. Anila Cyril
CONFEST 2024 Construction Conclave	MatterLab	11.05.2024	Hotel Hycinth, Thiruvananthapuram	Dr. Himasree P R
Implementation of Tsunami ready program (TRP) in Kerala	KSDMA	24.05.2024	Apollo Dimoro Hotel, Thiruvananthapuram	Shri. Ebin Sam S Dr. Salini U Dr. Himasree P R
International Conference on Structural Engineering and Construction Management (SECON '24)	FISAT	05.06.2024-07.06.2024	FISAT	Dr. Shaheem S Dr. Anila Cyril
Infrastructure development in North East focus on technology and sustainability	Indian Infrastructure Magazine	12.06.2024	Assam	Dr. Shaheem S Shri. Subin B
228th Mid-Term Council Meeting of the Indian Roads Congress	Indian Roads Congress	14.06.2024 – 15.06.2024	Siliguri (West Bengal)	Dr. Samson Mathew
Greening Public Transport	KMRL in collaboration with SCMS Kalamassery	20.06.2024	SCMS Kalamassery	Dr. Anila Cyril
DoECC-Stakeholder consultation meeting on Kerala Carbon Neutral Pathway 2050	Directorate of Environment and Climate Change	27.06.2024	Thiruvananthapuram	Dr. Samson Mathew Shri. Jegan Bharath Kumar A Dr. Salini U
10th International Conference on Transportation System Engineering and Management CTSEM 2024	VNIT Nagpur	19.07.2024 – 20.07.2024	Nagpur	Dr. Rameesha T V
Training Service Provider's Summit	Kerala Academy for Skills Excellence (KASE)	27.07.2024	CUSAT Campus Seminar Complex, Kochi	Dr. Vasudevan N Smt. Ardra S Krishna
Stakeholder's Meeting on Ease of Moving in Kerala - A Sustainable Mobility Dialogue	ANERT and OMI Foundation	30.07.2024	ANERT Office, Thiruvanathapuram	Dr. Samson Mathew
Commemorative programme in honour of the esteemed scientist and cardiologist, Dr. M. S. Valiathan	KSCSTE	13.08.2024	Padmam Hall, Institute of Management in Government (1MG), Thiruvananthapuram	NATPAC Officials

Name of Programme	Organised by	Date (s)	Venue	Participants
International Conference on Law and Technology: Sustainable Transport, Tourism and Technical Innovations	Commonwealth Legal Education Association, CLEA	18.08.2024	Kumarakom, Kerala	Dr. Samson Mathew
Discussion meeting with various stake holders	KSCSTE-CWRDM	10.10.2024	Sahakaran Bhavan, DPI, Trivandrum	Dr. Salini U Shri. Ashik K Azad Shri. Tinku Casper D'Silva
83rd Annual Session, IRC	Indian Roads Congress	08.11.2024 – 11.11.2024	Pandit Deendayal Upadhyaya Auditorium & Science College Ground, Raipur, Chhattisgarh	Shri. Wilson K C Shri. Arun Chandran
31st Swadeshi Science Congress and National Conference on Towards Net Zero Emissions: Approaches and Strategies	Swadeshi Science Movement	07.11.2024 – 09.11.2024	ICAR-CIFT	Shri. Tinku Casper D'Silva
Thermal Analysis and Rheometry - Indispensable tools for characterization of materials	Netzsch Technologies India Private Limited	14.11.2024	Hyatt Regency, Trivandrum	Shri. Wilson K C Shri. Jegan Bharat Kumar Shri. Chandra prathap R Dr. Salini U
International Conference on Innovations in Infrastructure (ICIIF-24)	Institute of Infrastructure, Technology, Research and Management (IITRAM), Ahmedabad	15.11.2024 – 17.11.2024	Hybrid mode	Dr. Vasudevan N
Huddle Global 2024	Kerala Startup Mission	28.11.2024 – 30.11.2024	The Leela Raviz Kovalam, Trivandrum	Shri. Sanjay Kumar V S Shri. M S Saran Shri. Wilson K C Shri. Ebin Sam Dr. Praveen P S
29th Annual General Body Meeting (AGM) and Annual Convention–2024 of Indian Society of Geomatics (ISG)	ISRS-ISG	11.12.2024	Online	Shri. M S Saran
Transportation Research Board 104th Annual Meeting (TRBAM)	Transportation Research Board, USA	05.01.2025-09.01.2025	Washington DC, USA	Shri. B Anish Kini
P.T Bhaskara Panicker Memorial Lecture in connection with 37th Kerala Science Congress	Kerala State Council for Science - Technology	30.01.2025	Government College for Women,	Scientists of NATPAC

Name of Programme	Organised by	Date (s)	Venue	Participants
	and Environment (KSCSTE)		Thiruvananthapuram	
37th Kerala Science Congress	Kerala State Council for Science - Technology and Environment (KSCSTE)	07.02.2025 – 10.02.2025	Kerala Agricultural University, Thrissur	Scientists of NATPAC, Postgraduate and Undergraduate students doing internship
Scientist Conclave	Kerala State Council for Science - Technology and Environment (KSCSTE)	15.02.2025	Centre for Water Resources Development and Management (CWRDM)	Scientists of NATPAC
ICRR 2025	NIT Calicut, TU Delft	27.02.2025 – 01.03.2025	NIT Calicut	Dr. Sabitha N M
Third Annual World Bank Conference on Transport Economics	Transport Global Department of the World Bank	14.03.2025	Online	Dr. Sunitha Vijayan
2nd Vision Zero Summit, International Conference on Resilient Urbanism and Safe Mobility	MANIT, NIDM & ITPI	26.03.2025 – 28.03.2025	EPCO, Madhya Pradesh	Shri. Ebin Sam S
Training Programmes				
15-day Certification Programme on 'Road Safety Audit and other Road Safety related aspects'	CSIR-Central Road Research Institute, New Delhi	15.04.2024 – 30.04.2024	CSIR-Central Road Research Institute, New Delhi	Shri. V S Sanjay Kumar Shri. Arun Chandran
ISRO-Sponsored NNRMS Faculty Development Program on "Remote Sensing & GIS Technology and Applications"	ISRO	13.05.2024-05.07.2024	IIRS, Dehradun	Dr. Sabitha N M
AFSC 2024 -Value addition in aggregates sourced from industry rejects for sustainable construction	VNIT Nagpur	24.06.2024 – 28.06.2024	VNIT Nagpur	Dr. Himasree P R
5 – day short term course - Navigating the Future: AI, Network Programming, and Autonomous Vehicles	National Institute of Technology Rourkela	22.07.2024 – 26.07.2024	National Institute of Technology Rourkela	Dr. Praveen P S
2 Days Online- live Training Course -iRAP - Crash Risk Mapping	iRAP	22.07.2024 – 29.07.2024	Online	Shri.V S Sanjay Kumar Smt. Ardra S Krishna

Name of Programme	Organised by	Date (s)	Venue	Participants
5 – day executive training program - City Logistics Plan Preparation	School of Planning and Architecture, Bhopal	05.08.2024 – 09.08.2024	School of Planning and Architecture, Bhopal	Shri. Ashik K Azad
Hands on training on preparation of biogas slurry samples for microbial community analysis	Department of Biotechnology, Institute of Biology, University of Szeged, Hungary	02.09.2024 – 06.09.2024	University of Szeged, Hungary	Shri. Tinku Casper D'Silva
Training on CUBE software	KSCSTE-NATPAC	09.09.2024 – 11.09.2024	KSCSTE-NATPAC, Regional Office Ernakulam	8 officials of NATPAC
5-day short-term program on"Research Trends and Future Scope in Civil Engineering - 2024" (RTFSCE-24)	National Institute of Technology Jamshedpur	09.09.2024 – 13.09.2024	Online	Dr. Salini U
Geometric design of highways (6 week) certified course	IITM-NPTEL	23.10.2024		Shri. Subin B
Phase 2 of the Road Safety Executive Leadership Course (RSELC)	Global Road Safety Partnership	October & November 2024	Kuala Lumpur, Malaysia	Dr. Samson Mathew
Autocad civil 3D complete course roads and highway design	UDEMY	October-December 2024		Shri. Subin B
Questionnaire design and data analysis with SPSS and AMOSS	UDEMY	December 2024		Shri. Subin B
IBM SPSS AMOSS foundation course- sem scratch to advanced	UDEMY	December 2024		Shri. Subin B
Women in Space Allied Science Leadership Programme	DST in association with British Council under the UKEIRI programme	28.01.2025-31.01.2025	IACS, Kolkata	Dr. Sabitha N M
E-Learning Course "Introduction to Behavioral Science in Public Policy"	World Bank Institute for Economic Development	17.02.2025-27.03.2025	Online	Dr. Sunitha Vijayan
Sustainable Carbon-Free Technologies for Hydrogen Generation and Storage	NIT Trichy	24.02.2025 – 01.03.2025	NIT Trichy (Online)	Shri. Tinku Casper D'Silva
Short term course on Data-Driven Statistics in Transportation	IIT Tirupati and IIT Kanpur	03.03.2025 – 07.03.2025	Online	Dr. Shaheem S Shri. Wilson K C Smt. P N Salini Shri. Ebin Sam Dr. Salini U Dr. Praveen P S Dr. Vasudevan N Dr.Rameesha T V

Name of Programme	Organised by	Date (s)	Venue	Participants
				Dr. Sunitha Vijayan
Certificate course on the Preparation of DPRs	Indian Academy of Highway Engineers, MoRTH, New Delhi	17.03.2025 – 22.03.2025	IAHE, New Delhi	Dr. Salini U Shri. R Chandra Prathap
Basics of OpenFOAM (Open-source Field Operation And Manipulation)	FOSSEE, IIT Bombay	18.03.2005	Online	Dr.Rameesha T V
AI & it's applications in Civil Engineering -An Overview -PART 2	Resource Centre for Asphalt and Soil Training Academy (RASTA)	18.03.2025 – 21.03.2025	Online	Smt. P N Salini
Workshops				
Advancing traffic safety using ADAS and DMS systems	IIT Hyderabad	19.04.2024	IIT Hyderabad	Shri. Subin B Shri. B Anish Kini
One Week Offline Workshop on Time Series & Panel Data Econometrics (Six Days)	Kerala Economic Association (KEA) in association with Gulati Institute of Finance and Taxation (GIFT)	29.04.2024 – 04.05.2024	Gulati Institute of Finance and Taxation (GIFT)	Dr. Sunitha Vijayan
Cartography	ESRI	Completed on May 21, 2024	Online MOOC Course (6 weeks)	Dr. Anila Cyril
Balanced mix design: enhancing performance and sustainability in Indian bituminous mixtures	KHRI, PWD, GoK	10.06.2024 – 11.06.2024	KHRI	Dr. Salini U Shri. Chandraprathap R
National Level Workshop on "Advanced Computer Vision for Image & Video Analysis and Applications"	IIIT Kottayam	17.06.2024 – 21.06.2021	IIIT Kottayam	Dr. Salini U
Machine Learning for Civil Engineers: Theme - Pattern Recognition Through Clustering	RASTA- Center for Road Technology, Bengaluru	08.08.2024 – 09.08.2024	Hybrid mode	Smt. P N Salini
PM Gatishakthi district level workshop	Kerala State Industrial Development Corporation	13.08.2024	Hotel Hyatt Regency, Thiruvananthapuram	Shri. V S Sanjay Kumar, Dr. Shaheem S
ULCCS-MatterLab Tech Talk series -II- Sustainable Architectural Practices	Matter Material Testing & Research Laboratory (P)	06.09.2024	Conference Hall, UL Cyberpark, Kozhikode	Shri. Shijith P P

Name of Programme	Organised by	Date (s)	Venue	Participants
	Ltd. & Uralungal Labour Contract Co-operative Society Ltd.			
Research Renaissance: Unlocking Funding Opportunities	NCESS	10.09.2024	NCESS	Smt. P N Salini Shri. M S Saran Shri. Jegan Bharath Kumar A Dr. Himasree P R Dr. Sunitha Vijayan
National Workshop on Market Intelligence and Digital Innovations	Kerala State Agricultural Prices Board, Government of Kerala	03.10.2024 – 04.10.2024	Mascot Hotel, Thiruvananthapuram	Dr. Sunitha Vijayan
One day conclave - Role of Science and Technology in Landslide Management	KSCSTE	08.10.2024	IMG Thiruvananthapuram	Shri. V S Sanjay Kumar Smt. P N Salini Dr. Sabitha N M Dr. Salini U
CWRDM-Stakeholders consultation workshop	CWRDM	10.10.2024	Sahakarana Bhavan, Trivandrum	Dr. Salini U Dr. Himasree P R
Traffic Flow Dynamics Data, Models and Methods	Indian Institute of Technology Kanpur, India, Indian Institute of Technology Tirupati, India, Technical University Dresden, Germany and Technion-Israel Institute of Technology, Israel	17.10.2024 – 18.10.2024	Online	Dr. Praveen P S
Bhoonodhi Workshop 2024	ISRO	28.10.2024-29.10.2024	Online	Dr. Sabitha N M
Launch of Operation Dronagiri - A National Pilot Project Under the National Geospatial Policy 2022	IIT New Delhi	13.11.2024	Online	Shri. M S Saran
State Workshop II of State Specific Action Plan (SSAP) for Water Sector in Kerala	KSCSTE	05.12.2024	Thiruvananthapuram	Dr. Sabitha N M
UL- International Conclave on Sustainable Construction: Innovation Technologies and Practices	The Uralungal Labour Contract Co-	05.12.2024 – 07.12.2024	Indian Institute of Infrastructure and Construction	Shri. Sanjay Kumar V S Dr. Sabitha N M Shri. Subin B

