

natpac
KSCSTE - NATPAC

**KSCSTE-National Transportation
Planning and Research Centre (NATPAC)**



autonomous body under the Department of Science and Technology, Government of Kerala, which was formed with the objective of adopting an integrated approach to the research and development activities in Kerala.

The Centre undertakes research and consultancy works in the field of transportation planning, traffic engineering, highway and pavement engineering, road safety, rural roads, inland water transport, tourism planning, transport economics and management, intelligent transportation systems, transport energy and environment, geomatics and other transportation related aspects.

The main campus of NATPAC - with a built-up area of 16,000 sq.ft housing the scientific divisions, laboratories and library - is located in Thiruvananthapuram, southern part of Kerala. It is located on the banks of Aakulam Lake, a lovely backwater destination with a calm and serene atmosphere. NATPAC has two Regional Offices in North and Central Kerala, one functioning in CWRDM campus, Kozhikode and the other one operating in Jawaharlal Nehru International Stadium, Ernakulam.

About NATPAC

KSCSTE - National Transportation Planning and Research Centre (NATPAC) was established by the Government of Kerala in 1976 to develop solutions to the traffic and transportation problems faced by the State. Owing to the contributions and achievements made by the institute, NATPAC was reconstituted as an autonomous R&D Centre under the Department of Science and Technology, Government of Kerala. In November 2002, NATPAC was amalgamated with Kerala State Council for Science, Technology and Environment (KSCSTE), an

The Organisation

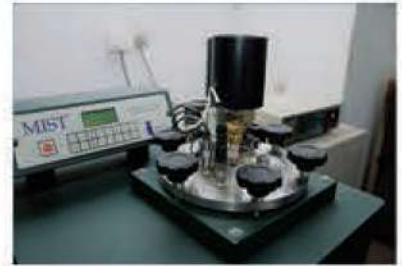
KSCSTE is constituted as an agency for bringing change and development through science and technology in the State. KSCSTE has a State Council headed by the Chief Minister of Kerala and an Executive council chaired by the Executive Vice President.

NATPAC is headed by the Director who is advised on technical matters by the Research Council and on administrative matters by the Management Committee. The Centre has 22 Scientists specialised in different fields of transportation and allied areas supported by Technical Officers and Technical Assistants.

The Scientific and Technical Staff are organized into five scientific divisions, supported by Accounts and Administrative Sections.

The Centre has multidisciplinary expertise in Traffic Engineering, Transport Planning, Public Transport, Highway and Structural Engineering, Pavement Engineering, Geotechnical Engineering, Road Safety, Water Transportation, Geomatics, Transport Economics and Management. The Centre has associations with international and national agencies for carrying out specialized technical projects.

- Identification and prioritization of crash black-spots in Kerala
- Road safety policy
- Parking policy
- Evacuation plan for calamity prone regions
- Promotion of non-motorised transportation
- Sustainability in pavement construction
- Development of GIS database for transportation systems in Kerala
- Mapping of pavement materials in Kerala
- Performance evaluation of Kochi Water Metro
- Development of coastal highway with cycle track
- Development of hill highway
- Development of waterways in Kerala



Scientific Facilities

HIGHWAY & PAVEMENT ENGINEERING

Equipments: Bitumen mixer, Automatic Marshall Compactor, Digital Marshall Test Apparatus, Wheel Rut Shaper & tester, CoreLok machine, Brookfield Viscometer, Moisture Induced Stress Tester (MiST), Dynamic Shear Rheometer (DSR), 5th Wheel Bump Integrator, MERLIN, Benkelman Beam Deflection, Core Cutter, Portable axle, Weighing pad, Skid Resistance

Softwares: OpenRoads, Civil 3D, HDM-4, AutoTURN

GEOTECHNICAL ENGINEERING

Equipments: pH – Conductivity – TDS - Salinity meter, Triaxial Setup, Plastic shredder, DO Meter, Hydraulic Extruder, Buoyancy Balance, Fall Cone Apparatus

TRAFFIC ENGINEERING

Equipments: TiRTL, VBox, Speed Radar Gun, Distometer, Measuring wheel, Handheld GPS, Lux meter

Softwares: Vissim, Visum, CUBE, Vistro, NLogit, SPSS, Amos, MATLAB

TOPOGRAPHIC SURVEY

Equipments: Total Station with accessories, Auto Level with accessories

Softwares: AutoCAD, Auto Plotter

AIR QUALITY

Equipments: Respirable Envirotech APM 460 BL with APM 411, CO Analyser, CO₂ Analyser, CH₄ Analyser, Cup anemometer, NO_x Analyser, Wind Vane, gaZguardTX CO

GEOMATICS

Equipments: Differential GPS with accessories

Softwares: ArcGIS, Erdas Imagine

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

Thrust Areas of Research

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

Major Assignments

- Regional Transportation Planning
- Enhancement of public transport services
- Transport Development Plan as part of Master plan for AMRUT Cities
- Comprehensive mobility plans for major cities
- Feasibility of light rail for Thiruvananthapuram and Kozhikode
- Integrated land use transport model for the major cities in Kerala
- Assessment of annual potential toll collection on National Highways
- Climate resilient transportation infrastructure planning
- ITS applications for enhancing road safety
- Road Safety Audit for roads
- Updation of price indices for different public transport and freight operations
- Black spot mitigation and crash prediction modelling
- Surrogate safety analysis
- Monitoring and evaluation of Safe Corridor Demonstration Projects (SCDP)



Library

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 has a vast collection of books on traffic engineering, transport economics, urban and regional planning, highway engineering, water transport, environment, management, operations research, geography, statistics and allied subjects. In addition, subscriptions to national and international journals are also available.

