One Week Short-term Training Program
on
STRUCTURAL HEALTH MONITORING: FROM FUNDAMENTALS TO FIELD IMPLEMENTATION

Organised by

Department of Civil Engineering, NIT Tiruchirappalli

in association with

RaSpect Intelligence Inspection Limited, Hongkong

19th- 23rd January 2026 **Seminar hall (Civil), NIT Tiruchirappalli,**

About the Workshop

This workshop, organized by the National Institute of Technology Tiruchirappalli in association with RaSpect Intelligence Inspection Limited, focuses on recent advances in Structural Health Monitoring (SHM)—from fundamentals to field implementation. It highlights modern sensing technologies, artificial intelligence (AI)-driven data analysis methods, and case studies demonstrating real-world monitoring applications. The program emphasizes the integration of fundamental material and structural performance, smart sensing technologies, Internet of Things (IoT), and machine learning techniques for predictive maintenance and performance assessment of structures. Experts from academia and industry will share insights on data interpretation, condition assessment, and sustainable maintenance strategies for diverse infrastructure systems.This workshop aims to provide practical and research-oriented knowledge in AI-enabled SHM and modern infrastructure diagnostics, fostering collaboration and innovation between researchers and practitioners in the field.

Who should attend?

- Structural designers & Consultants
- Project/Construction managers, Builders & Site engineers
- Civil Engineering Faculty & Full-time researchers/Scientists
- Senior UG /PG students, Research scholars & Post-doc fellows

Coordinators

- **Dr. Prabha Mohandoss**
  9894575841, prabham@nitt.edu
- **Dr. Nisha Radhakrishnan**
  9843260869 , nisha@nitt.edu

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Registration link: Click here

Registration Details (Last date to register: Jan 15, 2026)

Professional Category	Registration Fee for one week training program (19-23, Jan 2026) (INR)
Industry professionals / Scientists	6000
Faculty members	3000
Students	2000

Resource persons

Professor Harris, Chair of Civil and Environmental Engineering at the University of Virginia, specializes in large-scale infrastructure systems. His research focuses on condition monitoring, performance assessment, and digital twins using image-based measurements and data analytics. He works on reinforced and prestressed concrete, innovative materials, and non-destructive evaluation.

Prof. Devin K Harris

Prof. Suriya Prakash, Professor in the Department of Civil Engineering at IIT Hyderabad. He heads CASTCON Lab in IITH. His research focuses on the behavior of reinforced concrete columns under combined loading, including torsion. His interests include reinforced and prestressed concrete behavior, FE analysis, retrofitting with advanced materials, and fire resistance of RC elements.

Prof. Suriya Prakash

Prof. K. Baskar, Professor in the Department of Civil Engineering at NIT Tiruchirappalli with expertise in structural and bridge engineering. His research work focuses on steel, composite, and earthquake-resistant structures, offshore and coastal structural engineering/management.

Prof. K. Baskar

Prof. K. Muthukkumaran, Professor in the Department of Civil Engineering at NIT Tiruchirappalli. His research spans geotechnical engineering topics including pile foundations, slope stability, marine geotech, soil–structure interaction, and instrumentation. Recipient of BHARAT VIKAS award and VDGOOD International scientist award

Prof. K. Muthukkumaran

Dr. Nisha Radhakrishnan, Professor in the Department of Civil Engineering at NIT Tiruchirappalli, holds a Ph.D. in GPS and an M.Tech. in Remote Sensing from IIT Bombay. Her research focuses on geospatial applications in urban and transport planning, including land use assessment and GIS-based modeling.

Prof. Nisha Radhakrishnan

Dr. Deepak Kamde, Assistant Professor in the Department of Civil Engineering at IIT Delhi and holds Ph.D. from IIT Madras. His research focuses on Electrochemical assessment, corrosion prevention, electrochemical repair, durability, and service life estimation of reinforced concrete systems.

Dr. Deepak Kamde

Dr. R. Senthil Kumar, Assistant Professor in the Department of Civil Engineering at NIT Tiruchirappalli and holds a Ph.D. from IIT Madras. His research focuses on earthquake-resistant design, steel–concrete composites, fire engineering, and steel structure stability. He also works on developing sustainable construction materials.

Dr. Senthil Kumar R

Dr. Prabha Mohandoss, Assistant Professor in the Department of Civil Engineering at NIT Tiruchirappalli. Her research focuses on the mechanical performance of construction materials, structural assessment of prestressed concrete systems, durability performance of GFRP bars and seawater concrete.

Dr. Prabha Mohandoss

Resource persons

Dr. Mishra holds a PhD from the University of Michigan, Ann Arbor, and has a distinguished career spanning academia and corporate research. A Chartered Engineer and Fellow of the Institution of Engineers (India), he is the Managing Director at RaSpect AI, leading strategic product development, AI-driven inspection technologies, and global expansion. Combining technical depth with visionary leadership, he drives innovation in infrastructure intelligence.

Dr. Dhanada (Kanta) Mishra

Keshav Anand is an accomplished architect and certified BIM professional, currently serving as Senior Manager at RaSpect AI. With expertise in digital construction technologies, he integrates Building Information Modelling (BIM) into project workflows to improve efficiency and coordination. He brings extensive experience in leading multidisciplinary teams and implementing data-driven solutions for complex infrastructure projects.