Name of Programme	Organised by	Date (s)	Venue	Participants
	operative Society Ltd.		(IIIC), Chavara, Kollam	Shri. Ebin Sam Dr. Himasree P R Shri. Ashik K Azad
Fundamentals of GIS & Remote Sensing	KSCSTE-KFRI	09.12.2024 – 13.12.2024	KFRI	Dr. Anila Cyril Dr. Rameesha T V
4th Indo-Japan Preconference Workshop	Indian Geotechnical Society Indore Chapter & Indian Geotechnical Society Aurangabad Chapter in Association with Civil Engineering Department At the Heart of Geosynthetic Activity MIT, Chhatrapati Sambhajinagar (Aurangabad)	18.12.2024	MIT,Chhatrapati Sambhajinagar	Dr. Salini U
Geo Spatial Technology (GIS, GPS, RS etc) for Roads and Transportation	CRRI New Delhi	06.01.2025 – 10.01.2025	CRRI New Delhi	Dr. Shaheem S
5-Day Workshop on AI & Its Applications in Civil Engineering	RASTA	20.01.2025 – 24.01.2025	Online	Smt. P N Salini
Adaptive and Connected Signal Control Systems for Urban Traffic Management	IIT, Bombay	25.01.2025	IIT, Bombay	Shri. Arun Chandran Dr. Praveen P S
SPARC sponsored workshop on 'Safe System Perspective on Vulnerable Road users in India'	Transportation Division, Dept of Civil Engineering, NIT Warangal in Collaboration with Technology and Society Faculty of Engineering, LTH, Lund University, Sweden.	03.02.2025 – 07.02.2025	NIT Warangal	Smt. Ardra S. Krishna
One Day Workshop on Socio Hydrology for Sustaining River and Ecosystem Health	NIT Calicut, TU Delft	03.03.2025	KTDC Kumarakom Gateway Resort, Thanneermukkom	Dr Sabitha N M

Name of Programme	Organised by	Date (s)	Venue	Participants
Vulnerability Assessment of Kerala's Core Road Network	Kerala State Transport Project & Lea Associates South Asia Pvt. Ltd.	18.03.2025	PWD Rest House, Thiruvananthapuram	Dr. Shaheem S Shri. Subin B Dr. Sabitha N M Shri. Wilson K.C Shri. A. Jegan Bharath Kumar
Development of prioritized work program and integrating RMMS with climate data	Kerala State Transport Project & Lea Associates South Asia Pvt. Ltd.	19.03.2025	PWD Rest House, Thiruvananthapuram	Dr. Sabitha N M Dr. Himasree P R
One-day program on "Safeguarding Natural Water Systems" as part of the observance of World Water Day 2025	KSCSTE-Centre for Water Resources Development and Management (CWRDM), Kozhikode	27.03.2025	CWRDM	Dr. Goutham Sarang Shri. Shijith P P
Webinars				
Leading with Convergence: Securing Wired and Wireless Networks - Strategies and Recommendations for Deployment	Fortinet	23.04.2024	Online	Dr. Sanjai R J
IP and the SDGs: Building our Common Future with Innovation and Creativity	IPRIC-K	30.04.2024	Online	Dr. Sanjai R J
Nondestructive testing and evaluation of structures	Ultra Tech Cement Ltd and Indian Concrete Institute	04.05.2024	Online	Dr. Himasree P R
Smart & Intelligent Equipment for Modern and top-quality Infrastructure Developments	International Road Federation – India Chapter	16.05.2024	Online	Dr. Sanjai R J Dr. Goutham Sarang
Modernizing India's Transport Infrastructure: Geospatial solutions and analytics at the forefront	GW consulting Geospatial world	30.05.2024	Online	Dr. Rameesha T V
Use of Permeable Pavements	Applied Research Associates, Inc.	05.06.2024	Online	Shri. Chandra prathap R
Sustainable development of infrastructure using low carbon cement concrete construction	International Road Federation – India Chapter	19.06.2024	Online	Dr. Himasree P R Dr. Goutham Sarang
Electric Bus Scheduling: Problems and Opportunities	TUDelft	20.06.2024	Online	Dr. Anila Cyril
Sustainable Transport and Livability	IISc Sustainable	27.06.2024	Online	Dr. Goutham Sarang

Name of Programme	Organised by	Date (s)	Venue	Participants
	Transportation Lab			
Sustainable Transport and Livability	Special Interest Group (SIG-F4) of the World Conference on Transport Research Society (WCTRS) and Sustainable Transport and Livability (TSTL), Journal, in association with Indian Institute of Science (IISC)	30.08.2024	Online	Shri. M S Saran
Blueprint for Clean air: Legal, Institutional and technological pathways for low emission zones in India	Institute for Transportation and Development Policy (ITDP India) in collaboration with International Council on Clean Transportation (ICCT)	18.09.2024	Online	Shri. M S Saran
Using the Research in Progress Database	Transportation Research Board	27.09.2024	Online	Dr. Sanjai R J
LaTeX for Beginners	KSCSTE - Srinivasa Ramanujan Institute for Basic Sciences, Pampady, Kottayam	30.09.2024 – 01.10.2024	Online	Smt. Ardra S Krishna
Getting Started with NumPy and Pandas: Essential Tools in Data Science	SRM Institute of Science & Technology	15.10.024	Online	Shri. M S Saran
International Webinar series on Sustainable Transport and Liveability	IISC Bangalore	16.10.2024	Online	Dr. Rameesha T V
Resilient Geosynthetic Solutions to Counter Soil Erosion	Maccaferri in collaboration with The Institution of Engineers (India)	17.10.2024	Online	Dr. Salini U

Name of Programme	Organised by	Date (s)	Venue	Participants
Resilient Traffic Management and Control Under Emergency Events	Special Interest Group (SIG-F4) of the World Conference on Transport Research Society (WCTRS) and Sustainable Transport and Livability (TSTL), Journal, in association with Indian Institute of Science (IISC).	21.10.2024	Online	Shri. M S Saran
Geoenvironmental Engineering	University of Illinois Chicago supported by ISSMGE Technical Committee 215 on Environmental Geotechnics (TC 215) and the ASCE/G-I Geoenvironmental Engineering Committee (GEC)	07.11.2024 14.11.2024 05.12.2024 12.12.2024	Online	Dr. Salini U
High-Dimensional Correlation using Subordinated Markov Chains: Modelling and Applications'	CTL IIMA	11.11.2024	Online	Shri. M S Saran
Climate Change and Natural Hazards Risk Assessment and Adaptation Planning	Austroroads	15.11.2024	Online	Dr. Sabitha N M
An Analytical Approach to Generate Synthetic Population by Harnessing Household Travel Survey Data with Mobile Phone Data	Transportation Research Innovation Analysis Laboratory (TRIAL), Department of Civil Eng.Birla Institute of Technology and Science	21.11.2024	Online	Dr. Sabitha N M

Name of Programme	Organised by	Date (s)	Venue	Participants
	Pilani, Hyderabad			
Women in Geospatial: Challenges and Possible Solutions	Department of Civil Engineering, Presidency University, Bengaluru	22.11.2024	Online	Dr. Sabitha N M
IAHR Webinar on Sustainable and Eco-friendly Engineering towards Future (SEE Towards future)	International Association for Hydro-Environment Engineering and Research	25.11.2024	Online	Dr. Rameesha T V
Fast Running Pavement Stress Prediction Models	ARA	18.12.2024	Online	Shri. Wilson K C
Smart Mobility and Technology Trends	UITP Asia-Pacific	23.01.2025	Online	Dr. Sanjai R J
Assessment and Management of Road Safety in the School Zone – Who is Responsible ?"	International Road Federation - India Chapter (IRF-IC)	27.01.2025	Online	Dr. Goutham Sarang Shri. Shijith P P
Strategy to Attract IT & ITeS: Learning from Kerala Experience	Gulati Institute of Finance and Taxation (GIFT), Thiruvananthapuram, Kerala,	31.01.2025	Online	Dr. Sunitha Vijayan
2030 Freight Forecasts: Trends and projections for EU and Beyond	International Road Transport Union	18.02.2025	Online	Dr. Sanjai R J
Unlock the Power of GIS in Architecture, Engineering, and Construction (AEC)	Environmental Systems Research Institute (ESRI)	19.02.2025	Online	Shri. M S Saran
Technical Writing- General aspects of paper writing and AI tools for paper writing	Mar Baselios College of Engineering and Technology (MBCET), Thiruvanathapuram	20.02.2025	Online	Shri. Wilson K C
Webinar series, titled "Data in Action: Using Global and Local Data Sources to Enhance Policy, Investment, and Implementation"- An Overview of the WHO Global Status Report on Road Safety	Asia Pacific Road Safety Observatory (APRSO)	11.03.2025	Online	Shri. Sanjay Kumar V S
Fair Warnings: Managing and Evaluating Fair &	U.S. Vision Zero Network	19.03.2025	Online	Shri. Sanjay Kumar V S

Name of Programme	Organised by	Date (s)	Venue	Participants
Effective Speed Safety Camera Programs				Dr. Goutham Sarang Shri. Shijith P P
Multi modal integration and Urban Green Mobility	Institute of Urban Transport (India), MoHUA	24.03.2025	Online	Dr. Shaheem S Shri. B Anish Kini
Webinar series, titled "Data in Action: Using Global and Local Data Sources to Enhance Policy, Investment, and Implementation"- Complementary Data and Resources to Inform Road Safety Planning and Implementation	Asia Pacific Road Safety Observatory (APRSO)	25.03.2025	Online	Shri. Sanjay Kumar V S
Cold mix asphalt (CMA) Technology for India	SRM University	26.03.2025	Online	Shri. Wilson K C Dr. Salini U Shri. R Chandra Prathap Dr. Goutham Sarang Shri. Shijith P P
NRPPD Webinar on "Political Economy of Land, Labour and Production in Tea Industry"	Centre for Development Studies, Thiruvananthapuram, Kerala	26.03.2025	Online	Dr. Sunitha Vijayan
Ask the Author: Incorporating Informal Transport in Mobility Planning	International Transport Forum	26.03.2025	Online	Dr. Sanjai R J

Road Safety Executive Leadership Course (RSELC), Kuala Lumpur, Malaysia

PUBLICATIONS AND DISSEMINATION

1. Publications and Presentations

Papers Published in Referred Journals

- **Shaheem S**, S Sreelekshmi, Nisha Radhakrishnan, Anjaneyulu MVLR, **Samson Mathew**. (2024). Mode choice modelling of work trips using latent variables for a medium sized city in India. *Transportation Planning and Technology Journal,* published online, 05 April 2024.
- **Kumar, V S Sanjay,** Shabana Yoonus, Anjaneyulu MVLR. (2024). Development of a Land Price Model for a Medium Sized Indian City. *International Real Estate Review* 27, no. 2: 275-302.
- **P N Salini**, P Rahul. (2024). Risk and vulnerability analysis of road network in landslide prone areas in Munnar region, India. *Transportation Engineering,* Volume 18, 100275, ISSN 2666-691X, https://doi.org/10.1016/j.treng.2024.100275. https://www.sciencedirect.com/science/article/pii/S2666691X24000496).
- **N M Sabitha,** Santhosh G Thampi, Sathish Kumar D. (2024). Estimation of Potential Impact of Land Use Change on Sediment Yield from a small Tropical Watershed using the TREX Erosion Model. *Land Degradation and Development (LDD),* Vol.35, No.17, https://doi.org/10.1002/ldr.5398.
- Surendar Natarajan, T, Sree Sharmila, **A Jegan Bharath Kumar.** (2024). Forecasting and Spatially Interpolating Rainfall Data- A Case Study on Thiruvananthapuram. *Indian Journal of Environmental Protection*, Vol.44, No.5. (Scopus).
- Koshy, S A, **Salini U**. (2024). Experimental Investigation on the Clogging and De-clogging Behaviour of Open Graded Friction Course Mixes. *International Journal of Pavement Research and Technology*. 1-17. https://doi.org/10.1007/s42947-024-00449-5.
- Parayil, A, **Salini U**. (2024). Stabilization of Weak Lateritic Soil with Sawdust Ash and Lime. *Indian Geotechnical Journal*, 1-12. https://doi.org/10.1007/s40098-024-00980-z.

- **Salini U**, Parayil, A. (2024). Behavior of controlled low-strength material incorporating industrial by-products fly ash, quarry waste and concrete waste. *Construction and Building Materials,* 447, 138057. https://doi.org/10.1016/j.conbuildmat.2024.138057.
- Koshy S A, **Salini U**, Ajitha T, Praveen A. (2025). Structural Performance Assessment of Lateritic Subgrade Under Varying Moisture Conditions. *Transportation Infrastructure Geotechnology*, 12(1), 1-24. https://doi.org/10.1007/s40515-024-00482-8.
- **T V Rameesha**, Kunal N Tiwari, Akhil Balagopalan, P Krishnankutty. (2024). Assessing containership maneuverability in regular waves: A combined experimental and numerical research. *Ocean System Engineering*, Volume 14, Number 4, December 2024, pages 363-381. https://doi.org/10.12989/ose.2024.14.4.363.
- Kumar, S, **D'Silva, T. C**, Chandra, R, Malik, A, Kumar Vijay, V, & Misra, A. (2024). "Impact of hydrothermal pretreatment at different temperatures on biomethane yield in anaerobic digestion of rice husk". *Biomass Conversion and Biorefinery*, 1-16. https://doi.org/10.1007/s13399-024-06106-y .

