

**1. Name** : Dr. S. Moses Santhakumar

**2. Date of Birth** : 10.01.1958

**3. Designation** : Professor (HAG) of Civil Engineering  
National Institute of Technology, Tiruchirappalli



**4. Academic Performance:**

<b>Institution</b>	<b>Qualification</b>	<b>Year</b>	<b>Specialization</b>
CCM High School, Idaiyangudi	S.S.L.C.	1973	8th rank in State
St. John's College, Palayamkottai	P.U.C.	1974	1st rank in College
Indian Institute of Technology, Madras	B.Tech.	1979	Civil Engineering
Indian Institute of Technology, Madras	M.Tech.	1981	Transportation Engineering
Indian Institute of Technology, Madras	Ph.D.	1988	Transportation Engineering

**5. Employment Record :**

<b>Institution</b>	<b>Designation</b>	<b>Period</b>
National Institute of Technology, Tiruchirappalli	Professor (HAG)	Apr. 19 – till date
National Institute of Technology, Tiruchirappalli	Professor	Feb. 99 – Apr. 19
Regional Engineering College, Tiruchirappalli	Assistant Professor	May 92 – Feb. 99
Regional Engineering College, Tiruchirappalli	Lecturer	Sep. 88 – May 92
Indian Institute of Technology, Madras	Senior Project Officer	Sep. 86 – Sep. 88
Indian Institute of Technology, Madras	Project Associate	Jan. 84 – Jan. 86

**6. Subjects Taught :**

One of the very few to obtain all three degrees from IIT Madras, have served NIT Trichy for more than three decades. Been teaching Transportation Eng, Traffic Safety, Highway Traffic Analysis and Design, Traffic Flow Theory, Computer Simulation, Intelligent Transportation Systems and Computer Aided Design to B. Tech. (Civil) and M. Tech. (Transportation Engineering & Management) students.

## 7. Research Interests :

<b>Intelligent Transportation Systems</b>	Developed ITS/GIS for Incident Management, Emergency Response, monitoring of rural development schemes, PMGSY roads, traveller information and vehicle tracking using GPS.
<b>Network Analysis</b>	Developed computer packages for assignment of traffic on city road networks. Analyzed the Madras network to predict impacts.
<b>Computer Simulation</b>	Urban bus routes, traffic signals, pedestrian crossings, bus terminals, narrow bridges, bus stops and spares inventory.
<b>Traffic Flow Theory</b>	Speed - flow analysis using TIRTL (Transportable Infra Red Traffic Logger), lateral positioning of vehicles and impact of heavy vehicles
<b>Traffic Safety</b>	Road Safety Audit, Countermeasures and Accident Modification Factors
<b>Expert Systems</b>	Bus and crew scheduling, tyre management and accident investigations

## 8. Computer Software :

- Thorough knowledge of Visual BASIC, C, FORTRAN, GPSS and LISP Languages
- Developed more than 10 Software Packages in Transportation, GIS & Education
- **Magnum Opus** - RAPID (Rural Action Plan Integrated Database), a GIS software developed using Visual BASIC and MS Access, being used by the Collectorates of all districts to monitor the progress of Rural Development projects
- Been assisting the Directorate of Rural Development and DRDAs in *e-Governance*
- Ever since my stint as Controller of Examinations, been actively involved in academic reforms. Was instrumental in developing the relative grading system. Using Visual BASIC, developed and implemented GRADER, a Relative Grading software used by NITT faculty.
- Also developed SUPER – Software for Under-graduate Processing of Examination Results using Visual BASIC during the above period.
- Developed a GIS entitled OPERA – On-line Processing of Electoral Results and Analysis in Visual BASIC for the Election Commission. OPERA compiled election results and printed out standard reports during the Lok Sabha election in Tiruchirappalli Constituency.
- Developed a GIS entitled COSMOS – CORporation Scheme MONitoring System in Visual BASIC for the Coimbatore Corporation
- Developed WASP - Wavedata Acquisition and Signal Processing, a suite of programs in C, to receive wavedata from the DIgital Wave Rider (DIWAR) buoy, perform FFT analysis on the signal, compute the wave energy parameters and display the ocean waves in real time. This was used by the Dept of Ocean Eng, IIT Madras for designing the Wave Energy Device off Vizhinjam, Thiruvananthapuram.
- Developed MIGRAN - Model with Interactive Graphics for Route Assignment on Networks using C to synthesize the traffic flow pattern in a city. This was used by Kirloskar Consultants in one of the earliest Comprehensive Traffic and Transportation Studies (CTTS) in Madras.
- Developed Computer Simulation models in GPSS to estimate the bay requirements at the Madras Metropolitan Bus Terminus for Kirloskar Consultants
- Developed SIGNAL in BASIC to simulate and animate the queuing of vehicles at signals
- Developed SPY - Simulation of Paddy Yield using C to analyze the impact of different irrigation schemes on the harvest of paddy crop

- Developed DAMSEL - DAM Safety against Earthquake Load using C to ensure the stability of the proposed dam if subjected to earthquakes
- Developed SLOPER using C to check the stability of slopes against landslides
- Developed PRIME - Project Information Monitoring and Evaluation - a GIS to monitor urban development projects
- Contributed to the feasibility study on computerization of registration documents for Registration Department, GoTN
- Developed DEALER using C to randomize bridge hands for tournament play
- Developed PHAST - PHarmaceutical Sales Tracking using FoxPro to manage the inventory of pharmaceutical distributors
- Developed WISA - Wholesale Inventory and Sales Analysis using FoxPro to manage the inventory of wholesale distributors

## 9. Sponsored Research Activities :

1. Implemented E-Rickshaws as an alternative to buses / autos inside NITT campus. These are eco-friendly, economical and generate no air and noise pollution.
2. Co-ordinator, State Technical Agency (STA) for scrutiny of Pradhan Mantri Grama Sadak Yojana (PMGSY) Road Projects, NRRDA, GoI. (On-going)
3. Centre of Excellence in Transportation Engineering (CETransE), Department of Higher Education, MHRD, GoI. (Rs. 250 lakhs; On-going)
4. Coir Board Project on 'Evaluation of Pavement Performance of Coir Reinforced Rural Roads in Tamil Nadu'. Study of the Performance of Coir Geotextiles in the sub-base of PMGSY Roads. (Rs. 34.5 lakhs; On-going)
5. Coir Board Project on 'Pavement Performance Studies on Coir Geotextiles Reinforced Rural Roads in Tamilnadu'. Study of usage of Coir Geotextiles in the sub-base of PMGSY Roads. (Rs. 419.87 lakhs; Completed)
6. RBIC Project on 'Pavement Evaluation Studies on the Performance Enhancer RBI-Grade 81'. Study of the Performance Enhancer RBI-Grade 81 manufactured by M/s Maarvel Touchnology Pvt. Ltd. (Rs. 4 lakhs; Completed)
7. MoUD - IITM Project on 'Urban Speed Management using ITS'. Control of excessive speeds on urban arterials by measuring the speeds and displaying them. (Rs. 15 lakhs; Completed)
8. DRD Project on 'On-line Monitoring of Rural Development Schemes'. Developed a GIS entitled RAPID - Rural Action Plan Integrated Database in Visual Basic. RAPID enables the monitoring of projects by Collectors and Project Officers. Project being implemented in the State, District and Block levels. (Completed)
9. MoRTH Project on 'Preparation of State of the Art Report on Facilities for Pedestrians/Physically Challenged Persons/Passengers'. Recommendation of innovative facilities and guidelines to enhance safety on expressways. (Rs. 3.6 lakhs; Completed)
10. MoRTH Project on 'Preparation of State of the Art Report on Road Safety with Emphasis on Non-Motorised Traffic'. Recommendation of innovative facilities and guidelines to enhance safety on expressways. (Rs. 3.6 lakhs; Completed)
11. NRRDA Project on 'Rural Road Pavement Performance Study (RRPPS)'. Three year study of pavement condition of PMGSY Roads. (Rs. 10 lakhs; Completed)
12. NRRDA Project on 'Rural Road Traffic Volume Study in Tamilnadu'. Data collection and analysis of traffic on PMGSY Roads. (Rs. 10 lakhs; Completed)