Keshav Anand

Sayeed Khan

Sayeed Khan leads the Artificial Intelligence team at RaSpect AI, specializing in deep learning, 3D modeling, and cloud-based AI deployment. Skilled in PyTorch and AWS, he develops advanced AI solutions for façade inspection and structural analysis. As a technical lead and team manager, he bridges data science with real-world infrastructure challenges through intelligent automation and scalable machine learning systems.

Shuvam Dash is a PropTech strategist and Business Development Manager with a strong background in construction project management and digital technologies. A certified BIM professional and CPM (2023–25) candidate at RICS SBE, Amity University, he blends technical expertise with strategic insight to advance innovation in the built environment. His work focuses on digital construction workflows and integrating PropTech solutions to enhance efficiency and stakeholder value.

Shuvam Dash

SPONSORSHIP

Category	Amount (INR)	Complementary delegates (Presentation)
Platinum	**1,00,000**	3 (10 mins presentation)
Gold	**75,000**	2 (5 mins presentation)
Silver	**50,000**	1
Well Wisher	**25,000**	-

Brochure in the kit will be included and table display will be provided.

PROGRAMME SCHEDULE

Day 1 (19 January 2026)	
(9:30 AM - 10:00 AM)	Inauguration
Lecture 1.1 (10:00 AM - 11:00 AM)	Primer on sensors, data acquisition: Basics of strain-gauge based transducers, inductance-based displacement gauge, non-contact measurements and fiber-optic gages - Prof. Harris
(11:00 AM - 11:30 AM)	Tea Break
Lecture 1.2 (11:30 AM - 12:30 PM)	Repair solutions to protect the concrete structures - Dr. DK
(12:30 PM - 2:00 PM)	Lunch
Lecture 1.3 (2:00 PM- 3:00 PM)	Important attributes of typical field instrumentation and health monitoring projects - Dr. KMK
Lecture 1.4 (3:00 PM - 4:00 PM)	Maintenance strategies for preventing deterioration of concrete structures - Dr. PM
Day 2 (20 January 2026)	
Lecture 2.1 (10:00 AM - 11:30 AM)	Case Studies of Health Monitoring and Performance Evaluation of Civil Infrastructure-Part 1 - Prof. Devin
(11:00 AM - 11:30 AM)	Tea Break
Lecture 2.2 (11:30 AM - 12:30 PM)	Large Engineering structures Management and Health Monitoring - Prof. Suriya Prakash
(12:30 PM - 2:00 PM)	Lunch
Lecture 2.3 (2:00 PM- 3:00 PM)	Damage Detection and Assessment using Conventional Methods - Prof. Baskar
Lecture 2.4 (3:00 PM - 4:00 PM)	Laboratory demonstration on Instrumentation - Prof. Devin
Day 3 (21 January 2026)	
Lecture 3.1 (10:00 AM - 11:00 AM)	Emerging trends in Structural Health Monitoring - Prof. Devin
(11:00 AM - 11:30 AM)	Tea Break
Lecture 3.2 (11:30 AM - 12:30 PM)	Prompt Engineering , AI transforming data collection and analysis - Team RaSpect
(12:30 PM - 2:00 PM)	Lunch
Lecture 3.3 (2:00 PM- 3:00 PM)	AI Model development demonstration using platforms like Google Colab and YOLO (or similar software) - Team RaSpect
Lecture 3.4 (3:00 PM - 4:00 PM)	Best practices for crafting effective prompts, with hands-on exercises designed to optimize responses based on drone-collected data - Team RaSpect
Lecture 3.4 (3:00 PM - 4:00 PM)	Real-time monitoring of data quality with immediate feedback and troubleshooting support. -Team RaSpect

PROGRAMME SCHEDULE

Day 4 (22 January 2026)	
Lecture 4.1 (10:00 AM - 11:00 AM)	**Overview of Drone Model - its specifications and operational limits and safety measures - Team RaSpect**
(11:00 AM - 11:30 AM)	**Tea Break**
Lecture 4.2 (11:30 AM - 12:30 PM)	**Mechanism, working and working of Drone components with hands-on drone assembly - Team RaSpect**
(12:30 PM - 2:00 PM)	**Lunch**
Lecture 4.3 (2:00 PM- 3:00 PM)	**Guided flight exercises in a controlled environment emphasizing stabilization, maneuvering techniques, and safe flying practices - Team RaSpect**
Day 5 (23 January 2026)	
Lecture 5.1 (10:00 AM - 11:00 AM)	**Introduction to AI Software Platform, Inspectica, including a guided tutorial on its interface and annotation tools - Team RaSpect**
(11:00 AM - 11:30 AM)	**Tea Break**
Lecture 5.2 (11:30 AM - 12:30 PM)	**Simulated exercises focused on marking defects on building facades - Team RaSpect**
(12:30 PM - 2:00 PM)	**Lunch**
Lecture 5.3 (2:00 PM - 3:00 PM)	**Project Creation and setup using INSPECTICA - Team RaSpect**
(3:00 PM - 4:00 PM)	**AI analysis & Report Generation - Team RaSpect**
(4:00 PM - 5:00 PM)	**Valediction**

NIT Tiruchirappalli welcomes you…