Conference Proceedings

- **Shaheem S,** Sajeeha Salim. (2024). Influential features affecting Parking Mode choice behaviour in Kozhikode city. *SIOC Conference Proceedings.*
- **Shaheem S**, Radhakrishnan, N, **Mathew, S**. (2024). Mode Choice Modelling of Different Categories of Work Trips in Thiruvananthapuram City. *Lecture Notes in Civil Engineering*, vol 381, Page 251-269.
- Ajina A, Thomas J, Gireesh G, Salim S, **Shaheem S.** (2023). Analysis of Parking Preference of Users in Thiruvananthapuram City. *International Conference on Innovative Methods and Practical Applications for Cognizant Transportation Systems*. (pp. 425-439), Singapore: Springer Nature Singapore.
- **Kumar, V S Sanjay**, K R Jinumol, **E Sam**, M. V. L. R. Anjaneyulu. (2024). A Corridor-level approach for demarcation of pedestrian vulnerability. *Australasian Road Safety Conference,* 281-284, Publisher: Australasian College of Road Safety. ISBN: 978-0-6481848-7-4 DOI: 10.33492/ARSC-2024.

- Joseph, Soja R, **Sanjay Kumar V S**, S Archana, and K R Jinumol. (2025). A Comprehensive Review and Comparative Evaluation of Pedestrian Crash Prediction Approaches. *Proceedings of the Second International Conference in Civil Engineering for a Sustainable Planet: ICCESP 2024*, pp 287-297.
- **B Subin,** V K Vaishnav, J R Prashanth. (2025). Scientific Crash Investigation: A Case Study of the Bus Crash at Vadakkencherry India. In: Veeraragavan A, Mathew S, Ramakrishnan P, Madhavan H. (eds). *Cognizant Transportation Systems: Challenges and Opportunities. IMPACTS 2023. Lecture Notes in Civil Engineering*, vol 263. Springer, Singapore. https://doi.org/10.1007/978-981-97-7300-8_4.
- **Salini P N**, Sreelakshmi P V, R Ashalatha, Binu Sara Mathew. (2025). Modelling Lateral Placement and Lateral Clearance during Passing Manoeuvres. *Transportation Research Procedia*, Volume 82, Pages 233-250, ISSN 23521465, https://doi.org/10.1016/j.trpro.2024.12.040. (Scopus Indexed). (https://www.sciencedirect.com/science/article/pii/S2352146524003387)
- **Salini P N,** Rajendran K, Archana S, Archa S. (2025). Modeling the Potential Shift to Sustainable Modes and the Resultant Reduction in Carbon Emission. In: Sahu P K, Agarwal A, Kathuria A, Velaga N R (eds). *Proceedings of the 7th International Conference of Transportation Research Group of India (CTRG 2023)*, *Lecture Notes in Civil Engineering*, vol 422. Springer, Singapore. https://doi.org/10.1007/978-981-97-9943-5_3.
- Faizy A, Ashalatha R, Shanoop P, Chandran A, **Salini P N.** (2025). Road Safety Evaluation of Stretches Along Safe Corridor Demonstration Project in Kerala, India. In: Veeraragavan A, Mathew S, Ramakrishnan P, Madhavan H. (eds). *Cognizant Transportation Systems: Challenges and Opportunities. IMPACTS 2023. Lecture Notes in Civil Engineering,* vol 263. Springer, Singapore. https://doi.org/10.1007/978-981-97-7300-8_11.
- **Sabitha N M**, Chandran A, Ramakrishnan T. (2024). Feasibility of Improvement of Flyover at Thampanoor Junction in Thiruvananthapuram City—A Case Study. In: Veeraragavan A, Mathew S, Ramakrishnan P, Madhavan H. (eds). *Cognizant Transportation Systems: Challenges and Opportunities. IMPACTS 2023. Lecture Notes in Civil Engineering,* vol 263. Springer, Singapore. https://doi.org/10.1007/978-981-97-7300-8_36.

- **Sabitha N M,** Angela Theressa Chiyezhan, Chris Sejo, Anandh K G, Vaishnav M, Anna Joseph. (2024**).** Risk Assessment of Kochi Water Metro Using Analytical Hierarchy Process. *Proceedings of the Second International Conference in Civil Engineering for a Sustainable Planet: ICCESP 2024*. AIJR Publisher.
- Gopika A V, **Wilson K C**, Sreelatha T. (2025). Effectiveness of Zycotherm Additive as an Antistripping Agent on Bituminous Mixes. In: Veeraragavan A, Mathew S, Ramakrishnan P, Madhavan H. (eds). *Cognizant Transportation Systems: Challenges and Opportunities. IMPACTS 2023. Lecture Notes in Civil Engineering,* vol 263. Springer, Singapore. https://doi.org/10.1007/978-981-97-7300-8_24.
- Nassir, N A, **Sam, E,** Thomas, J, Mulleti, R. (2024). Spatial Analysis of Road Crash Black Spots: A Case Study of Ernakulam District. In: Ravi Shankar, K.V.R., Prasad, C.S.R.K., Mallikarjuna, C., Suresha, S.N. (eds). *Recent Advances in Transportation Systems Engineering and Management—Volume 1. CTSEM 2023. Lecture Notes in Civil Engineering*, vol 544. Springer, Singapore. https://doi.org/10.1007/978-981-97-6075-6_18, eBook ISBN 978-981-97-6075-6.
- Paul, M M, Varma, M, **Salini, U.** (2024). Analysis of Slope Stability Using SLOPE/W Software. *Proceedings of the Indian Geotechnical Conference 2022.* Volume 6. IGC 2022. *Lecture Notes in Civil Engineering*, vol 484. Springer, Singapore. https://doi.org/10.1007/978-981-97-3393-4_8.
- Mahima Babu, K C, **Salini, U**, Pushpan, S. (2024). Effectiveness of Coir Geocell for Reinforcing Base Course. In: Sivakumar Babu, G L, Mulangi, R H, Kolathayar, S. (eds). Technologies for Sustainable Transportation Infrastructures. SIIOC 2023. *Lecture Notes in Civil Engineering*, vol 529. Springer, Singapore. https://doi.org/10.1007/978-981-97-4852-5_48.
- Midhun, K R, **Salini, U**, Pushpan, S. (2024). Effect of Wet–Dry Cycles on the Behaviour of Dredged Marine Clay. In: Sivakumar Babu, G L, Mulangi, R H, Kolathayar, S. (eds). Technologies for Sustainable Transportation Infrastructures. SIIOC 2023. *Lecture Notes in Civil Engineering,* vol 529. Springer, Singapore. https://doi.org/10.1007/978-981-97-4852-5_50.
- Krishnapriya, P K, **Salini, U,** Pushpan, S. (2024). Performance Evaluation of Palm Oil Fuel Ash for Residual Soil Stabilization. In: Sivakumar Babu, G.L., Mulangi, R.H., Kolathayar, S. (eds). Technologies for Sustainable Transportation

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- Surendar Natarajan, **A. Jegan Bharath Kumar**. (2024). Generating Spatial Distribution and Forecasting the Rainfall by Suitable ML Models-A Case Study of Aiyar River Basin, Tiruchirappalli District. *MATEC Web Conf.*, 400, 02011, DOI: https://doi.org/10.1051/matecconf/202440002011.
- Gadha Gopan, Naveen K Joe, Sabarinath O R, Geo C Moni, Anupama Krishnan S, **Praveen P S, Ashik K Azad,** Thejas Krishnan S. (2024). Analysing Forced Gap Behavior at Unsignalized Intersections. Proceedings of 10th International Conference on Transportation System Engineering and Management (CTSEM 2024) on Recent Advancements in Sustainable and Safe Transportation Infrastructure, *Select Proceedings of CTSEM 2024 - Road Safety and Traffic Engineering.* Vol. 2.
- **P R Himasree**, Athira Raj, Haripriya H, Chaaruchandra Korde, Sarif N, Sreedevi Lekshmi and Blessen Skariah Thomas. (2025). Developing and Enhancing the Properties of Hybrid Fibre-Reinforced High-Performance Concrete Sustainably for Rigid Pavement. *International Conference on Advances in Structural and Geotechnical Engineering (ASAGE'25)*, IIT Patna, February 6-8.
- Harsha P, **Rameesha T V.** (2024). Study of the effect of slope, location and loading direction of single pile on the lateral load capacity. *Proceedings of the Indian Geotechnical Conference 2022.* Volume 1. IGC 2022. *Lecture notes in Civil Engineering*, 476 LNCE, pp. 105-116. Springer, Singapore. https://doi.org/10.1007/978-981-97-1737-8_9.
- **Ardra S. Krishna**, Darshana O, Bhargava Rama Chilukuri. (2024). Assessment of motorised two-wheeler lane compliance on a two-lane highway in Kerala. *Proceedings of the International Conference on Recent Advances in Civil Engineering (ICRACE 2024),* December 12-14, ISBN No. 978-81-977119-3-0.

Book Chapter

- **D'Silva, T.C., Vijayan, S.,** Deb, S., Chandra, R. (2024). Global Climate Change Crisis: Lessons Learned from COVID-19 in the Context of Solid Waste Management and Allied Sectors in India. In: Mukhopadhyay, U., Bhattacharya, S., Chouhan, P., Paul, S., Chowdhury, I.R., Chatterjee, U. (eds) *Climate Crisis, Social Responses and Sustainability*: *Socio-Ecological Study on Global Perspectives.* Climate Change

Management. Springer, Cham. https://doi.org/10.1007/978-3-031-58261-5_8. (pp.175-190).

Presentation of Papers in Seminars/Workshops

Sl No.	Author(s)	Paper Details	Date
1	**Anila Cyril, Vasudevan N**	*"Performance evaluation of city circular bus routes of Thiruvananthapuram".* International Conference on Sustainable Infrastructure: Innovations, Opportunities and Challenges (SIIOC 2024), NITK, Surathkal	30.04.2024 – 01.05.2024
2	Goutham M N, Fathima Zarina, Fathima S, Ashalatha R, **Praveen P S,** Pranoy S Raj	*"Characterizing the effect of Curb Side Bus Stop on Platoon Dispersion along Signalised Corridor".* International Conference on Sustainable Infrastructure: Innovations, Opportunities and Challenges (SIIOC 2024), NITK, Surathkal	30.04.2024 – 01.05.2024
3	Sajeeha Salim, **Shaheem S**	*"Influential Factors Affecting Parker's Mode Choice Behavior in Kozhikode City".* International Conference on Sustainable Infrastructure: Innovations, Opportunities and Challenges (SIIOC 2024), NITK, Surathkal	30.04.2024 – 01.05.2024
4	**Shaheem S, Anila Cyril**	*"Development of Parking Policy for Ernakulam City".* International Conference on Structural Engineering and Construction Management (SECON'24), Federal Institute of Science and Technology, Ernakulam	05.06.2024 – 07.06.2024
5	Kalidasan S S, **B Anish Kini, Rameesha T V,** Pranoy S Raj	*"Investigating traveller perception on Water Transit service factors using Bayesian Best-Worst Method".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
6	**Rameesha T V, Goutham Sarng,** Alosh Denny, Augustine Anish, Tanu shree, Jayalakshmi P E	*"Time series prediction of port container throughput using machine learning models".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering, Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
7	**Sabitha N M, Sanjay Kumar V S,** Sherin N S, Manju V S	*"Assessment of satisfaction level of passenger boat users based on Importance Performance Analysis".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
8	Gadha Gopan, Naveen K Joe, Sabarinath O R, Geo C Moni,	*"Analysing Forced Gap Behavior at Unsignalized Intersections".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024

Sl No.	Author(s)	Paper Details	Date
	Anupama Krishnan S, **Praveen P S, Ashik K Azad,** Thejas Krishnan S		
9	**Shijith P P, Ashik K Azad,** Abhishek V K, Sneha N, Revathi A K, Swathi N, Arathi A, Priyanka T	*"A Case Study on the Performance of Cold In-place Recycled Pavement in Kerala".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
10	**Goutham Sarang,** Shaik Shameena, Sujeet Kumar, Shalini Shankar Saravanan Kothandaraman	*"Laboratory Investigation on the Effects of Randomly Distributed Palmyra Fibers in Subgrade Soil ".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
11	Athulya B Anil, Suresha S.N, **Ebin Sam S**	*" Identification of Road Traffic crash blackspots on National and State Highways in Trivandrum using Kernel Density Estimation".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
12	**Vasudevan N, Sanjay Kumar V S, Arun Chandran,** Liza Cherian	*"Investigating the willingness to use Personal Rapid Transit mode as a feeder system of public transport ".* 10th International Conference on Transportation System Engineering and Management (CTSEM 2024), organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur	19.07.2024 – 20.07.2024
13	**Sabitha N M, Sanjay Kumar V S,** Sherin N S, Manju V S	*"Analysis of Importance Performance Perceptions of Commuters in Inland Waterways: A Case Study".* Bridging Transportation Researchers (BTR) Online Conference	07.08.2024 – 08.08.2024
14	**Vasudevan N, Anila Cyril,** Gaurang Joshi	*"Integrated Choice Latent Variable approach to investigate the traveler's choice for metro rail in an Indian city."* 26th Euro Working Group on Transportation Meeting (EWGT 2024), Sweden	04.09.2024 – 05.09.2024
15	Anaswara A, Ardra C S, Jerin K Joby, Malavika A S, **Salini P N,** Akhila A M	*" Level of Service and Safety of Pedestrian Facilities at Signalized Intersections".* 2nd International Conference on Infrastructure Development: Sustainability, Resilience & Transformational Adaptation (ICID 2024), organised by MBCET, Thiruvananthapuram	25.09.2024-27.09.2024
16	**Sanjay Kumar V S,** K R Jinumol, **Ebin Sam,**	*"A Corridor-level Approach for Demarcation of Pedestrian Vulnerability".* Australasian Road Safety Conference 2024, Hobart, Australia	29.09.2024 – 03.10.2024