13. Coir Board Project on 'Coir Geotextiles Reinforced Low Volume Rural Road Pavement Performance Studies in Tamilnadu and Puducherry'. Study of usage of Coir Geotextiles in the pavement of Rural Roads. (Rs. 12.5 lakhs; Completed)
14. MHRD Project on 'GIS-GPS Based Monitoring of Public Transport Vehicles'. Tracking of Corporation trucks using on-line and off-line GPS units. (Rs. 12 lakhs; Completed)
15. MHRD Project on 'Modernization of Transportation Engineering Laboratory'. Purchased and installed latest equipment. (Rs. 30 lakhs; Completed)
16. IIMB Project on 'Household Survey to Assess Rural Transport Infrastructure'. Collection of socio-economic and travel data of rural households. (Rs. 0.3 lakhs; Completed)
17. AICTE Project on 'Multimedia Tools for Teaching of Civil Engineering'. Development of Multimedia-based Teaching Modules for Civil Engineering Education. (Rs. 5 lakhs; Completed)
18. MHRD Project on 'Strengthening of the Transportation Engineering Laboratory' at the Civil Engineering Department, R.E.C., Tiruchirappalli. Purchased and installed equipment including the Marksman 600 Automatic Traffic Data Acquisition System. (Rs. 8 lakhs; Completed)
19. DOD Project on 'Sea Trial of Wave Energy Device' at the Ocean Engineering Centre, I.I.T., Madras. Developed software in BASIC and C entitled WASP - Wavedata Acquisition and Analysis System for on-line Processing. (Completed)
20. Indo-German Project on 'Transportation System Management for Indian Cities' at the Civil Engineering Department, I.I.T., Madras. Developed models for bus transit. (Completed)

#### **10. Consultancy Activities :**

1. Proof-checking of Four-laning of Dindigul – Pollachi section of NH209/83 for NHAI
2. Road Safety Audit of Madurai Ring Road for Highways Department
3. Proof-checking of Four-laning of Karaikudi – Ramnad Section of NH210 for NHAI
4. Road Safety Audit of Walayar – Vadakkancherry Section of NH47 for NHAI
5. Proof-checking of Upgradation of NH234 for NHAI
6. Proof-checking of Upgradation of NH49 Extn for NHAI
7. Proof-checking of Upgradation of Thirumayam – Manamadurai section of NH226 for NHAI
8. Proof-checking of Missing Link in Dhanuskodi Road of NH49 for NHAI
9. Proof-checking of Upgradation of Thanjavur – Pudukkottai section of NH226 for NHAI
10. Road Safety Audit of Thuvakudi – Palpannai Section of NH67 for NHAI
11. Proof-checking of Four-laning of NH210 for NHAI
12. Feasibility Study of Circular Shape Automatic / Robotic Type Multi Level Car Parking at Siruseri, in OMR, Chennai for Mukesh Associates
13. Design of roads and other facilities under the Smart City Mission for Trichy Corporation
14. Independent Engineer Services for 4-laning of Ludhiana to Talwandi Section of NH-95 for NHAI
15. Asphalt Design Mix for the Automotive Test Track works of NATRiP at Oragadam, Chennai for L & T and RITES
16. Concurrent Evaluation of Flood Management Programme in the Kollidam River for WRO, PWD

17. GIS development for the Kerala Road Information Management System for Wilbur Smith Associates
10. Axle Load Spectrum on NH67 for Wilbur Smith Associates
11. Axle Load Spectrum on NH66 for Mukesh Associates
12. Benkelman Beam Deflection studies on SH & MDR for Highways Department
13. MIGRAN - Model with Interactive Graphics for Route Assignment on Networks to synthesize the traffic flow pattern in a city for Kirloskar Consultants
14. PVAM - Private Vehicle Assignment Module to be integrated into the Transportation Planning Package developed by Kirloskar Consultants
15. Computer simulation models to estimate the bay requirements at the Madras Metropolitan Bus Terminus for Kirloskar Consultants
16. Feasibility study on computerization of registration documents for Registration Department, Govt. of Tamil Nadu
17. PRIME - Project Information Monitoring and Evaluation - a GIS developed in Visual Basic to monitor urban development projects for Kirloskar Consultants
18. Design of Cement Concrete Pavements for the Municipal Bus Stands in Tirunelveli, Tiruvarur, Karur, Tiruchirappalli, etc.
19. Bituminous Mix Design for DBM, BC, DAC and SDAC for Highways and Airports
20. Testing of aggregate and soil for RITES and other agencies
21. Testing of bitumen and aggregate for road and railway projects

**11. (a) Number of Publications : 132**

*Indian Journals – 21*

*International Journals – 34*

*Indian Conferences – 52*

*International Conferences – 25*

**(b) List of Publications :**

**In Refereed Indian Journals**

1. **Boarding Time and Stopped Time of City Buses in Madras**, Indian Highways, Vol. 13, No. 10, pp. 28-33, October 1985.
2. **Distribution of Green Time and Red Time at Police-Controlled T-junctions and Mid-block Pedestrian Crossings**, Indian Highways, Vol. 15, No. 6, pp. 18-25, June 1987.
3. **Components of In-Vehicle Travel Time on City Bus Routes**, Journal of the Institution of Engineers (India), Vol. 68, Part CII, pp. 51-53, July 1987.
4. **Performance Evaluation and Design of Signal Settings by Simulation**, Indian Highways, Vol. 19, No. 3, pp. 11-21, March 1991.
5. **Comparative Study of Pedestrian Crossings using Computer Simulation**, Indian Highways - Computer Applications in Highway Engineering, Vol. 19, No. 6, pp. 89-97, June 1991.
6. **Identification of Representative Wave Record from Multiple Wave Records**, Marine Engineering Journal, Institution of Engineers, June 1991.
7. **Wave Data off Trivandrum using an On-line Data Analysis System**, Journal of the Institution of Engineers (India), Vol. 73, Part CV5, pp. 163-167, January 1993.