Major Clients

Government

- ◆ Airports Authority of India
- ◆ Central Public Works Department
- ◆ Cochin International Airport Ltd.
- ◆ Cochin Port Trust
- ◆ Delhi Metro Rail Corporation Ltd.
- ◆ Greater Cochin Development Authority
- ◆ INKEL Ltd.
- ◆ Inland Waterways Authority of India
- ◆ Irrigation Department, Govt. of Kerala
- ◆ Kerala Industrial Infrastructure Development Corporation
- ◆ Kerala Infrastructure Investment Fund Board
- ◆ Kerala Maritime Board
- ◆ Kerala Rail Development Corporation Ltd
- ◆ Kerala Rapid Transit Corporation Ltd.
- ◆ Kerala Road Fund Board
- ◆ Kerala Road Safety Authority
- ◆ Kerala Shipping and Inland Navigation Corporation Ltd.
- ◆ Kerala State Road Transport Corporation
- ◆ Kerala State Rural Roads Development Agency
- ◆ Kerala State Water Transport Department
- ◆ Kerala Tourism Development Corporation
- ◆ Kochi Metro Rail Ltd.
- ◆ Local Self Government Department, Govt. of Kerala
- ◆ Ministry of Road Transport and Highways of India
- ◆ Motor Vehicles Department, Govt. of Kerala
- ◆ National Highways Authority of India
- ◆ Power Grid Corporation of India
- ◆ Public Works Department, Govt. of Kerala
- ◆ Roads and Bridges Development Corporation of Kerala
- ◆ Technopark/ Cyberpark
- ◆ Thiruvananthapuram Development Authority

- ◆ Tourism Department, Govt. of Kerala
- ◆ Tourist Resorts (Kerala) Ltd.
- ◆ Vikram Sarabhai Space Centre

Private

- ◆ 3M India Ltd.
- ◆ Adani Group
- ◆ Asian Development Bank
- ◆ Deloitte
- ◆ Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
- ◆ DP World
- ◆ International Road Federation
- ◆ Lulu International Shopping Malls Pvt Ltd.
- ◆ Maruti Suzuki Foundation
- ◆ Olirum Erodu Foundation
- ◆ Smart City Thiruvananthapuram Ltd.
- ◆ The World Bank
- ◆ Vic Roads

Collaborations

- Indian Institute of Technology Madras
- Indian Institute of Technology Palakkad
- National Institute of Technology Calicut
- National Institute of Technology Surat
- National Institute of Technology Karnataka
- National Institute of Technology Tiruchirappalli
- College of Engineering Trivandrum
- Rajiv Gandhi Institute of Technology, Pampadi
- Kerala State Electronics Development Corporation Limited (KELTRON)
- Kerala University of Digital Sciences, Innovation and Technology
- Centre for Development of Advanced Computing (C-DAC), Thiruvananthapuram
- APJ Abdul Kalam Technological University
- LBS Institute of Technology for Women, Thiruvananthapuram
- Central Road Research Institute, New Delhi

Awards & Recognitions

- ❖ Awarded the National Level Certificate of appreciation from Maruti Suzuki – Times Now Road Safety award in the institution category, 2015.
- ❖ Received “Best Stall” award for KSCSTE from Dr. Harsh Vardhan, Hon. Minister for Science & Technology in connection with India International Science Fair, IISF 2016 at NPL, New Delhi, 2016.
- ❖ Urban Mobility Award for SOFT (Save Our Fellow Traveler) Program organized by Urban Mobility India at Hyderabad, 2017.
- ❖ Two Road safety films produced by NATPAC were screened in the Global Road Safety Film Festival organised by the Laser International Foundation (LIFE), in collaboration with the

UN Road Safety Fund (UNRSF) and the United Nations Economic Commission for Europe (UNECE), 2022.

- ❖ The Ministry of Road Transport and Highways (MoRTH) and Indian Roads Congress (IRC) has recognized KSCSTE-NATPAC as an agency for imparting a 15-day Road Safety Audit certification course to practicing engineers, industry members and students .
- ❖ The Senate of IIT Palakkad has recognized KSCSTE-NATPAC as a ‘Centre for external registration for research degrees’
- ❖ Government of Kerala has entrusted KSCSTE-NATPAC for imparting three days ‘Training course for drivers of vehicles carrying dangerous and hazardous goods’

Outreach

KSCSTE-NATPAC has prepared Road Safety Training Materials which includes Books, Booklets, Pamphlets, Calendars, Leaflets, Stickers, display boards, badges etc. which are available in English as well as Malayalam. KSCSTE-NATPAC has developed a Safesavari mobile app for dissemination of road safety. The Centre has been implementing training programmes in traffic safety aimed at capacity building as well as spreading awareness striving to develop a safety systems approach to keep our roads safe. The trainings include:

- * Road Safety Youth Leadership Programme (RSYLP)
- * Road Safety Training Programme to general public, school bus drivers, driving school instructors, emergency drivers

- * Safe Road to School Programmes (SRS)
- * Safe Community Programmes at Panchayath Level (SCP)
- * Training to Government Department Officials: Police, MVD, PWD, NHAI

KSCSTE-NATPAC offers guidance to students for their project/thesis/ internships from institutions all over India as part of their B.Tech/M.Tech/M.Sc programmes. Scientists from the Centre are invited by the media for discussions on relevant topics and are regularly invited for delivering lectures and presentations at academic institutions, technical workshops, seminars and symposia.

Head Office:

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