Sl No.	Author(s)	Paper Details	Date
	M. V. L. R. Anjaneyulu		
17	Rubeena P R, **Salini P N,** Vignesh Dhurai	*"Understanding Mode Choice Dynamics in Professional Commuting: Infrastructure Enhancements and Behavioural Models".* WCEAM 2024 (18th World Congress on Engineering Asset Management), New Delhi, India	23.10.2024 – 25.10.2024
18	**Shaheem S,** Nisha Radhakrishnan, **Samson Mathew**	*"Evaluation of policy for increasing the mode share of public transport in a medium sized city."* 17th Urban Mobility India Conference 2024, Gandhinagar, Gujarat	25.10.2024 – 27.10.2024
19	Soja R. Joseph, **Sanjay Kumar V S,** Archana S, **Jinumol K R**	*"Pedestrian Crash Prediction Modelling on a Corridor Based Approach Using Machine Learning Techniques*". 17th Urban Mobility India Conference 2024, Gandhinagar, Gujarat	25.10.2024 – 27.10.2024
20	**D'Silva, T C,** Chandra, R, Vijay, V K, Kovacs, K L	*"Integrating hydrothermal carbonization can improve the "carbon neutral" characteristics of anaerobic digestion: Observations made from the semi-continuous reactor treating simulated acidogenic effluents".* 31st Swadeshi Science Congress and National Conference on Towards Net Zero Emissions: Approaches and Stratesies, ICAR-CIFT, Kochi, Kerala	07.11.2024 – 09.11.2024
21	**Vasudevan N, Anila Cyril, B Anish Kini,** Gaurang Joshi	*"Formulating and prioritizing transit supportive policies to augment metro ridership: an integrated choice and latent variable approach".* 2nd International Conference on Innovations in Infrastructure (ICIIF 2024), organized jointly by the Institute of Technology Research and Management (IITRAM), India and Universite Polytechnique Hauts-de-France (UPHF), France *Awarded the prize for best paper.*	15.11.2024 – 17.11.2024
22	**M S Saran,** Vishnu V P, Vishnu Manoj	**"***A Case Study on the Development of a GIS-Based Road Crash Information and Alert System".* AEC Forum 2024 (Co-located with Geosmart India), Hyderabad	04.12.2024 – 05.12.2024
23	**Ardra S Krishna** Darshana O, Bhargava Rama Chilukuri	**"***Assessment of motorised two-wheeler lane compliance on a two-lane highway in Kerala".* International Conference on Recent Advances in Civil Engineering (ICRACE 2024), organized by the Division of Civil Engineering, School of Engineering, Cochin University of Science and Technology (CUSAT)	12.12.2024 – 14.12.2024
24	Sajeeha Salim, **Shaheem S**	**"***Development of Mode choice model of parkers in Alapuzha city".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024

Sl No.	Author(s)	Paper Details	Date
25	**Salini P N, B Anish Kini**	Poster Presentation - **"***Analysis of Red-Light Running with Respect to the Signal Systems and the Prospects of Safety Enforcement".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
26	Jayakodi Mudiyanselage Roshani Shashikala Jayakodi, **T V Rameesha, B Anish Kini,** Darshana Othayoth	*"Enhancing Kochi Water Metro Ridership: A Study of User Satisfaction Indicators and Perceptions".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
27	Ajay Rajendra Kshirsagar, Darshana Othayoth, **T V Rameesha, B Anish Kini**	*"Prioritizing Improvement of Service Attributes of Water Metro using Impact Asymmetry Analysis".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
28	**Ardra S. Krishna,** Darshana Othayoth, Bhargava Rama Chilukuri	**"***Traffic flow characteristics of an undivided two-lane road with Inclusive Motorised Two-wheeler lanes: A Case study*". 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
29	Athulya Saseendran, **Anila Cyril, Vasudevan N**	*"GIS-based performance evaluation of bus routes in Thiruvananthapuram City".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
30	**Salini P N,** Bhaghyalekshmi B S, Ajitha T	*"Critical Gap Estimation and its Effects on Capacity and Safety at a High-Speed Uncontrolled T – Intersection".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department	18.12.2024 - 20.12.2024

Sl No.	Author(s)	Paper Details	Date
		of Civil Engineering, Indian Institute of Technology Bombay, India	
31	Ahad Mohammed Em, **Salini P N,** A Nanditha, Rahul Tiwari	**"***Travel Mode Shift Analysis of Commuters in a Work centre Campus to Impending Light Metro Transport Facility".* 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Mumbai, India, organized by the Transportation Systems Engineering (TSE) group of the Department of Civil Engineering, Indian Institute of Technology Bombay, India	18.12.2024 - 20.12.2024
32	**Dr.Salini U**	• *Behaviour of Controlled Low Strength Material Comprising Quarry Waste and Fly Ash* • *Suitability of Sustainable Infill Materials in Coir Geocell Reinforcement* • *Effect of Pore Fluid Salinity on Consolidation Characteristics of Cochin Marine Clayey Soil* • *Stabilization of Marine Clay by Lime Precipitation Method.* Indian Geotechnical Conference -2024 (IGC 2024), Organised by Indian Geotechnical Society, Aurangabad Chapter and Civil Engineering Department, MIT, Chhatrapati Sambhajinagar	19.12.2024-21.12.2024
33	Darshana Othayoth, **Dr.T V Rameesha, B Anish Kini**	*"Factors influencing passenger satisfaction with water metro: an ordered probit model estimation".* Transportation Research Board 104th Annual Meeting (TRBAM), Washington DC, USA.	05.01.2025-09.01.2025
34	**B Anish Kini,** B K Bhavathrathan, Tom V Mathew	*"Identification of Priority Zones for Regional Dynamic Travel Demand Modeling in Areas Exhibiting Rural-Urban Continuum" – Poster Presentation.* Transportation Research Board 104th Annual Meeting (TRBAM), Washington DC, USA.	05.01.2025-09.01.2025
35	**A Jegan Bharath Kumar**, Lekshmi J.S, **Dr.Sunitha V, Dr.Samson Mathew**	*"Performance Assessment of Moisture Damage of Hot Mix Asphalt Using Admixtures".* International Conference on Advances in Materials, Modeling, and Analysis for Sustainable and Resilient Infrastructure (AMMASRI'25), jointly organised by Amrita Vishwa Vidyapeetham, Coimbatore & National Institute of Technology, Tiruchirappalli.	09.01.2025 – 11.01.2025
36	Surendar Natarajan, **A Jegan Bharath Kumar**	*"Simulation of Extreme Flood Event Through Hydrologic & Hydraulic Modeling- A Case Study on 2015 Extreme Floods in Kovalam Basin, Tamil Nadu."* AMMASRI'25.	09.01.2025 – 11.01.2025
37	**R Chandra prathap**, Fathima C K	*"Evaluation of the Geometric Design consistency for a two-lane highway in rolling terrain".* AMMASRI'25.	09.01.2025 – 11.01.2025

Sl No.	Author(s)	Paper Details	Date
38	**Sanjay Kumar V S**, K R Jinumol, **Ebin Sam S,** MVLR Anjaneyulu	*"Identification and Clustering of High-Risk Road Corridors Based on Pedestrian Fatal Crashes".* 37th Kerala Science Congress, organized by KSCSTE, with coordination by KSCSTE-Kerala Forest Research Institute (KFRI) and Kerala Agricultural University, Thrissur, at Kerala Agricultural University (KAU), Thrissur.	07.02.2025 – 10.02.2025
39	**Dr.Shaheem S,** Sajeeha Salim	*"Development of Parking Policy Framework for Palakkad Town".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
40	**Ebin Sam S, Sanjay Kumar V S,** Athulya B Anil	*"Evaluation of Spatial Interdependency of Crash Hotspots in Ernakulam District".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
41	V K Anagha, K R Jinumol, **Sanjay Kumar V S,** Geeva George	*"Comparison of Pedestrian Facilities with the Standards Across Selected Corridors".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
42	S Megha, K R Jinumol, **Sanjay Kumar V S**	*"Evaluating the Impact of Bus Stops on Pedestrian Crashes in a Vulnerable Corridor".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
43	**M S Saran,** Nisha Radhakrishnan, P P Anjana	*"Mobile App for Real-Time Road Data Collection and Dissemination".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
44	**A Jegan Bharath Kumar, R Chandra prathap**	*"An Overview of Pavement Design for Coastal Highway: A Case Study of Thiruvananthapuram District*". 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
45	Resmi.V, **R Chandra prathap, Salini U**	*"Integrated drainage solutions for Plain and Rolling terrain: Case study of a coastal corridor in Kerala".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
46	Anna Mary Johnson **R Chandra prathap, Salini U**	*"Laboratory investigation of the use of fiber reinforced plastic (FRP) as filler and binder modifier to hot bituminous mixes".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
47	**Wilson K C,** Dr. M Satyakumar, Sukanya K R	*"Experimental Analysis on the Durability of Bituminous Surface Mixes".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
48	Seba Sidhik, **Wilson K C**	*"Comparison between Stripping Value of Road Aggregates as per Is 6241-1971 And 6241-2024".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
49	**Ashik K Azad, Dr. Shaheem S,** Abhiram M P, Aquiline Jojo	*"Evaluation of Proposed Traffic Management Measures at Vattiyoorkavu Junction in Thiruvananthapuram City".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
50	**Shijith P P, Ashik K Azad, Dr.Goutham Sarang,** Dins Thomas, Athulya BR	*"Sustainable Pavement Rehabilitation Through Cold In-place Recycled Pavement – A Case Study in Kerala".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025

Sl No.	Author(s)	Paper Details	Date
51	**Dr.Goutham Sarang,** Shaik Shaheen, Shobhit Agarwal, **Shijith P P,** Athulya B R	*"Stabilization of sandy silt soil using sunflower seedshell powder for pavement subgrade".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
52	Afsana Salim, Hridya Suresh, **Himasree P R**	*"Biochar as replacement for cement in concrete".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
53	**Anila Cyril, Vasudevan N**	*"Integrated Spatial Multi-Criteria Decision Analysis for Public Transportation: A Case Study of Thiruvananthapuram".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
54	**Vasudevan N, Anila Cyril,** Gaurang Joshi	*"Modeling Traveler's Preferences for Kochi Metro Rail using Integrated Choice Latent Variable Approach".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
55	**D'Silva, T C,** Chandra R, Vijay V K, Kovacs K L, Gandhi B P, Semple KT	*"Development of a strategy to dark fermentation technology from mixed anaerobic cultures for enhanced biohydrogen production".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
56	**Salini P N,** Nanditha A	*"Evaluating Pedestrian Facilities for Enhancing Safety of Pedestrians at Signalized Intersections"* - (Poster presentation). 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
57	**Sunitha Vijayan,** Christabell P J, Errampalli Madhu	*"Economic Burden of Out-of-pocket Expenditure due to Road Traffic Injuries: An Empirical Assessment of Road Accident Cases Reported at Motor Accident Claims Tribunal (MACT), Thiruvananthapuram District".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
58	**B Anish Kini**, Razal Kodappilly	*"Development of Multi-Depot Route Optimisation for Conventional and Electric Buses"*- (Poster presentation). 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
59	Abhishek R, **Praveen P S**, Parthan Kunhikrishnan, **Anila Cyril.**	*"Safety Evaluation of Unsignalized Intersection Using Surrogate Safety Measure".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
60	**Praveen P S, Ashik K Azad,** Gadha Gopan Anupama Krishnan	*"A case study on quantification of forced Gap behaviour based on speed variation".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
61	**Ardra S. Krishna,** Darshana Othayoth	*"Evaluation of compliance of motorized two-wheeler lanes on a two-lane undivided highway in Kerala".* 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
62	**Sanjai R J,** Smrudu T K	*"Vicissitudes of Taxi Industry in Kerala"* - (Poster presentation). 37th Kerala Science Congress.	07.02.2025 – 10.02.2025
63	**Salini P N,** Nanditha A	*"Ensuring Pedestrian Safety: Evaluating Level of Service at Signalized Intersections"*- (Poster presentation - online)". IRF-IC's Global Road Infratech Summit & Expo.	06.03.2025 – 07.03.2025

Sl No.	Author(s)	Paper Details	Date
64	**Ebin Sam S,** Sarath Kumar Ponugumati, **Sanjay Kumar V S**	*"GIS based Evaluation of Artificial Intelligent (AI) enforcement cameras on road safety in Kerala, India,".* 2nd Vision Zero Simmit, MANIT Bhopal.	26.03.2025-28.03.2025

Shri.Sanjay Kumar V S, Principal Scientist; Dr. Goutham Sarang, Jr.Scientist; Dr. Rameesha T V, Jr.Scientist; Shri.Shijith P P, Jr.Scientist -NATPAC attending CTSEM 2024

Shri.Sanjay Kumar V S, Principal Scientist at Australian Road Safety Congerence 2024

Scientists of NATPAC at the 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC)