8. **Expert System for Tyre Management in Public Transport Corporations**, Indian Highways, pp. 17-25, December 1993.
9. **Headway Distribution at Origin of Urban Bus Routes**, Journal of Traffic and Transportation, October 1996.
10. **Applicability of GIS/IVHS/GPS Technology for Indian Conditions**, Journal of Traffic and Transportation, January 1997.
11. **User Perception of the Shuttle Bus Transit System in Madurai**, Indian Highways, July 1998.
12. **Development of Areawide Traffic Control System for Tiruchirappalli**, Journal of Traffic and Transportation, September 1998.
13. **Geographical Information System for Major Roads – A Case Study of Tiruchirappalli**, Indian Highways, pp. 31-38, December 1999.
14. **Geographic Information System for Major Roads**, Indian Journal of Transport Management, Central Institute of Road Transport, Vol. 24, No. 2, pp. 169-176, February 2000.
15. **Optimal Bus Stop Spacing and Location using GIS**, Urban Transport Journal, Institute of Urban Transport (India), Vol. 1, No. 2, pp. 63-78, December 2000.
16. **GIS Based Transportation Information Management System**, Indian Highways, pp. 13-24, July 2002.
17. **Traffic Incident Management System using GIS**, Indian Highways, November 2007.
18. **Feasibility Study of Emergency Vehicle Signal Preemption System for Tiruchirappalli City**, International Journal of Applied Engineering Research, Vol. 10 No. 62, ISSN 0973-4562, 2015.
19. **Simulation Study of Vehicle Queue and Delay Time at Toll Plaza – A Case Study**, STM Journals, pp.1-15, 2015.
20. **Rear End Crashes on National Highways - Serious Threat to Road Safety**, Journal of Development Management and Communication, ISSN 2348-7739, Vol. II, No. 4, October – December 2015.
21. **Evaluation of Lane-Based Traffic Characteristics of Highways Under Mixed Traffic Conditions by Different Methods**, Journal of The Institution of Engineers (India): Series A, Vol. 102 (3), pp. 719-735, <https://doi.org/10.1007/s40030-021-00549-6>, Scopus-Q4, 2021.

#### **In Refereed International Journals**

1. **Simulation Study of Bus Transit**, Journal of Transportation Engineering, American Society of Civil Engineers, Vol. 112, No. 2, pp. 199-211, March 1986.
2. **Transportation Systems Management Options to Improve Urban Bus Route Performance using Computer Simulation**, Transportation Research Board, National Research Council, TRR 1338, pp. 22-27, 1992.
3. **User Compliance at Pedestrian Subways**, Transportation Research Board, National Research Council, August 1992.
4. **Extraction of Small Area Network for Analysis of TSM Options**, Transportation Research Board, National Research Council, September 1998.
5. **Evaluation of Short Term Transportation System Management Measures using GIS**, European Journal of Transportation Research, May 2009.

6. **Simulation Study of Construction Work Zones – A Case Study**, Recent Trends in Civil Engineering & Technology, STM Publications, Vol. 2, No. 2, February 2012.
7. **Impact of Work Zones on Speed Variation during Widening of the Highways – A Case Study**, International Journal of Engineering Science and Technology, Vol. 4, No. 2, pp 546 – 554, February 2012.
8. **Estimation of IRI from PCI in Construction Work Zones**, ACEE International Journal of Civil & Environmental Engineering, 1 (2), 2013.
9. **Feasibility Study of Emergency Vehicle Signal Preemption System for Tiruchirappalli City**, International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 10 No.62, 2015.
10. **Simulation Study of Vehicle Queue and Delay Time at Toll Plaza – A Case Study**, STM Journals, pp.1-15, 2015.
11. **Estimation of Passenger Car Unit and Capacity Using Infra-Red Sensor Data on Multilane Divided Intercity Highways**, Proceedings of the International Conference on Innovative Trends in Civil Engineering for Sustainable Development (ITCSD-2019), National Institute of Technology Warangal, pp. 179-180, September 2019, Taylor and Francis, Scopus, [ISBN: 978-93-89354-46-1](#).
12. **Modeling of Time Headway Distribution on Multilane Divided Intercity Highways Under Mixed Traffic Condition**, Proceedings of the International Conference on Innovative Trends in Civil Engineering for Sustainable Development (ITCSD-2019), National Institute of Technology Warangal, pp. 185-186, September 2019, Taylor and Francis, Scopus, [ISBN: 978-93-89354-46-1](#).
13. **Influence of Platooning of Heavy Transport Vehicles Operation on Traffic Flow Mix on Intercity Highways**, LNCE, 5<sup>th</sup> Conference of Transportation Research Group of India (CTRG-2019), Bhopal, December 2019. Springer, Scopus.
14. **Effect of Two Wheeler Proportion on Passenger Car Unit at Urban Signalised Intersections**, LNCE, 5<sup>th</sup> Conference of Transportation Research Group of India (CTRG-2019), Bhopal, December 2019. Springer, Scopus.
15. **Multivariate Analysis of Freeways Speed and Time Headway under Mixed Traffic Streams**, Proceedings of the 2020 International Conference on COMMunication Systems & NETworkS (COMSNETS-2020), Bengaluru, pp. 116-121, January 2020. ISSN: 2155-2509. DOI: [10.1109/COMSNETS48256.2020.9027497](#), IEEE
16. **Infra-Red Sensor-Based Technology for Collecting Speed and Headway Data on Highways Under Mixed Traffic Conditions**, Proceedings of the 7<sup>th</sup> International Conference on Signal Processing and Integrated Networks (SPIN-2020), Amity University, Noida, pp. 607-611, February 2020. DOI: [10.1109/SPIN48934.2020.9070829](#), IEEE.
17. **Effect of Heavy Transport Vehicles on Speed-Flow Characteristics of Mixed Traffic on Multi Lane Divided Intercity Highways**, Resilience and Sustainable Transportation Systems, 13<sup>th</sup> Asia Pacific Transportation Development Conference, Shanghai, China, pp. 176-185, June 2020, DOI: [10.1061/9780784482902.021](#), ASCE.
18. **Analysis of Two-Wheeler Characteristics at Signalised Intersection under Mixed Traffic Conditions: A Case Study of Tiruchirappalli City**, Resilience and Sustainable Transportation Systems, 13<sup>th</sup> Asia Pacific Transportation Development Conference, Shanghai, China, pp. 176-185, June 2020, DOI: [10.1061/9780784482902.005](#), ASCE.
19. **Assessment of the Electric Rickshaws' Operation for a Sustainable Ecosystem**, Innovations in Sustainable Energy and Technology, ASST, 1<sup>st</sup> National Conference on Innovations in Sustainable Energy and Technology (ISETIndia) 2020, Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Bangalore, December 2020, Springer, Scopus.