2. Invited Talks/Media Interactions

Invited Talk

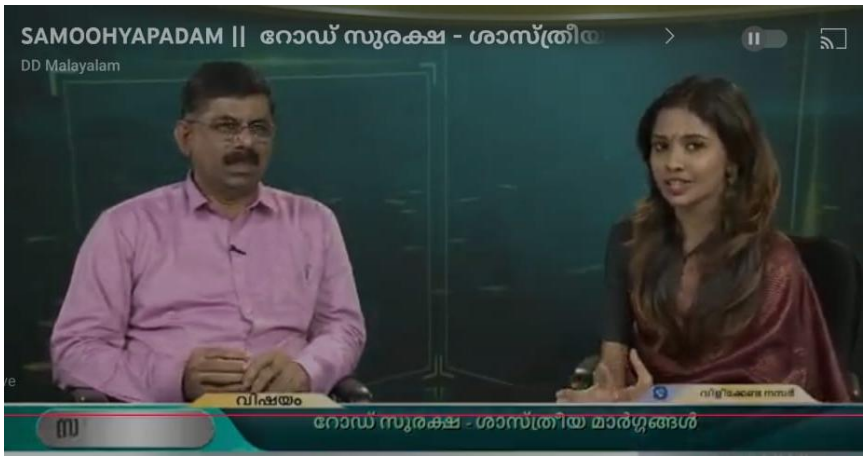
Sl. No.	Name& designation of staff	Topic/Particulars	Event/Venue	Date
1	Prof. (Dr.) Samson Mathew, Director	- *Application of Geotextiles in Rural Roads*	Five-Day Executive Development Programme on Rural Road	31.05.2024

Sl. No.	Name& designation of staff	Topic/Particulars	Event/Venue	Date
		- *Use of Waste Plastics in Rural Road Construction*	Construction Methods, Sponsored by NRIDA, Ministry of Rural Development, GoI, New Delhi at National Institute of Technology, Warangal	
2		*Transportation Infrastructure Development in the future*	Expert talk at the Department of Civil Engineering, NIT Calicut	21.08.2024
3	Dr. Shaheem S, Principal Scientist	*Road Safety Audit*	Jyothi Engineering College, Thrissur	17.12.2024
4		Guest Speaker	"EV-Ready Kerala: A Policy Roundtable on Next-Gen Charging Solutions", ANERT Office, Thiruvananthapuram	19.03.2025
5	Shri. V S Sanjay Kumar, Principal Scientist	*Road Safety Auditing of Rural Roads*	Training Program on "TFT03: Road Safety – Relevant Highway and Engineering Aspects (Batch XVI), Highways Department – Training Centre, Tamil Nadu at the Training Centre, Chennai	29.05.2024
6		*Design Stage Road Safety Audit - Hands on exercise*		30.05.2024
7		*Road Safety Audit - Site Visit*		
8		*Children and Road Safety*	Inaugurated the Road Safety Club and delivered the inaugural talk, The School of the Good Shepherd, Akkulam	13.06.2024
9		*Preventing Road Crashes and Protecting Lives by Cultivating a Road Safety Culture*	Road Safety Month Observations, organised by the Technical Wing of National Safety Council – Kerala Chapter (Online)	29.01.2025
10		*Safe roads, bright futures: Navigating the Challenges of Road Safety*	National Road Safety Campaign by GoI organised by IIT Palakkad	05.03.2025
11	Shri. M S Saran, Scientist	*Sustainable Transportation in Kerala*	Geo Odyssey 2025, University College Thiruvananthapuram	06.03.2025
12	Dr. Sabitha N M, Senior Scientist	*Institutional Arrangement*	Capacity Building and Training on Metro and Future Urban Rail Transport for South Zone	26.03.2025
13	Shri. Wilson K C, Senior Scientist	*Role of geometric elements in safety*	For M.Tech first-year Transportation Engineering students of MBCET	23.09.2024
14	Shri. K C Wilson, Senior Scientist Shri. Arun Chandran, Senior Scientist	*Role of NATPAC as an R&D Centre for Providing Sustainable Transportation Solutions*	83rd annual conference of Indian Roads Congress	08.11.2024 - 11.11.2024
15	Shri. A Jegan Bharath Kumar, Scientist	*Rigid Pavement Design*	Professional Development Programme, National Institute of Technical Teachers Training & Research (NITTTR), Chennai	20.02.2025
16	Dr. Salini U, Scientist	*Optimizing Road Utility Trench Rectification with Controlled Low Strength Material (CLSM)*	Smart Tech Talk Series organized by Turtle Smart Solutions	27.07.2024
17	Shri. B Anish Kini, Scientist	*Best Practices in Road Safety Audit*	Industry Lecture for 16 Nos of M.Tech and Ph.D students at IIT	14.08.2024

Sl. No.	Name& designation of staff	Topic/Particulars	Event/Venue	Date
			Hyderabad, organised by TEG, Civil Department, online mode	
18		Panelist for Panel Discussion on *"India's road to Autonomy: Opportunities and Challenges"*	Conclave on Robotics and Engineering (CORE) at Muthoot Institute of Technology and Science, Varikoli, Ernakulam	30.10.2024
19	Dr. Praveen P S, Junior Scientist	*Understanding Traffic Surveys and Management Measures*	Mar Baselios College of Engineering and Technology	18.01.2025
20	Dr. Vasudevan N, Junior Scientist	*Lecture on Traffic Engineering*	Resource person as part of KTU curriculum-specific 3rd Module for B.Tech CET 206 - Transportation Engineering, at Christ College of Engineering, Irinjalakuda	15.04.2024
21		Resource Person	Imparting the KTU curriculum-specific 3rd Module (Traffic Engineering) for the Course CET 206 - Transportation Engineering, Christ College of Engineering, Irinjalakuda	14.03.2025
22		*Land Use Models and Comprehensive Mobility Plan'*	Sahrdaya College of Engineering and Technology, Kodakara, Thrissur	17.03.2025
23	Dr. Himasree P R, Junior Scientist	*Nature's strength in construction: Bamboo Reinforced Concrete Solutions for Future Cities*	NITCalicut	29.10.2024
24	Dr. Anila Cyril, Junior Scientist	*Sustainable Public Transport and the Role of Electric Buses*	National Institute of Technology, Karnataka Surathkal	24.02.2025
25		*Electrification of Public Transport: Challenges and Solutions*		25.02.2025
26		*Intelligent Transportation Systems in Public Transportation*	St. Thomas College of Engineering, Chengannuur	27.02.2025
27	Shri. Shijith P P, Junior Scientist	*Pavement Design and Evaluation: A Comprehensive Approach to Optimizing Highway Performance*	St. Thomas College of Engineering, Mattannur, Kannur	31.12.2024
28		*Road safety awareness*	As part of Road Safety Week 2025 for the road users, organized by Program Implementation Unit (PIU), Wayanad District at the seminar hall of Ambalavayal Panchayat, Wayanad	16.01.2025
29	Dr. Goutham Sarang, Junior Scientist	*Warm Mix Asphalt - A Step to Sustainability*	St. Thomas College of Engineering, Mattannur, Kannur	31.12.2024
30	Dr. Rameesha T V, Junior Scientist	Visiting Faculty	KMEA Engineering College for the subject "Climate change and sustainability" for 8th semester students	

Media Interaction

Sl. No.	Name& designation of staff	Topic/Particulars	Media /Event	Date
1	Dr.Samson Mathew, Director, NATPAC	റോഡ് സുരക്ഷ – ശാസ്ത്രീയ മാർഗ്ഗങ്ങൾ	Doordarshan (DD Malayalam), Samoohyapatam	17.12.2024
2	Dr. S Shaheem, Principal Scientist	*Traffic Safety*	Prabhatha Bheri, All India Radio	
3		കുരുതിക്കളമാകുന്ന റോഡുകൾ...അധികൃതരുടെ പണി പിഴ പിരിക്കൽ മാത്രമോ?	Asianet News, Nerkkuner	15.12.2024
4	Shri. V S Sanjay Kumar, Principal Scientist	*Safety Issues in MC Road*	Malayala Manorama	28.06.2024
5	Shri. Subin B, Senior Scientist	Nerkku Ner programme as part of Shirur landslide	Asianet	
6		*NH66 development*	All India Radio - Prabhathabheri	
7	Shri. Ebin Sam S, Scientist	*Road Safety Concerns at Work Zones*	Malayala Manorama	14.08.2024
8	Shri. B Anish Kini, Scientist	*Expert opinion on Parking Issues in Ernakulam City*	Samakalikam programme, All India Radio	22.07.2024



In conversation with the public – Dr. Samson Mathew, Director, NATPAC on Doordarshan's Samoohyapatam

3. Road Safety Education Materials

Films

1. Savari, A Documentary Film on Road Safety – For Auto rickshaw Drivers
2. Gathy, A Short Film on Two Wheeler Safety
3. IRC Film (English and Malayalam) – For School Children
4. Right Step (English and Malayalam) – For School Children
5. VIC Roads, Australia – For School Children
6. A Picnic on Pedals – For School Children
7. Vazhikkannumai – On Pedestrian Safety
8. Sradhha –Transportation of Goods Vehicles
9. Take care

10. A Film on Seatbelt
11. A film on Rash Driving
12. A Film on Pedestrian Crossing
13. Distraction is Extraction
14. Hands free is not Risk free

Cartoon Films

1. Zebra crossing
2. Why should we avoid accidents
3. Travel from school to home
4. Tow way road
5. Take to hospital
6. Signals
7. Signalized Intersection Turn From Wrong Lane
8. Safe road to travel
9. Rules to obey while crossing the road
10. Rules for students who are walking to school
11. Preparation for Safe Driving - Two wheeler
12. Preparation For Safe Driving - Four Wheeler
13. Pelican signal
14. Parked vehicle
15. One way street
16. Never Jump a signal
17. Never Drive on Footpath
18. Never cross in a roundabout
19. How to cross roads at night
20. Head Safety First
21. Getting ready for going to school
22. Four lane road
23. For those who use auto rickshaw
24. For those who cross railway lane
25. For students traveling in school bus, van, mini van
26. For people using public vehicle
27. For people using private vehicle
28. For people using cycle
29. Driving in rain
30. Driving distraction-Talking
31. Driving distraction two-wheeler
32. Driving distraction children
33. Driving distraction - Hoarding
34. Driving distraction - Drinking water
35. Driving discipline in an Undivided Road
36. Driving at bends
37. Don't play on road

38. Don't overtake in bends
39. Do not use Mobile Phone While Driving
40. Do not use Mobile Phone While Crossing Road
41. Do not over speed
42. Dim your head lamp
43. Crossing roads
44. Always walk on the right hand side of the road
45. Always keep the right lane when turning right
46. Always Change Lane with Indicator
47. About vehicle Preference in roundabouts

Booklets

1. Safe Road to School (English & Malayalam)
2. Preventing Accidents
3. Two-Wheeler Driving Manual
4. Road Safety Manual for Goods Vehicle
5. All about Lane Driving and Road Safety
6. Auto rickshaw Driving Manual (English & Malayalam)
7. Defensive Driving
8. Teacher's Manual (English & Malayalam)
9. Safe Community Programme for Panchayats (English & Malayalam)
10. Helping Road Accident Victims (English & Malayalam)
11. Rules of Road Regulations,1989
12. On Car and Safe Driving
13. Road Safety Slogan
14. Vehicle Upkeep and Safety
15. Alphabets of Road Language
16. Road Safety Quiz
17. Safe and Responsible Parking
18. Road Safety and Youth Leadership Programmes
19. Safety Rules for Railway Level Crossing and Around Tracks
20. Safe and Secure Travel by Train
21. Driver's Guide (Malayalam)
22. Formation and Activities of Road Safety Cell in Schools (Malayalam)
23. കാൽനടയാത്രക്കാർക്കുള്ള സുരക്ഷാമാർഗരേഖ
24. സ്കൂൾകുട്ടികൾക്കുള്ള റോഡ്സുരക്ഷാധിഷ്ഠിത ബോധവത്കരണം
25. പപ്പു ഉറങ്ങുകയല്ല
26. സുരക്ഷിതമായ സൈക്കിൾസവാരി
27. സുരക്ഷിത പാർക്കിംഗ്
28. റോഡിലെ ഭാഷയുടെ അക്ഷരമാല
29. റോഡ്സുരക്ഷാ മുദ്രാവാക്യങ്ങൾ
30. റോഡ്ഗതാഗത നിയന്ത്രണ ചട്ടങ്ങൾ
31. ലെയിൻ അധിഷ്ഠിത ഡ്രൈവിംഗും റോഡ്സുരക്ഷയും

32. പ്രതിരോധാത്മകഡ്രൈവിംഗ്
33. റോഡ്സുരക്ഷയും യുവജന നേതൃത്വ പരിപാടികളും
34. ഇരുചക്ര വാഹനമോടിക്കുന്നവർക്ക് ഒരു കൈപുസ്തകം
35. ചരക്ക് വാഹനങ്ങൾക്കുള്ള റോഡ് സുരക്ഷാസഹായി
36. പ്രതിരോധാത്മക ബസ്ഡ്രൈവിംഗും റോഡ്സുരക്ഷയും
37. റോഡപകടങ്ങൾ തടയുന്നതിനുള്ളമാർഗങ്ങൾ
38. വാഹനങ്ങളുടെ പരിപാലനവും സുരക്ഷയും
39. കുട്ടികൾക്കായുള്ള റോഡ് സുരക്ഷാധിഷ്ഠിത ബോധവൽക്കരണം

Leaflets

1. Who is Walking on the Wrong Side
2. Police Hand signals
3. Safe and Correct Ways of Parking
4. Protect your Child from Injury
5. Spot the Hidden Dangers
6. Two Wheeler Driving
7. School Safety – A Checklist for Parents
8. Understanding Traffic Rules and Regulations (English & Malayalam)
9. Helmets (English & Malayalam)
10. Golden Rules for Defensive Driving (English & Malayalam)
11. Safe Car Driving
12. Safety Precautions for Two-Wheeler Drivers
13. Safe and Responsible Parking
14. Traffic Control Devices
15. Trains of thought- Use Extreme caution when crossing
16. Trains of thought- Safety Slogans - Just Think
17. Trains of thought- Safety Slogans - Just Think over these
18. Railway level Crossings- Safety Tips for Vehicle Drivers
19. Safe Crossing of Railway Tracks-Tips for Pedestrians and Cyclists
20. Railway Level Crossing- Safety Tips for School Buses
21. Railway Level Crossing- Safety Tips for Truck drivers
22. സുരക്ഷിത ഇരുചക്രവാഹന സവാരി
23. രാത്രികാലറോഡപകടങ്ങൾ എങ്ങനെ ഒഴിവാക്കാം
24. സുരക്ഷിത യാത്രയ്ക്കുള്ള മാർഗനിർദ്ദേശങ്ങൾ
25. പ്രതിരോധാത്മക ഡ്രൈവിംഗ്
26. റോഡ്സുരക്ഷയും മുതിർന്ന പൗരന്മാരും
27. അമിതവേഗതയും അപകടസാധ്യതകളും
28. സുരക്ഷിത പാർക്കിംഗ്
29. സുരക്ഷിത ബസ്യാത്ര
30. ബസ്യാത്രയിൽ/കാൽനടയാത്രക്കാർ
31. ഡ്രൈവർമാർ/അമിതവേഗത
32. സ്ക്കൂട്ടർ/മോട്ടോർ/ഹെൽമെറ്റ് ധരിക്കൂ

33. മൊബൈൽഫോൺ/സീറ്റ്ബെൽറ്റ്
34. ആട്ടോറിക്ഷയിൽ/മദ്യപിച്ച്
35. റോഡിൽ എങ്ങനെ സുരക്ഷിതരാകാം

Road Safety Posters

1. പത്തിനും പതിനഞ്ചിനും ഇടയ്ക്ക് വയസ്സുള്ള കുട്ടികൾക്ക വേണ്ടി രക്ഷിതാക്കൾക്ക് എന്തുചെയ്യാം 1
2. പത്തിനുംപതിനഞ്ചിനും ഇടയ്ക്ക് വയസ്സുള്ളകുട്ടികൾക്ക് വേണ്ടി രക്ഷിതാക്കൾക്ക് എന്തുചെയ്യാം 2
3. അഞ്ചിനും പത്തിനും ഇടയ്ക്ക് വയസ്സുള്ളകുട്ടികൾക്ക് വേണ്ടി രക്ഷിതാക്കൾക്ക് എന്തുചെയ്യാം 1
4. അഞ്ചിനും പത്തിനുംഇടയ്ക്ക് വയസ്സുള്ളകുട്ടികൾക്ക് വേണ്ടി രക്ഷിതാക്കൾക്ക് എന്തുചെയ്യാം 2
5. അഞ്ചിനും പത്തിനും ഇടയ്ക്ക് വയസ്സുള്ളകുട്ടികൾക്ക് വേണ്ടി രക്ഷിതാക്കൾക്ക് എന്തു ചെയ്യാം 3
6. റോഡ്മുറിച്ചു കടക്കുമ്പോൾ 1
7. റോഡ്മുറിച്ചു കടക്കുമ്പോൾ 2
8. റോഡ്മുറിച്ചു കടക്കുമ്പോൾ 3
9. ചിലറോഡ്സുരക്ഷാ പ്രവർത്തനങ്ങൾ 1
10. ചിലറോഡ്സുരക്ഷാ പ്രവർത്തനങ്ങൾ 2
11. ആട്ടോറിക്ഷയിൽ സഞ്ചരിക്കുമ്പോൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങൾ 1
12. ആട്ടോറിക്ഷയിൽ സഞ്ചരിക്കുമ്പോൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങൾ 2
13. റോഡ്സുരക്ഷയെ കുറിച്ച് അറിഞ്ഞിരിക്കേണ്ട മറ്റ്കാര്യങ്ങൾ 1
14. റോഡ്സുരക്ഷയെ കുറിച്ച് അറിഞ്ഞിരിക്കേണ്ട മറ്റ്കാര്യങ്ങൾ 2
15. നിങ്ങളും റോഡ് സുരക്ഷിതത്വവും 1
16. നിങ്ങളും റോഡ് സുരക്ഷിതത്വവും 2
17. ക്രോസിംഗ് ഡ്രിൽ 1
18. ക്രോസിംഗ് ഡ്രിൽ 2
19. യാത്ര ചെയ്യുമ്പോൾ ശദ്ധിക്കേണ്ട കാര്യങ്ങൾ
20. സിഗ്നൽലൈറ്റുകൾ
21. സൈക്കിൾസവാരി ചെയ്യമ്പോൾ
22. റോഡിൽ നടക്കുമ്പോൾ
23. Protect your life with seat belt and helmet
24. സുരക്ഷിതമായി ബസ്സിൽയാത്ര ചെയ്യുന്നതിന് ചില നിർദ്ദേശങ്ങൾ
25. സിഗ്നൽലൈറ്റുകൾ കാൽനടയാത്രക്കാരുടെ ശ്രദ്ധയ്ക്ക്

INFRASTRUCTURE

a. Infrastructure

1. Major Purchase of Equipments/Software/Renewal in 2024-25

- CUBE - Renewal
- MATLAB Fuzzy Logic AMC
- Mobile App for Road data collection
- Architectural Engineering & Construction Collection (AEC Collection) – Renewal of Software license

2. Testing Facilities and Equipments

NATPAC is well equipped with the state-of-the-art equipment's for testing of highway materials, pavement evaluation and mix design. There is also a Geotechnical Lab for soil testing with all the equipment's for routine testing of soil. The Traffic Engineering Lab of NATPAC is equipped with several software's used for traffic modelling and analysis.

The Environmental Lab services provide air quality monitoring, noise level measurement and measurement of meteorological parameters.

NATPAC has all the basic test setup for tests on soil, aggregate and bitumen. Some of the major equipment's/software's available with NATPAC is given below:

Tests on Soil	Tests on Bitumen
1. All basic equipments 2. Standard and Modified Proctor Compaction test setup 3. Automatic motorized universal compactor 4. Hydraulic Ejector 5. CBR test equipment 6. Direct Shear Test Setup 7. Triaxial Shear Test Setup 8. Unconfined Compression Test Setup 9. Consolidation Test Setup 10. Combined pH, TDS and conductivity meter	1. All basic equipment 2. Brookefield viscometer **Tests on Aggregate** 3. All basic equipment **Tests on Mixes** 1. Digital Marshall stability and ITS test setup 1. Motorized centrifuge extractor 2. Automatic compactor 3. Wheel rut tester and Shaper 4. Corelok Device 5. Bitumen mixer
Field Testing 1. Field CBR 2. Dynamic cone penetrometer test 3. Core cutting machine - (100mm dia. core bit)-undisturbed sampling of bituminous pavement. 4. Fifth Wheel Bump Integrator 5. Benkelman Beam 6. Skid resistance tester	**Traffic Engineering Laboratory** 2. Noise level meter 3. Speed Radar 4. Inertial Measurement Unit (IMU) and laser sensors as add-on to Video VBox 5. TIRTL
Topographic Survey 1. DGPS 2. Total stations-3 Nos. 3. Automatic levels-2 Nos. 4. High end plotters -2 Nos. 5. Handheld GPS	**Environment Laboratory** 1. CO Analyzer 2. CO2Analyzer 3. NO2Analyzer 4. CH4Analyzer 6. Respirable Dust Sampler (APM 460)-2 Nos.
Application Softwares 1. MX ROAD 2. AUTO CAD 3. ARC GIS 4. 3DS MAX 5. TALLY 6. STADD PRO 7. HDM IV 8. SPSS with AMOSS 9. ERDAS 10. OPEN ROADS DESIGNER 11. OPEN ROADS CONCEPT STATION 12. Bentley CUBE 13. PTV Vissim, Viswalk, Vistro and Visum 14. MATLAB 15. TRANSCAD	**Water Transport Laboratory** 1. Echo sounder 2. Portable cantilever scale 3. Flow Probe

3. Library and Information Services

The NATPAC Library is endowed with the responsibility of providing assistance to the scientists, researchers and students in their scientific and academic activities. The library continued to cater to the information needs of the institute and students. The library has a vast collection of books on Transportation, Traffic Engineering, Transport Economics, Urban and Regional Planning, Water Transport, Environment, Management, Operations Research, Geography, Statistics and allied subjects. The Technical Reports prepared by NATPAC are

also available for reference purpose. The library has a good collection of the publications by Indian Roads Congress (IRC) and this collection is being updated regularly. A number of new journals, both National and International, have been added to the library during this year.

An in-house database of books, periodicals, bound volumes of journals, reports, etc., is being updated. The library is maintaining a blog *natpaclibrary1.blogspot.in* to make users abreast of the latest developments in the library. NATPAC library is automated and managed using LIBSOFT. Bibliographic record of books available in the library can be accessed through https://natpac.libsoft.org/.

The major services rendered to users by the library are reference service and literature search. Clippings from newspapers, web resources, etc. are maintained in the library for the benefits of users. E-mail alerts are sent to scientists and technical staff for new arrival of books and publications. NATPAC has been extending academic support and other R&D facilities to Researchers as well as Professionals to carry out their research and project works. During this year many Research scholars/students from different institutions undertook project works using the facilities available in NATPAC library.

PROFESSIONAL NETWORKING

1. Nominations to Technical Committees/Advisory Bodies/Membership of Professional Institutions

Dr. Shaheem S

i. Member, LSGD Road Maintenance Fund Working Committee, 7th Finance Commission
ii. Member, Working Group for the Development of an Infrastructure Sustainability Rating System, KIIFB
iii. Member, H1-Transportation Planning and Traffic Engineering Committee, IRC (2025-2028)

Shri. K C Wilson

i. Life Member, Indian Roads Congress, New Delhi
ii. Member, Accident Prevention and Trauma Care Association (APTCA)
iii. Member, Institute of Urban Transport (IUT), India
iv. Member Institute of Engineers

Shri. Ebin Sam S

i. Life Member, Indian Roads Congress (e-LM 100932)
ii. Life Member, Institute of Urban Transport (M-1500)
iii. Kerala Economic Association - Life Membership (449)
iv. Life Member of Indian Society of Remote Sensing (L-4790)
v. Member, The Institution of Engineers (India) (M-1645301)
vi. Additional Nodal Officer for the implementation of iRAD Project
vii. Nominated Member of Working Group on Sustainable Development Goals- 11 for Kerala by KSCSTE
viii. Member of Accident Monitoring Committee of Kerala State Road Transport Corporation (KSRTC)
ix. Member of the Review Committee of Kerala State Road Transport Corporation (KSRTC)
x. Expert Member of Task Force for Action plan to reduce accidents involved by KSRTC buses

Shri. B Anish Kini

i. e-Life member (ELM-100591) – Indian Roads Congress
ii. Life Member – Transportation Research Group of India

Dr. Anila Cyril

i. Member, Industry Academia Panel, KIT's College of Engineering (Empowered Autonomous) Kolhapur

Dr. Goutham Sarang

i. Life Member, Indian Roads Congress (e-LM 101503)

Shri. Shijith P P

i. Life Member, Indian Roads Congress (e-LM 103541)

Dr. Sunitha Vijayan

i. Life membership, Kerala Economic Association
ii. Member, UoK-FYUGP Department Committee at the PG Department of Economics, VTM NSS College, Dhanuvachapuram

iii. Member, District Planning Sub-Committee for Transport and Communication, Thiruvananthapuram

Shri. Tinku Casper D'Silva

i. Member, State Environmental Impact Assessment Authority, Directorate of Environment and Climate Change, Govt. of Kerala

Dr. Sanjai R J

i. Life Member, Institute of Urban Transport (India)
ii. Member, Trivandrum Management Association (TMA)

2. Paper Reviews

Dr. Shaheem S

i. Reviewer - 2nd Vision Zero Summit International Conference on Resilient Urbanism & Safe Mobility (5 papers)
ii. Reviewer - JIPD Journal

Shri. Jegan Bharath Kumar A

i. Reviewer of "Transportation Letters: The International Journal of Transportation Research"
ii. Reviewer of "Case Studies on Transport Policy"
iii. Reviewer of "Transportation Research Record (TRR)"

Dr Salini U

i. External Doctoral Committee member of 1 Research Scholar of CET
ii. External examiner for comprehensive viva voce examination of 1 Research Scholar of NSS College of Engineering Palakkad
iii. Reviewer of the Journal "International Journal of Pavement Research and Technology, Springer"
iv. Reviewer of the Journal "Journal of the Institution of Engineers (India: Series A (IEIA)"

Dr. Himasree P R

i. Reviewer of the Journal "Building Engineering", Elsevier
ii. Reviewer of the Journal "Mechanics of Time-dependent Materials, Springer

iii. Reviewer of the Journal "Journal of Architectural Engineering", ASCE
iv. External Doctoral Committee member of 2 Research Scholars of CET

Dr. Goutham Sarang

i. PhD co-guide for one research scholar and PhD research advisor for one research scholar at Vellore Institute of Technology Chennai
ii. Reviewer of the Journal "Construction and Building Materials"
iii. Reviewer of the Journal "Transportation Infrastructure Geotechnology"

3. Awards/Recognitions

- **Dr. Samson Mathew, Director, NATPAC** got the approval from the Government of Kerala for attending the 2nd Road Safety Executive Leadership Course (RSELC) in Kuala Lumpur, Malaysia Co-organized by the Johns Hopkins International Injury Research Unit (JH-IIRU) and the Global Road Safety Partnership (GRSP), with support from Bloomberg Philanthropies, 9th November to 15th November, 2024.
- **Dr. Shaheem S, Principal** Scientist, awarded Ph D in Civil Engineering from NIT Tiruchirappalli on the topic "Integrated Approach for Increasing Public Transport Share in Medium-Size Cities".
- **Shri. V S Sanjay Kumar**, Principal Scientist – received the ITS Support from SERB for attending the 'Australasian Road Safety Conference 2024', Australia, 30th September, 2024 to 3rd October, 2024).
- **Shri. M S Saran,** Scientist, awarded the prize for Best Poster - "*Mobile App for Real-Time Road Data Collection and Dissemination*" under Engineering and Technology Session. 37th Kerala Science Congress, organized by KSCSTE, with coordination by KSCSTE-Kerala Forest Research Institute (KFRI) and Kerala Agricultural University, Thrissur, at Kerala Agricultural University (KAU), Thrissur, 7th to 10th February 2025.
- **Dr. Sabitha N M,** Senior Scientist, received the DST Support from WISE KIRAN Division for attending Women in Space Allied Science Leadership Programme conducted by DST in association with British Council under the UKEIRI programme at IACS, Kolkata, 28th to 31st January 2025.
- **Shri. Ebin Sam S,** Scientist, received the best paper award at the 10th International Conference on Transportation System Engineering and Management (CTSEM 2024),

organised by Department of Civil Engineering Visvesvaraya National Institute of Technology, VNIT Nagpur, 19th -20th July 2024.