20. **Investigating the Characteristics and Choice of Electric Scooter Users: A Case Study of Tiruchirappalli City**, Innovations in Sustainable Energy and Technology, ASST, 1<sup>st</sup> National Conference on Innovations in Sustainable Energy and Technology (ISETIndia) 2020, Rajiv Gandhi Institute of Petroleum Technology (RGPT), Bangalore, December 2020, Springer, Scopus.
21. **Empirical Analysis of Impact of Multi-class Commercial Vehicles on Multi-lane Highway Traffic Characteristics Under Mixed Traffic Conditions**, International Journal of Transportation Science and Technology (IJTST), <https://doi.org/10.1016/j.ijst.2021.07.005>, Scopus-Q1, 2021.
22. **Analysis of Driver Behavior in Vehicle Following and Lane Changing Parameters on Urban Mid-block Section**, Information Technology in Industry, ESCI, ISSN: 2204-0595, Volume 9, No. 2, 2021.
23. **A Study on Characteristics of Vehicular Lateral Position on Rural Highways**, Proceedings of the International Conference on Community Based Research and Innovations in Civil Engineering (CBRICE-2021), Manipal University, Jaipur, March 2021, Earth and Environmental Science, IoP Publications, Scopus.
24. **Analysis of Vehicle-2-Vehicle Time Headway Distributions Under Mixed Traffic Environment**, Proceedings of the 1st International Conference on Emerging Research and Innovations in Civil Engineering (ERICE-2021), D.G.G.E.C, Surat, May 2021, ISBN : 978-93-54733-18-5.
25. **Analysis of Traffic Flow Characteristics Based on Area-Occupancy Concept on Urban Arterial Roads under Heterogeneous Traffic Scenario – A Case Study of Tiruchirappalli City**, In: Y. A. Mehta et al. (eds.), Advances in Water Resources and Transportation Engineering, Lecture Notes in Civil Engineering, vol. 149. pp. 69-84, June 2021, Springer Nature, Singapore, [https://doi.org/10.1007/978-981-16-1303-6\\_6](https://doi.org/10.1007/978-981-16-1303-6_6), Springer, Scopus.
26. **Driver Behavior and Safety Analysis in Context of Weak Lane Discipline at Urban Mid-block Section**, Turkish Journal of Computer and Mathematics Education, Scopus Indexed, ISSN: 1309-4653, Volume 12, No 8, 2021.
27. **Platoon-Based Impact Assessment of Heavy-Duty Vehicles on Traffic Stream Characteristics of Highway Lanes Under Mixed Traffic Environment**, International Journal of Intelligent Transportation Systems Research, Scopus-Q1, 2021, Accepted.
28. **Evaluation of Driver Behavior and Safety at Urban Mid-Block Sections Under Mixed Traffic Conditions**, Materials Today Proceedings, Elsevier Journal, Paper ID: MATPR\_26734, ISSN: 2214-7853, 2021, Accepted.
29. **Effect of Mixed Traffic Platooning by Commercial Vehicle Types on Traffic Stream Characteristics of Highways**, Periodica Polytechnica Transportation Engineering, Scopus-Q2, 2021, Under review.
30. **Assessing the Impacts of Heavy Vehicles on Traffic Characteristics of Highways under Mixed Traffic Platooning Conditions**, European Transport \ Trasporti Europei, Scopus-Q4, 2021, Under review.
31. **Lane-based Impact Assessment of Heavy-Duty Vehicles on Mixed Traffic Flow Characteristics of Highway**, Transportation Letters. Science Citation Indexed (IF =1.84), Under review.
32. **Study on Efficiency of Existing Urban Road Space in Trichy City**, Case Studies on Transport Policy, Elsevier (Decision in Process).
33. **Multivariate Analysis of Mixed Traffic Flow Characteristics of Multi-Lane Highway Facility Using Infra-Red Sensor-Based Traffic Data**, Journal of Traffic and Transportation Engineering (JTTE-Elsevier). Scopus Indexed, Under review.



34. **Application of Infra-Red Sensor Technique to Collect Lane-Based Traffic Characteristics of Highways and its Analysis**, Springer Nature Applied Sciences. Emerging Science Citation Indexed, Under review.

#### **At National Conferences**

1. **Prediction of Impact of Water Stress on Yield of Paddy using Computer Simulation**, National Seminar on Use of Computers in Hydrology and Water Resources, Central Water Commission, New Delhi, Proceedings, pp. 3:16-25, December 1991.
2. **Prediction of Delays at Narrow Bridges using Computer Simulation**, National Seminar on Advances in Transportation Systems, I I T, Madras, Proceedings, pp. B13.1-5, March 1992.
3. **Optimisation of Inventory Control of Public Transport Spares using Computer Simulation**, National Seminar on Advances in Transportation Systems, I I T, Madras, Proceedings, pp. B7.1-5, March 1992.
4. **Investigation on Thick Lift Construction and Design of Large Aggregate Mixes**, Seminar on Bituminous Roads Design and Construction Aspects, Indian Roads Congress, New Delhi, August 1994.
5. **Applicability of GIS in Highway and Transportation Engineering**, National Seminar on GIS and Geological Remote Sensing, Bharathidasan University, Tiruchirappalli, February 1997.
6. **A Geographical Information System for the Highways around Tiruchirappalli**, National Seminar on Trends and Techniques in Transportation, R E C, Warangal, August 1997.
7. **Application of GIS to PMGSY Roads**, National Conference on Applications of GIS for Rural Development, TTTI, Chennai, December 11-12, 2003.
8. **Vehicle Tracking using GPS - A Case Study of Two Wheeler Tracking in NIT Tiruchirappalli Campus**, National Conference on Application of GIS and GPS in Civil Engineering, pp 138-147, Jaya Engineering College, Chennai, July 03, 2004.
9. **Signal Timing Optimisation for Urban Arterials in Tiruchirappalli City**, National Conference on Advances in Road Transportation (ART-2005), pp 274-286, National Institute of Technology, Rourkela, Orissa, February 12-13, 2005.
10. **Free Speeds of Vehicles on NH-45 and NH-67**, National Conference on Advances in Road Transportation (ART-2005), pp 287-299, National Institute of Technology, Rourkela, Orissa, February 12-13, 2005.
11. **GIS-GPS Based Monitoring of Water Supply Trucks of Tiruchirappalli Corporation**, National Conference on Applications of Information and Communication Technologies in Urban Infrastructure Planning and Management, Jaya Engineering College, Chennai, March 19, 2005.
12. **Influence of Fly Ash, WMA on Properties of Self Compacting Concrete**, Second National Conference on Advances in Materials and Mechanics of Concrete Structures, IITM, Chennai, August 12-13, 2005.
13. **Applications of Geographical Information Systems in the Transportation Sector**, National Conference on GIS, GPS and RS Applications in Transportation Planning and Management, St. Peter's Engineering College, Chennai, November 21-22, 2006.

14. **Pavement Management System for Rural Roads**, National Conference on GIS, GPS and RS Applications in Transportation Planning and Management, pp 122-132, St. Peter's Engineering College, Chennai, November 21-22, 2006.
15. **Application of GPS in Study of Highway Geometrics**, National Conference on GIS, GPS and RS Applications in Transportation Planning and Management, pp 151-159, St. Peter's Engineering College, Chennai, November 21-22, 2006.
16. **Studies on Polymer Modified Bituminous Mixes**, National Seminar on Roads 2007, pp 172-178, Institution Engineers (India), Belgaum, March 1-2, 2007.
17. **Vehicle Tracking – Principles and Applications**, Workshop on Vehicle Tracking using GPS and GIS, pp 1-17, IRTT, Erode, March 6, 2007.
18. **Travel Characteristics of Tamil Nadu Rural Population**, National Conference on Earthquake and Transportation Engineering, pp 144-153, Sona College of Technology, Salem, March 22-23, 2007.
19. **Impact of PMGSY on Travel Characteristics of Tamil Nadu Rural Population**, National Conference on Rural Roads, Ministry of Rural Development, New Delhi, May 22-24, 2007.
20. **Intelligent Transportation System Applications in Road Safety – A Case Study of Tiruchirappalli City**, National Conference on Application of GIS in Civil Engineering, pp 15–24, Karunya University, Coimbatore, February 16, 2008.
21. **GIS Based Analysis of PMGSY Road Network of Tamil Nadu**, National Conference on Application of GIS in Civil Engineering, pp 173-191, Karunya University, Coimbatore, February 16, 2008.
22. **Effect of Temperature Differential on Warping Stresses in Rigid Pavements**, Proceedings of Symposium on Research in Civil Engineering organized by Indian Institute of Technology Madras, pp 191-192, March 5-6, 2009.
23. **Speed Variation in the Construction Work Zone**, Proceedings of Symposium on Research in Civil Engineering organized by Indian Institute of Technology Madras, pp 201-202, March 5-6, 2009.
24. **Dynamic Route Guidance System - A Case Study Of Tiruchirappalli City**, Indo-US Workshop On Emerging Trends In Intelligent Transportation Systems, Indian Institute of Technology Madras, February 11 - 13, 2010.
25. **Traffic Information and Management**, National Conference on Current Trends in Telematics, Sri Ram Engineering College, Chennai, January 27-28, 2011.
26. **Advanced Driver Assistance Systems (Adas): A State of the Art**, National Conference on Current Trends in Telematics, Sri Ram Engineering College, Chennai, January 27-28, 2011.
27. **Road Surface Image Segmentation, Texture Analysis and Classification using Image Processing**, National Conference on Sustainable Urban & Transportation Planning: Issues & Management Strategies (SUTRIMS 11), SVNIT, Surat, July 8-10, 2011.
28. **Urban Speed Management – A Case Study of Tiruchirappalli City**, Research Symposium at Urban Mobility India, New Delhi, November 2011.
29. **Co-ordination of Traffic Signals as an ITS Measure for Urban Arterials**, National Conference on Sustainable Transportation using ITS, pp 88-99, St. Peter's College Engineering and Technology, Chennai, February 16-17, 2012.
30. **Urban Speed Management using ITS**, National Conference on Urban Mobility – Challenges, Solutions and Prospects, IIT Madras, July 13-14, 2012.

31. **Traffic Signal Co-ordination as an ITS Measure for Urban Arterials in Chennai City**, National Conference on Urban Mobility – Challenges, Solutions and Prospects, IIT Madras, July 13-14, 2012.
32. **Speed Detection and Management – ITS Application**, India Geospatial Forum, Hyderabad International Convention Centre, Hyderabad, 22 -24 January 2013.
33. **Simulation of Traffic Flow Around an Urban Roundabout**, First Annual Conference on Innovations and Developments in Civil Engineering, ACIDIC-2014, NITK, Surathkal, 19-20 May 2014.
34. **Simulation of Pedestrian Crossing Behaviour along an Urban Corridor**, First Annual Conference on Innovations and Developments in Civil Engineering, ACIDIC-2014, NITK, Surathkal, 19-20 May 2014.
35. **Spatial Temporal Analysis of Urban Expansion and Population Growth in Trichy City using GIS**, National Conference on Technological Innovations for sustainable infrastructures, NIT Calicut, March 13, 2015.
36. **Feasibility of Monorail for Tiruchirappalli City**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
37. **Simulation Based Performance Evaluation of Urban Roundabout with Signals**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
38. **Analysis of Geometric Features and Traffic Characteristics of Service Roads Using Simulation**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
39. **Analysis and Mitigation of Rear End Collisions on Highways**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
40. **Improvements to Public Transport in Chennai by Integrated Multimodal Transportation System**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
41. **Simulation Study of Vehicle Queue and Delay Time at Toll Plaza**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
42. **GIS Based Quantitative-Spatial Assessment of Existing Road Network in Trichy City Using Statistical Method**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
43. **Accident Analysis and Remedial Measures for Tiruchirappalli City**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
44. **Impact of Emergency Vehicle Signal Preemption on Urban Traffic**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
45. **Co-ordination of Traffic Signal as an ITS Measure for Urban Arterials**, 2<sup>nd</sup> Conference on Transportation Systems Engineering and Management (CTSEM), NIT-Trichy, May 1-2, 2015.
46. **Modeling of Headway for Four-Lane Divided Inter-City Highways**, Sixth Colloquium on Transportation Systems Engineering and Management (CTSEM-2019), Sardar Vallabhbhai National Institute of Technology Surat, June 2019.
47. **Analysis of Vehicle-Type-Specific Time Headway Distributions Under Heterogeneous Traffic Conditions**, New and Effective Innovations, Technologies and Key Challenges

- 2020 (NCCE-NITK-2020), National Institute of Technology Karnataka, Suratkal, January 2020.
48. **Evaluation of Driver Behavior at Urban Mid-block Section**, Sustainable Construction Technologies & Advancements in Civil Engineering, Sri Vishnu Engineering College for Women, India, October 2020.
  49. **Performance Analysis of Signalized Intersections on Arterial Roads under Mixed Traffic Conditions**, 7<sup>th</sup> Colloquium on Transportation Systems Engineering and Management (CTSEM-2020), KSCSTE-NATPAC and CET, December 2020.
  50. **Micro-Simulation Study on the Effect of Motorized Two-Wheelers on Traffic Speed Characteristics**, 7<sup>th</sup> Colloquium on Transportation Systems Engineering and Management (CTSEM-2020), KSCSTE-NATPAC and CET, December 2020.
  51. **Driver Behaviour Analysis at Urban Mid-block Section**, 7<sup>th</sup> Colloquium on Transportation Systems Engineering and Management (CTSEM-2020), KSCSTE-NATPAC and CET, December 2020.
  52. **Analysis of Vehicle Headway Distributions for Passenger Car and Commercial Vehicles Interaction**, 8<sup>th</sup> Colloquium on Transportation Systems Engineering and Management (CTSEM-2021), National Institute of Technology Calicut, August 2021, Accepted.

#### At International Conferences

1. **Decentralisation of Bus Terminus for Congestion Reduction in Madurai City (Tamil Nadu) - A Case Study**, International Conference on New Challenges for Civil Engineers of Developing Countries, JMI, New Delhi, March 1996.
2. **GIS Based Emergency Response System**, International Conference on Sustainable Development in Road Transport, pp I-439-451, New Delhi, November 8-10, 2001.
3. **Vehicle Tracking System - A Case Study of Madurai Ring Road**, International Conference on Sustainable Development in Road Transport, pp I-485-496, New Delhi, November 8-10, 2001.
4. **Transportation System Management for Madurai City Using GIS**, International Conference on GIS – Map India 2003, New Delhi, January 28-31, 2003.
5. **Development of Park & Ride System in Tiruchirappalli City**, International Conference of Transportation Research Group of India, Bangalore, November 2011.
6. **Estimation of IRI from PCI in Construction Work Zones**, Second International Joint Conference on Advances in Engineering and Technology, AET – ACE, Noida, December 20-21, 2011.
7. **Development of GIS based Framework to Plan and Monitor PMGSY Roads**, International Conference on Geospatial Technologies and Applications, Geomatrix '12, IIT Bombay, February 26-29, 2012.
8. **Potential of Coir Fiber in Subgrade Improvement**, 1st International Conference on Natural Fibers, ICNF2013, Guimarães-Portugal, June 9-11, 2013.
9. **Feasibility Study of Emergency Vehicle Signal Preemption System for Tiruchirappalli City**, International Conference on Advances in Civil Engineering Materials and Processes (ICACEMAP), Coimbatore Institute of Technology, Coimbatore, January 7-8, 2015.
10. **Emergency Vehicle Signal Preemption System For Tiruchirappalli City Having Heterogeneous Traffic Condition**, 25th World Road Congress on Roads and Mobility –

Creating New Value from Transport, Paper No. IP735, PIARC, Seoul, Republic of Korea, November 2-6, 2015.