- **Shri. A Jegan Bharath Kumar**, Scientist, awarded the prize for Best Paper in the theme Intelligent Transportation Systems. International Conference on Advances in Materials, Modeling, and Analysis for Sustainable and Resilient Infrastructure (AMMASRI'25) from 9th -11th January 2025, jointly organized by Amrita Vishwa Vidyapeetham, Coimbatore & NIT, Tiruchirappalli.
- **Dr. Vasudevan N, Junior Scientist**; **Dr. Anila Cyril, Junior Scientist**; **Shri. B Anish Kini, Scientist,** Awarded the prize for best paper "*Formulating and prioritizing transit supportive policies to augment metro ridership: an integrated choice and latent variable approach*". 2nd International Conference on Innovations in Infrastructure (ICIIF 2024), organized jointly by the Institute of Technology Research and Management (IITRAM), India and Universite Polytechnique Hauts-de-France (UPHF), France, 15th - 17th November 2024.
- **Dr. Anila Cyril,** Junior Scientist and **Dr.Vasudevan N,** Junior Scientist received the best technical paper award for the paper, *"Performance evaluation of city circular bus routes of Thiruvananthapuram"*. International Conference on Sustainable Infrastructure: Innovations, Opportunities and Challenges (SIIOC 2024), NITK, Surathkal, 30th April 2024 – Ist May 2024.
- **Shri. Tinku Casper D'Silva, Junior Scientist,** received the Young Scientist Award in the Engineering & Technology session at the 31st Swadeshi Science Congress and National Conference on 'Towards Net Zero Emission: Approaches & Strategies' held at ICAR-CIFT Kochi, 7th - 9th November 2024.

- **NATPAC**, won the ESRI India's GIS Day - Celebrate and Win Contest.

INSTITUTIONAL UPDATES

Other NEWS

- Observance of World Environment Day on 5th June 2024.

- Independence Day Celebration at NATPAC on 15th August 2024.

- Dr. Sabu A, Member Secretary, KSCSTE and Dr. K. Rajendran, Director, KSCSTE-Institute for Climate Change Studies (KSCSTE-ICCS), Kottayam visited NATPAC on 26th September 2024 and interacted with the staff of NATPAC.

- Onam Celebrations – on 13th September 2024.

- The International Day of Older Persons was observed on 1st October 2024.

- Sevanavaram was observed in NATPAC from 3rd October to 8th October 2024. Shri. Shiju, Asst. Executive Engineer, L.S.G.D (Suchitwa Mission) delivered a talk on 9th October 2024. The cleaning staff of NATPAC was also honoured.

- IIT Bombay (Indian Institute of Technology Bombay) and KSCSTE-National Transportation Planning and Research Centre (NATPAC) signed a Memorandum of Understanding on 4th October 2024 to collaborate on research in various sectors.

- NATPAC celebrated its 49th Foundation Day, HRIDHYAM 2024 on 6th November 2024 with a series of engaging events. The celebration was inaugurated by Prof. (Dr.) K. P. Sudheer, Ex. Officio Principal Secretary, S&T Department and Executive Vice President, KSCSTE. The event was further graced by the felicitations by Padmashree M.C. Dathan, Former Director, VSSC & Scientific Advisor to the Hon'ble Chief Minister of Kerala, Prof. (Dr.) A. Sabu, Member Secretary, KSCSTE and the Manager, SBI Akkulam Branch, who was the official sponsor of the programme.

  The event featured a memorial lecture in honour of NATPAC's Founding Director, Dr. N. S. Sreenivasan, delivered by Shri. D. Sanyal, Former Executive Director (i/c), NATPAC and Managing Director, CRAPHTS Consultants India Pvt.Ltd., Faridabad.

Following this a panel discussion titled "A look back and a step forward for NATPAC" was conducted. This was moderated by Dr. Chandramohan G, Former DCPC, NATPAC & Former Director, CET- School of Management. Eminent personalities in transportation field including Prof. (Dr.) Tom V. Mathew, IIT Bombay & Chairman, Research Council, NATPAC; Prof. (Dr.) MVLR Anjaneyulu, NIT Calicut & Member, Research Council, NATPAC ; Er. T. Elangovan, Former Director, NATPAC; Prof. (Dr.) Kuncheria P. Isaac, Founder Vice Chancellor, APJAKTU, Kerala; Er. Sandeep K. G., Chief Engineer, LSGD and Shri.Murali L S, Deputy Chief Consultant, KIIFB participated in the panel discussion. The panellists discussed the past achievements of NATPAC and its potential role in shaping the future of transportation planning.

- NATPAC observed Human Rights Day on 10th December 2024.
- NATPAC observed World Energy Conservation Day on 14th December 2024.

- Change of Leadership

  Prof. (Dr.) Samson Mathew, has successfully completed 5 years as Director of NATPAC on 31st December 2024 and returned to his parent institute – NIT Tiruchirapally.

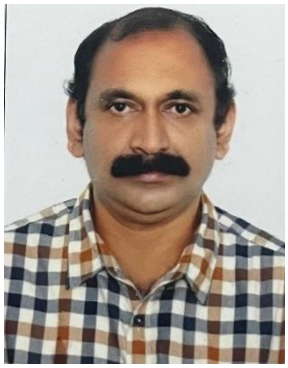
- The Republic Day Celebration at NATPAC on 26th January 2025.

- Scientists of NATPAC participated in the 'KSCSTE Scientists Conclave – 2025' on 15th February 2025 at CWRDM Campus, Kozhikode.

CHANGE OF LEADERSHIP

Prof. (Dr.) Samson Mathew
Relieved from the duties of Director, KSCSTE-NATPAC on 31st December 2024 on completion of 5-year tenure

ACHIEVEMENTS



Shri. Shaheem S, Principal Scientist,
Awarded Ph D in Civil Engineering from NIT Tiruchirappalli on the topic "Integrated Approach for Increasing Public Transport Share in Medium-Size Cities".

HUMAN RESOURCES

STAFF – AS ON 01.04.2025

Sl.No	Name		Designation
Prof. (Dr.) K P Sudheer		-	Director
Scientific Staff			
1.	Dr. Shaheem S	-	Principal Scientist
2.	V. S.Sanjay Kumar	-	Principal Scientist
3.	B. Subin	-	Senior Scientist
4.	P. N. Salini	-	Senior Scientist
5.	M. S. Saran	-	Scientist
6.	Dr. N. M. Sabitha	-	Senior Scientist
7.	K. C. Wilson	-	Senior Scientist
8.	Arun Chandran	-	Senior Scientist
9.	Veena K .S	-	Scientist
10.	Ebin Sam.S	-	Scientist
11.	A. Jegan Bharath Kumar	-	Scientist
12.	R. Chandra Prathap	-	Scientist
13.	Dr. Salini U	-	Scientist
14.	B. Anish Kini	-	Scientist
15.	Dr. Praveen P S	-	Junior Scientist
16.	Dr. Vasudevan N	-	Junior Scientist
17.	Dr. Himasree P R	-	Junior Scientist
18.	Dr. Anila Cyril	-	Junior Scientist
19.	Ashik K Azad	-	Junior Scientist
20.	Shijith P P	-	Junior Scientist
21.	Dr. Goutham Sarang	-	Junior Scientist
22.	Dr. Rameesha T V	-	Junior Scientist
23.	Dr. Sunitha Vijayan	-	Junior Scientist
24.	Ardra S Krishna	-	Junior Scientist
25.	Tinku Casper D'Silva	-	Junior Scientist
Technical Staff			
26.	M.S. Radhakrishnan	-	Technical Officer Grade -4
27.	Dr. Sanjai R. J	-	Technical Officer Grade -2
28.	Shyama C	-	Library Assistant
Administrative Staff			
29.	Suresh Kumar K	-	Registrar
30.	Sheeja Thankappan	-	Deputy Registrar
31.	Reshmy R S	-	Assistant Registrar (Fin)
32.	Bindu S R	-	Assistant Registrar (Admin)
33.	D. Shaju	-	Section Officer Grade-1
34.	Arya S.K	-	Office Assistant
35.	Maya Devi M	-	Office Assistant
36.	Veena S	-	Office Assistant
37.	Muhammed Naserudeen C	-	Office Assistant
38.	Sangeetha T.S	-	Office Assistant
39.	Lajila K.B	-	Confidential Assistant
40.	A. Praveen Kumar	-	Clerical Assistant
41.	G.Ragesh	-	Driver cum Office Attendent
42.	A.Somaraj	-	Driver cum Office Attendent
43.	Surendran Kulangara	-	Driver cum Office Attendent
44.	Shijil P. R.	-	Driver cum Office Attendent
45.	A. Anil Kumar	-	Multi tasking Staff
46.	Athira S.Kumar	-	Multi tasking Staff
47.	Bharat Menon	-	Multi tasking Staff

TECHNICAL DOCUMENTS PREPARED

1. Audit Report on Way Finding Signages at Changampuzha Park Metro Station, for Kochi Metro Rail Ltd. (KMRL).
2. Strategies for reduction of Road Crash Fatalities and Injuries in Kerala aligning with Sustainable Development Goals, Report submitted to Health & Family Welfare Department, Government of Kerala.
3. Road Safety Action Plan for Kerala State (RSAP-K) (2025-2030), Report submitted to Transport Department.
4. Draft preparation of Guidelines for Roadside Advertisements & Hoardings (IRC 46) – Report prepared for H1 Committee, IRC.
5. Response to representations received on the Study on pricing of container trailer services plying at Vallarpadam.
6. Concept note on Disaster Resilient Transport Infrastructure Planning and Management for the State of Kerala.

RESEARCH STUDIES

Sl.No.	Code	Project
1	Plan-433/21-26/24	Synthesis of rich origin –destination matrices using fusion of multiple sparse data sources
2	Plan-440/22-25/24	Study on effect of dynamic speed display boards on driver behaviour at black spots and critical locations
3	Plan-448/22-25/24	Development of parking policy framework for Kerala
4	Plan-449/22-25/24	Investigation on pavement deterioration due to overloading of vehicles
5	Plan-460/23-25/24	Effect of permeability on the performance of bituminous mixes
6	Plan-461/23-26/24	Stabilisation of pavement layers with the use of Reclaimed Asphalt Pavement (RAP) confined in coir geosynthetics
7	Plan-462/23-26/24	Study on road crashes involving vulnerable road users with focus on pedestrian fatal crashes
8	Plan-463/23-25/24	Evaluation of the effectiveness of traffic calming measures in Kerala
9	Plan-464/23-26/24	Problems and Prospects of Inland Water Transportation in Kuttanad Region
10	Plan-465/23-26/24	Safety implications of vehicle maneuvering characteristics on two lane highways with heterogeneous traffic
11	Plan-475/24-25/24	Periodic Updation of Price Indices for different public transport & freight operations
12	Plan-476/24-27/24	Spatio-temporal analysis of traffic crashes in the Kerala State - Level 1: Macroscopic level
13	Plan-477/24-26/24	Assessment of Surrogate safety measures for two-lane road with inclusive motorised two-wheeler lanes

14	Plan-478/24-26/24	Safety evaluation of forced gap behaviour at unsignalised intersections
15	Plan-480/24-26/24	Optimizing urban transit networks using a multi-criteria approach
16	Plan-481/24-26/24	Economic analysis of road accident cost in Kerala
17	Plan-482/24-27/24	Comprehensive developmental change analysis during past two decades in Ernakulam District - Remote sensing and GIS based approach
18	Plan-483/24-26/24	Development of policy interventions for the efficient and sustainable freight distribution through Cochin Port
19	Plan-484/24-26/24	Effect of seawater on the rheological characteristics of bituminous binders
20	Plan-485/24-27/24	Role of palm oil fuel ash on stabilizing Kaolinite-Rich Lateritic Soil
21	Plan-486/24-26/24	Laboratory assessment of warm mix asphalt using natural and commercial additives
22	Plan-487/24-27/24	Performance assessment of selected cement treated roads in Kerala
23	Plan-488/24-27/24	Precast HFRHPC slab panels for pavements, bridge decks and slab culverts
24	Plan-489/24-27/24	Performance assessment of HMA by MIST conditioning mechanism
25	Plan-490/24-26/24	Performance evaluation of low volume flexible pavements constructed with non-conventional techniques
26	Plan-491/1	Analysis of Traffic Congestion issue at Pattalapalli – LIC Road, Kozhikode
27	Plan-491/2	Dharmadam and Kannur International Airport
28	Plan-491/3	Feasibility study for installing signal at Chengannur, Alappuzha
29	Plan-491/4	Material Testing for Suitability in Embankment Construction in National Highway Works for 0440 - PIU-CHN-II - NH-66-Kodungallur- Edappally
30	Plan-491/5	Feasibility of using Fiber Reinforced Plastic (FRP) debris in pavements for ICAR- Central Institute of Fisheries Technology
31	Plan-491/6	Evaluation of Traffic Management Measures at Vattiyoorkavu Junction in Thiruvananthapuram City
32	Plan-491/7	Kochi Water Metro