11. **Evaluation of Existing Road Transport Infrastructure in Trichy City using GIS**, GeoSmart India / GeoSmart ASIA 2016, March 1-3, 2016, Greater Noida.
12. **Spatial Distribution of Urban Road Network in Trichy City using Quick-Bird Satellite Image**, International Conference ICSETH-2016 on Sustainable Developments in Science Engineering Technologies and Humanities, March 10-11, 2016.
13. **Traffic Incident Duration and Incident Recovery Time Prediction Model for Tiruchirappalli City**, International Conference on Engineering and Material Sciences 2016 (ICEMS 2016), Paper ID 1-IC-3545, Jaipur National University, March 17-18, 2016.
14. **Safety Analysis for Urban Roads in Tiruchirappalli City**, International Conference on Engineering and Material Sciences 2016 (ICEMS 2016), Paper ID 1-IC-3376, Jaipur National University, March 17-18, 2016.
15. **Field Implementation and Performance of Coir Geotextiles Reinforced Roads**, International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV8), Singapore, July 27-29, 2016.
16. **Non-Lane-Based Microscopic Modelling Under Heterogeneous Traffic Conditions**, 12<sup>th</sup> Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Paper ID 286, IIT Bombay, 19-21 December 2016.
17. **Factors Influencing Traffic Accidents – A Case Study of Tiruchirappalli City**, 12<sup>th</sup> Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), Paper ID 315, IIT Bombay, 19-21 December 2016.
18. **Driver Behaviour Analysis using Trajectory Data at Urban Mid-Block Section for Mixed Traffic Conditions**, International Conference on Innovative Trends in Civil Engineering for Sustainable Development (ITCSD-2019), National Institute of Technology Warangal, September 2019.
19. **Trajectory Data and Driver Behaviour Analysis at Urban Mid-block Section**, 5<sup>th</sup> Conference of Transportation Research Group of India (CTRG-2019), Bhopal, India, December 2019.
20. **Analysis of Traffic Congestion Impacts of Urban Road Network under Indian Condition**, International Conference on Materials Science and Engineering ScTACE 2020, 1006, pp. 1-9, 2020.
21. **Analysis of Time Headway Distributions on Multi-Lane Highways Considering Passenger Car-Heavy Vehicle Interaction**, Proceedings of the 13<sup>th</sup> International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC-2020), Indian Institute of Technology Bombay, December 2020.
22. **Influence of Trucks on the Safety of Passenger Cars on Rural Highways**, Proceedings of the 13<sup>th</sup> International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC-2020), Indian Institute of Technology Bombay, December 2020.
23. **A Comparison of Macroscopic Traffic Stream Models under Non-Lane-Based Heterogenous Highway Traffic**, International Conference on Recent Advances in Civil Engineering (ICRACE), National Institute of Technology Silchar, September 2021, Accepted.
24. **Modeling Traffic Parameters Accounting for Platoon Characteristics on Multi-Lane Highways**, 6<sup>th</sup> Conference of Transportation Research Group of India (CTRG-2021), National Institute of Technology Tiruchirappalli, December 2021, Accepted.

25. **Spatio-temporal Traffic Characteristics Analysis on Multi-Lane Highways Under Varying Traffic Flow and Density Levels**, 6<sup>th</sup> Conference of Transportation Research Group of India (CTRG-2021), National Institute of Technology Tiruchirappalli, December 2021, Accepted.

**12. Theses Guided :**

<i>Ph. D.</i>	<i>P. G.</i>	<i>U. G.</i>
<b>Two theses in GIS and Simulation</b> <b>(Three in progress)</b>	117 theses in Computer Simulation, Expert Systems, Network Analysis, GIS and ITS	41 theses in Computer Aided Design, GIS and ITS

**13. Book Under Preparation :**

Visual Basic for Civil Engineers

Vijay Nicole

**14. List of Short Term Courses Organized :**

- ISTE – AICTE sponsored Winter School on “Advanced Computer Applications in Transportation Engineering (ACATE)” in December 1998.
- NRRDA sponsored three-day Training Programme on PMGSY for the AEs of the Rural Development Department, 17-19 September 2003.
- NRRDA sponsored six-day Training Programme on PMGSY for Assistant Engineers of Rural Development Department, 20-25 September 2004.
- NRRDA sponsored six-day Training Programme on PMGSY for Assistant Engineers of Rural Development Department, 4-9 October 2004.
- NRRDA sponsored six-day Training Programme on PMGSY for Assistant Engineers of Rural Development Department, 25-30 October 2004.
- NRRDA sponsored six-day Training Programme on PMGSY for Assistant Engineers of Rural Development Department, 1-6 November 2004.
- NHAI sponsored Road Safety – Training of Users for Dissemination of Road Safety Manual – Users Workshop (UW5), 17-19 October 2005.
- NHAI sponsored Road Safety – Training of Users for Dissemination of Road Safety Manual – Users Workshop (UW6), 20-22 October 2005.
- TEQIP sponsored One Day Workshop on Design, Construction and Maintenance of Roads, 29<sup>th</sup> October 2007.
- NRRDA sponsored six-day Training Programme on PMGSY for the AEs of the Rural Development Department, 18-23 May 2009.
- NRRDA sponsored three-day Training Programme on PMGSY for the AEs of the Rural Development Department, 23-25 June 2009.
- NRRDA sponsored six-day Training Programme on PMGSY for the AEs of the Rural Development Department, 13-18 July 2009.

- SIRD sponsored Training Programme on Convergence of Pradhan Mantri Gram Sadak Yojana (PMGSY) with other RD Programmes, 1<sup>st</sup> November 2011, Chennai.
- DRD sponsored One-day Workshop on Alternate Technologies for Road Construction for the EEs and AEEs of the Rural Development Department, 7<sup>th</sup> February 2013, Chennai.
- One-day Workshop on PMGSY Guidelines for the AEEs of the Rural Development Department and ADEs of NH, 22<sup>nd</sup> February 2013.
- One-day Refresher Course on Quality Control of PMGSY Roads for State Quality Monitors, 9<sup>th</sup> May 2013.
- One-day Training Programme on Technology Initiatives Under PMGSY (Coir Geotextiles in Rural Road Construction), 7<sup>th</sup> October 2013.
- DRD sponsored One-day Workshop on R&D Technology Initiatives for the EEs and AEEs of the Rural Development Department, 18<sup>th</sup> September 2014, Chennai.
- One-day Workshop on Alternate Technologies and Materials for PMGSY Roads for the EEs and AEEs of the Rural Development Department, 17<sup>th</sup> November 2014.
- National Conference on Transportation Systems Engineering and Management (CTSEM) organized by CETransE, 1-2 May 2015.
- Three – day Workshop on Traffic Simulation Tools organized by CETransE, 1-3 December 2016.
- Three – day Short Term Training Programme on Recent Trends in Pavement Engineering organized by CETransE, 12-14 December 2016.
- Three – day Workshop on Binder Rheology organized by CETransE, 15-17 December 2016.
- Three – day Workshop on Traffic Simulation Tools organized by CETransE, 24-26 August 2017.
- NRIDA sponsored Five-day Training Programme on Basic Training for Newly Inducted Officers in PMGSY for the AEEs and AEs of the Rural Development Department, 23 - 27 October 2017.
- NRIDA sponsored Three-day Training Programme on DPR Preparation for the AEEs and AEs of the Rural Development Department, 13 - 15 November 2017.

#### **15. List of Short Term Courses Attended :**

- National conference on GIS, GPS and RS Applications in Transportation Planning and Management, St. Peter's College of Engineering, Chennai, 21 – 22, November 2006.
- Workshop on Vehicle Tracking using GPS and GIS, IRTT, Erode, Mar 6, 2007.
- National Conference on Earthquake and Transportation Engineering, Sona College of Technology, Salem, Mar 22-23, 2007.
- National Conference and Exposition of Rural Roads, Vigyan Bhawan, New Delhi, 22-24 May 2007.
- TEQIP workshop on the Seven Habits of highly effective people at Munnar, Kerala during Oct 2 – 4, 2008.

- National Conference on “TREnds and Advances in Transportation Engineering (TREAT-2010)” organized by Bangalore University on 10-11 March 2010.
- Regional Awareness Conference on Indian Water Works Association (IWWA), Chennai Water Convention 2011 conducted at Tiruchirappalli on 17. 07. 2010.
- Workshop on “Urban Transport Challenges and Solutions” organized by IITM, Chennai on 13<sup>th</sup> Aug 2010.
- National Conference on “Urban Mobility - Challenges, Solutions and Prospects” organized by IITM, Chennai on 13-14 July 2012.
- Regional Review Meeting under PMGSY, Bangalore on 4 January 2013.
- Workshop on “Using Science and Data in Road Safety Management” organized by the Centre of Excellence in Urban Transport, Department of Civil Engineering, IITM, Chennai on 15-16 February 2013.
- Workshop on “Construction of Concrete Roads and Overlays” organized by the Department of Civil Engineering, IITM, Chennai on 23<sup>rd</sup> September 2013.
- Workshop on “Intelligent Transportation Systems”, organised by the Department of Civil Engineering, IITM, Chennai on 9-10 December 2013.
- Workshop on “Non-conventional Materials and Technologies” under PMGSY, IIT Bhubaneshwar on 22-24 August 2014.
- Regional Review Meeting under PMGSY, Hyderabad on 29 October 2014.
- PMGSY Workshop on “Alternate Technologies and Materials” organized by the Department of Civil Engineering, NIT, Warangal on 30 October 2014.
- Regional Review Meeting under PMGSY, Bangalore on 30 June 2015.
- Regional Review Meeting under PMGSY, Bangalore on 19 July 2016.
- One Day Workshop on “Urban Transport Management (UTM-2017)”, organised by the Association of Bangalore University Highway Engineers’ Alumnus (ABUHEA), Bangalore on 11 March 2017.

#### 16. List of Expert Lectures Delivered :

- **Intelligent Transportation Systems** at the Institution of Engineers (India), Trichy, 06.05.2008.
- **Relative Grading** in the Board of Studies Meeting, Bharathidasan Institute of Management, Trichy, 12.05.2008.
- **Relative Grading** in the Meeting of Directors and HoDs, Karunya University, Coimbatore, 21.07.2008.
- **Road Safety - An Engineering Perspective** in the Inauguration of Civil Engineering Association, Karunya University, Coimbatore, 22.07.2008.
- **Intelligent Transportation Systems** in the National Seminar, SASTRA, Thanjavur, 26.09.2008.



- **Intelligent Transportation Systems (ITS)** in the Advanced Training Programme on Application of Geomatics in Urban Transportation Planning and Management, St.Peters University, Chennai, 27.10.2008.
- **Advanced Public Transportation Systems (APTS)** in the Advanced Training Programme on Application of Geomatics in Urban Transportation Planning and Management, St.Peters University, Chennai, 27.10.2008.
- **Research – Is it necessary for a Teacher?** in the Inauguration of ISTE Chapter, Karunya University, Coimbatore, 9.12.2008.
- **Road Safety Engineering Measures** in the Training Programme on Road Safety Audit for the Engineers of the Tamilnadu Highways Department, organized by the Tamil Nadu Road Sector Project at Trichy, 23.04.2010.
- **Project Management** in the Training Programme on Design, Construction and Maintenance of Bridges for the Engineers of Rural Development, National Institute of Technology, Tiruchirappalli, May 31 – June 5, 2010.
- **Road Safety Engineering Measures** in the Training Programme on Road Safety Audit for the Engineers of the Tamilnadu Highways Department, organized by the Tamil Nadu Road Sector Project at Tirunelveli, 04.06.2010.
- **Project Management** in the Training Programme on Design, Construction and Maintenance of Bridges for the Engineers of Rural Development, National Institute of Technology, Tiruchirappalli, June 21 – June 26, 2010.
- **Project Management** in the Training Programme on Design, Construction and Maintenance of Bridges for the Engineers of Rural Development, National Institute of Technology, Tiruchirappalli, June 28 – July 03, 2010.
- **ITS Applications in Road Safety** in the Workshop on Innovative Techniques in Road Safety Management, Sri Ram Engineering College, Chennai, July 28-29, 2010.
- **Intelligent Transportation Systems** in the Inauguration of Civil Engineering Association, PRIST University, Thanjavur, 29.08.2010.
- **Advances in Civil Engineering** at the Civil Engineering Association, M.A.M. College of Engineering & Technology, Trichy, 14.07.2011.
- **Recent Advances in Civil Engineering** in the Inauguration of Civil Engineering Association, Roovers College Engineering and Technology, Perambalur, 09.02.2012.
- **Applications of ITS under Indian Conditions** in the National Conference on Sustainable Transportation using ITS (STUITS), St. Peter's College Engineering and Technology, Chennai, 17.02.2012.
- **Road Safety with Emphasis on Non-Motorised Traffic** in the 67<sup>th</sup> Meeting of the Highway Research Board, 73<sup>rd</sup> Annual Session of the Indian Roads Congress, Coimbatore, 08.01.2013.
- **Keynote Address** in the National Conference on Latest Advances in Civil Engineering – LACE 13, SNS College of Engineering and Technology, Coimbatore, 10.04.2013.
- **Intelligent Transportation Infrastructure** in the TEQIP Workshop on Transportation Infrastructure Planning – Latest Technologies, NITT, 21.11.2013.