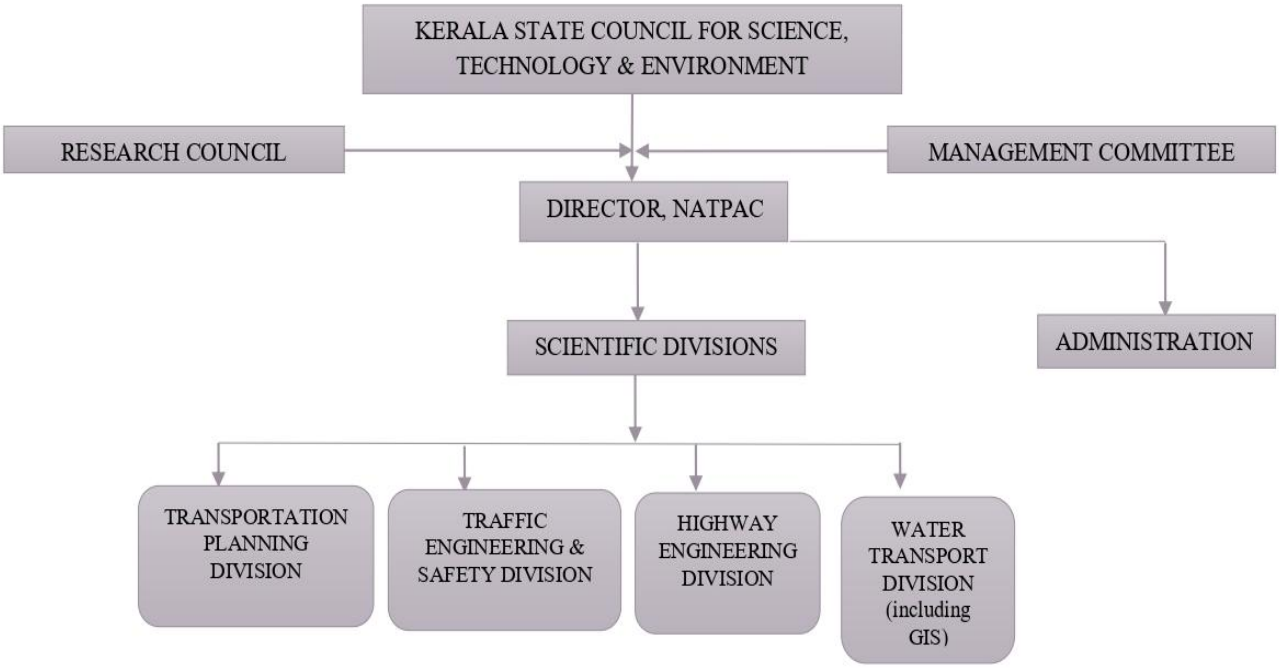
CONSULTANCY/SPONSORED PROJECTS

Sl. No	Code	Project	Sponsored by	Total Project Cost (Rs.in Lakhs excluding GST)
1	C01524	Review and upgradation of traffic signs and markings of Cochin International Airport	Cochin International Airport Limited	8.52
2	C01824	Feasibility Study of High-Speed Corridor between Angamaly-Kundannoor Bypass and Cochin International Airport	Cochin International Airport Limited	7.49
3	C00224	Metro Ridership enhancement study	Kochi Metro Rail Ltd. (KMRL)	5.0
4	C00724	Passenger Satisfaction Study of Kochi Metro Rail Services	Kochi Metro Rail Ltd. (KMRL)	0.89
5	C00624	Feasibility study on elevated corridor from Vyttila to Infopark	Infopark	10.48

6	C00824	Traffic Impact Study for proposed Lulu Mall at Mankavu on mini bypass, Calicut city	M/s. LuLu Convention Center Calicut (Pvt) Ltd.	6.99
7	C01222	Study on Revision of Fares for Operation of Boat Services in Water Transport Department	State Water Transport Department	2.67
8	C01319	Preparation of DPR for the development of the Inland Waterway between Hosdurg and Bakel	Kerala Waterways and Infrastructures Lt. (KWIL)	46.06
9	C00623	Traffic study for Infopark Ernakulam	Infopark, Kochi	24.45
10	C00723	Traffic Impact study for Vizhinjam International Container Transshipment Seaport	Adani Vizhinjam Port Pvt Limited	14.00
11	C01124	Feasibility Study for Establishing Road Connectivity between the Technopark Phase-I and Phase-III Campuses	Thiruvananthapuram Technopark	3.34
12	C01224	Traffic Management Study for the Intersection in front of the Main Entry of Technopark Phase I Campus	Thiruvananthapuram Technopark	4.46
13	C01324	Assessment of Generated Traffic for the Proposed Developments in Technopark Phase IV Campus (Technocity), Trivandrum	Thiruvananthapuram Technopark	4.75
14	C02124	Traffic Impact Assessment Study for the Proposed Building Construction project within Technopark Phase-3 Campus at Attipra Village, Thiruvananthapuram	M/s Environmental Engineers & Consultants Pvt. Ltd.	5.09
15	C01321/2	Technical Review and Support Services on KIIFB funded project – Perumbavoor	Kerala Infrastructure Investment Fund Board	29.54
16	C01321	Technical Review and Support Services on SPVs for the development of project execution document – 8 roads	Kerala Infrastructure Investment Fund Board	712.60
17	C01321/1	Technical Review and Support Services on KIIFB funded project – Thiruvambady – Pullurampara - Maripuzha Road	Kerala Infrastructure Investment Fund Board	191.98
18	C00722	Preparation of Detailed Project Report for Padinjarethara – Naalam Mile Road Stretch in Wayanad District	Kerala State Transport Project	32.50
19	C00822	Preparation of Geometric Improvement Plan from Chiyyaram to Thalore Bypass Junction in Thrissur District	Public Works Department (Roads)	13.50
20	C00524	Anicode Junction improvement study	Chittur-Tattamangalam Municipality, Palakkad	2.47
21	C00124	Traffic Impact Assessment Study for the Proposed Commercial Complex Project at Ayyanthole Village, Thrissur	LuLu International Shopping Malls Pvt. Ltd.	5.01
22	C01724	Investigation of Observation and Entrance Angles for Traffic Signs on Indian Roadways	Willsmeet – Bansi Office Solutions Pvt.Ltd.	4.1

23	C01024	Traffic Survey and Axle Load Survey on NH-66 between Kodungallur (km. 397.750) and Edapally (km. 423.780)	NHAI	16.08
24	C01022	Preparation of FDR-based PED and technical review of PEDs in transport projects	Kerala Infrastructure Investment Fund Board (KIIFB)	247
25	C01117	Preparation of a Detailed Project Report for the Development of Inland Waterway between Mahe River and Valapattanam River	Kerala Waterways and Infrastructures Lt. (KWIL)	44
26	C00323	Preparation of DPR for Coastal Highway stretches omitted for Port Connectivity Projects in Malappuram, Kannur and AlappuzhaDistrict	Kerala Road Fund Board (KRFB)	105.63
27	C00918	Preparation of Detailed Project Report for the Integrated Development of Coastal Highway with Cycle Track in Thiruvananthapuram, Kollam and Alappuzha District	Kerala Road Fund Board (KRFB)	34.50
28	C01924	Feasibility study for the installation of traffic signals at three locations in Kasaragod district	Kerala Road Safety Authority (KRSA)	2.16
29	C00324	Pavement Design for Kanhangad Municipal Bus Stand Yard	Kanhangad Municipality	1.26
30	C00924	Evaluate the efficacy of the implemented road safety engineering measure and rectification of blackspot in NH744 in Kollam District	PIU – Kollam, NHAI	18
31	C01424	Traffic impact assessment study for the proposed mobility hub at Kollam	Municipal Corporation, Kollam	4
32	C01624	Installation of traffic signal at Thottabhagam junction in Pathanamthitta District	Road Safety Commissioner	0.72
33	C02024	Traffic and transportation study for Harippad and Mavelikkara Town in Alappuzha District	Kerala Institute of Local Administration	15
34	C02224	Soil sample testing from Vellayani lake	Assistant Marine Surveyor, Hydrographic Survey Wing, Azhakulam, Vishinjam	0.72

ORGANISATIONAL STRUCTURE



ANNUAL REPORT 2024-'25

KSCSTE-National Transportation Planning and Research Centre

(An Institution of Kerala State Council for Science, Technology and environment)

K.Karunakaran Transpark , Aakkulam, Thuruvikkal P.O,
Thiruvananthapuram, Pincode: 695011
Phone: 0471-2779200

E-mail: contactus.natpac@kerala.gov.in, Web: www.natpac.kerala.gov.in

KSCSTE-NATPAC Regional Centre, Kozhikode

CWRDM Campus, Kunnamangalam,
Kozhikode, Pincode: 673571
Phone: +91-495-2963795

KSCSTE-NATPAC Regional Centre, Ernakulam

H 3105, 2nd floor, Jawaharlal Nehru International Stadium,Kaloor, Ernakulam, Pincode: 682017
Phone: +91-484-2340040

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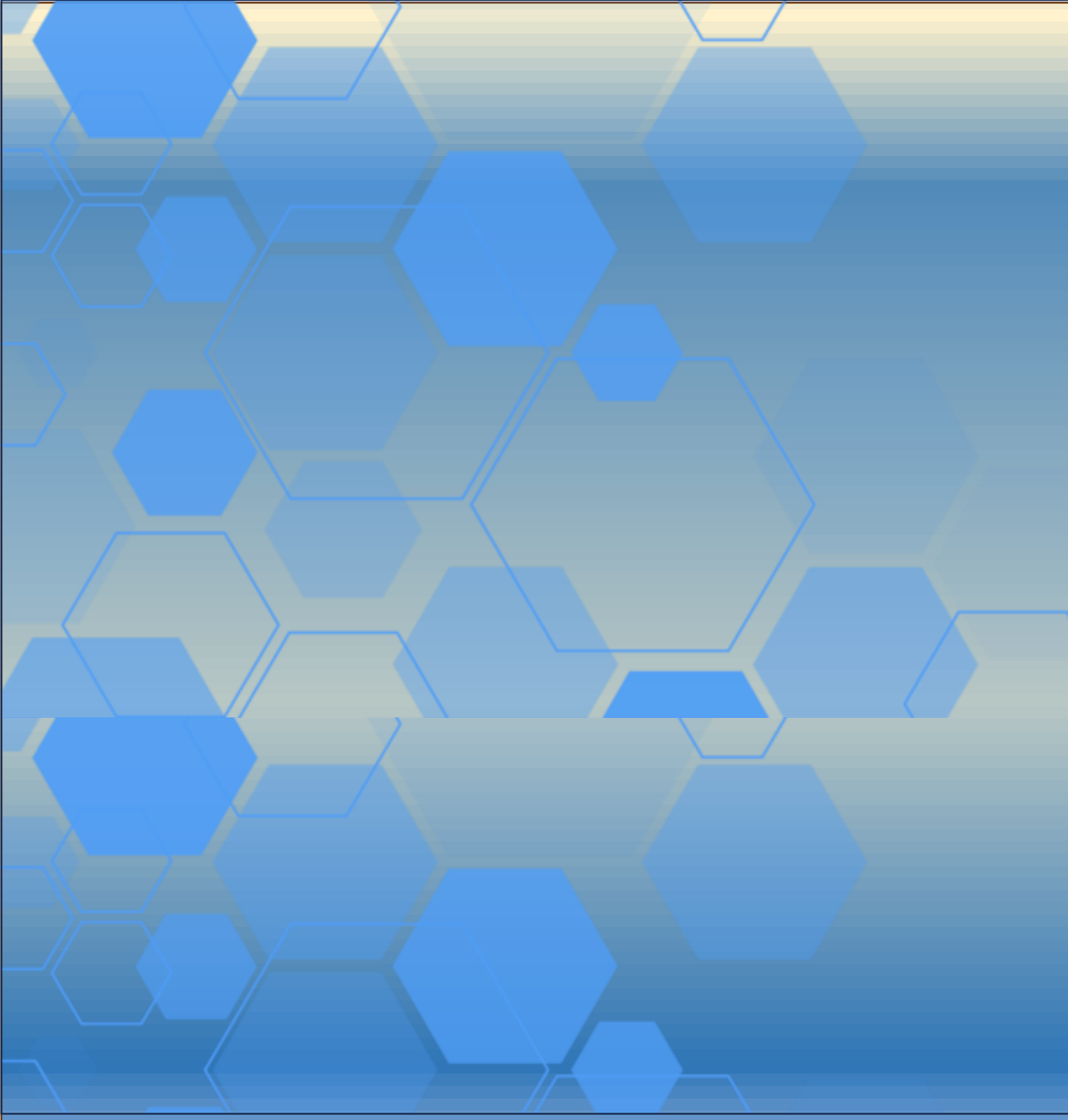
KSCSTE - NATPAC



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K Karunakaran Transpark, Aakkulam, Thuruvikkal P.O, Thiruvananthapuram - 695 011

www.natpac.kerala.gov.in

E-Mail: contactus.natpac@kerala.gov.in

Phone: 0471-2779200