- **Intelligent Transportation Infrastructure** in the TEQIP sponsored Faculty Development Program on Innovative Practices in Highway Design, Construction, Maintenance and Safety, Thiagarajar College of Engineering, Madurai, 20.02.2014.
- **Intelligent Transportation Systems** in the TEQIP sponsored National Workshop on Recent Developments in Transportation Engg., Coimbatore Institute of Technology, Coimbatore, 07.03.2014.
- **Advances in Civil Engineering** at the Francis Xavier Engineering College, Tirunelveli, 14.07.2014.
- **Intelligent Transportation Systems** in the Inauguration of Civil Engineering Association, Rovers College Engineering and Technology, Perambalur, 27.08.2014.
- **Recent Advances in Civil Engineering** in the Inauguration of Civil Engineering Association, Mt. Zion College Engineering and Technology, Pudukkottai, 28.08.2014.
- **Intelligent Transportation Systems** in the Inauguration of National Conference, Ramakrishna College Engineering and Technology, Trichy, 10.03.2015.
- **Recent Advances in Civil Engineering** in the Department Day Function of Civil Engineering, Shivani Engineering College, Trichy, 31.03.2015.
- **Intelligent Transportation Systems** in the Inauguration of National Conference, SNS College of Engineering and Technology, Coimbatore, 23.07.2015.
- **Essentials of Research** in the Inauguration of the PhD Programme, Periyar Maniammai University, Thanjavur, 28.11.2015.
- **Intelligent Transportation Systems** in the AICTE QIP Course on Latest Technologies and Challenges in Transportation Engineering, organized by Coimbatore Institute of Technology, Coimbatore, 25.04.2016.
- **Intelligent Transportation Systems** in the Inauguration of International Conference on Recent Developments in Civil and Environmental Engineering – 16 (ICRDCEE 2016), Alagappa Chettiar College of Engineering and Technology, Karaikudi, 24.10.2016.
- **Urban Mobility** in the Annual Seminar on Urban Development - Traversing towards Sustainability, Madras School of Social Work, Chennai, 10.03.2017.
- **Intelligent Transportation Systems** in the National Seminar on Transportation System Analysis and Temporal Pattern Recognition Studies, NSN College of Engineering and Technology, Karur, 30.03.2017.
- **Green Transportation** in the International Conference on Environmental Management and Green Technologies (ICEMGT 2017), St. Peter's College Engineering and Technology, Chennai, 27.09.2017.
- **Safety in Construction Zones for Roads and Bridges** in the Training Programme on Road Safety Engineering Measures for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Anna University, Chennai, 16.05.2018.
- **Hazardous Road Locations and Case Studies** in the Training Programme on Road Safety Engineering Measures for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Anna University, Chennai, 16.05.2018.

- **Intelligent Transportation Systems for Road Safety** in the Training Programme on Road Safety for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Trichy, 10.08.2018.
- **Safety Aspects in Construction and Maintenance** in the Training Programme on Road Safety Engineering Measures for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Salem, 08.10.2018.
- **Intelligent Transportation Systems for Road Safety** in the Training Programme on Road Safety for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Salem, 09.10.2018.
- **Safety in Construction Zones and Hazardous Road Locations** in the Training Programme on Road Safety Engineering Measures for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Madurai, 14.11.2018.
- **Intelligent Transportation Systems for Road Safety** in the Training Programme on Road Safety for the Engineers of the Tamilnadu Highways Department, organized by the Asian Institute of Transport Development at Madurai, 14.11.2018.
- **Intelligent Transportation Systems** in the TEQIP FDP on Recent Trends in Transportation Engineering and Town Planning, organized by Coimbatore Institute of Technology, Coimbatore, 08.05.2019.
- **Coir Geotextiles in Rural Road Construction** in the AICTE STTP on Application of Geosynthetics in the Construction Industry, organized by Kumaraguru College of Technology, Coimbatore, 28.01.2020.
- **Smart Transport for Smart Cities** in the International Conference on Development and Management of Smart Cities and Homes, organized by PSG College of Technology, Coimbatore, 28.02.2020.
- **Intelligent Transportation Systems for Disaster Management** in the AICTE STTP on Disaster Mitigation: A shift from Disaster Management towards Disaster Preparedness, organized by Crescent Institute of Science and Technology, Chennai, 03.12.2020.
- **Green Transportation – Keynote Address** in the Seventh Conference on Transportation Systems Engineering and Management (CTSEM 2020), NATPAC, Thiruvananthapuram, 30.12.2020.
- **Alternate Technologies in PMGSY – Keynote Address** in the 75<sup>th</sup> Independence Day Programme on PMGSY organized by NRIDA, GoI, District Collectorate, Trichy, 17.08.2021.

#### 17. Academic Foreign Visits :

- TEQIP Visit to National University of Singapore, Nov 19 - Dec 18, 2007
- Visit to George Mason University, Dec 02 - Jan 19, 2014

#### 18. Membership in Scientific and Professional Societies :

- Fellow of the Institution of Engineers
- Member of Highway Research Board

- Life Member of Indian Roads Congress
- Life Member of ISTE
- Life Member of Institute of Urban Transport
- Life Member of Transport Research Group

#### **19. Administrative Responsibilities :**

- Currently Co-ordinator, State Technical Agency (STA), Pradhan Mantri Grama Sadak Yojana (PMGSY) Scheme, NRIDA, GoI for 21 years
- Currently Head, CETransE - Centre of Excellence in Transportation Engineering, MHRD, GoI for 5 years
- Chairman, Transport Advisory Committee for 3 years
- Co-ordinator of MINT – Media Interface of NIT Trichy for 2 years
- Head of the Department of Civil Eng. for 3 years
- Registrar (i/c), Dean, Students and Dean, IC&SR for 2 years
- Controller of Examinations for 6 years
- Administrator of the M.Tech. (TEM) Course for 15 years
- Computer Laboratory in-charge for 20 years
- Staff Adviser, Civil Engineering Association for 1 year
- Convener, Sports Committee for 2 years
- Editor, RECORD & LANCER - College newsletters for 4 years
- Published the first REC Brochure and recently the first NIT Flyer
- Hostel Warden for 5 years and responsible for Computerisation of Hostel Sector
- Adviser, Staff Recreation Club for 1 year

#### **20. Hobbies :**

- Been an active sportsman from school days specializing in Volleyball. Represented IIT Madras for 13 years in Volleyball, Badminton, Athletics and Bridge. Represented Hostels in Basketball and Chess, in addition to the above.
- An amateur photographer with an eye to capture life's fleeting moments on photos and videos to be cherished later.
- Since sports pushed out music in early life, replaced learning a musical instrument with listening to rock, pop, classical and tamil music. Pink Floyd is my favourite band, with 'Dark Side of the Moon' the best album in any genre. Assembled a library of hundreds of cassettes, vinyl records and now mp3.
- To listen to hi-fi music, became interested in audio electronics. Have constructed tens of amplifiers, cassette decks (including dual capstan, double head), Dolby noise reduction circuits and speaker systems, right from PCB design, etching and soldering of components upto system integration and testing.
- Been a voracious reader from school days, devouring classics ranging from 'Three Musketeers' to 'Ponniyin Selvan'. My favourite book is 'Count of Monte Cristo' by Alexandre Dumas. Among non-fiction, I was much influenced by 'Godel, Escher, Bach: An Eternal Golden Braid' by Douglas Hofstadter. 'A Random Walk in Science' is another classic.