

Six Day FDP

on

Smart Materials and AI in Civil Engineering

9th - 14th, Dec, 2024

Organized by

Department of Civil Engineering



Sri Sivasubramaniya Nadar
College of Engineering

Kalavakkam, Chennai – 603 110
Tamilnadu, India.

Convener

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ABOUT THE INSTITUTE

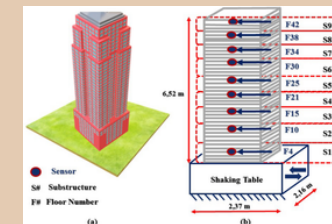
SSN Institutions, established by Shiv Nadar, Founder and Chairman Emeritus, HCL Technologies, stand out as a premier centre of higher learning with a mission of pursuing excellence in education and research. SSN offers a distinctive combination of some of the finest undergraduate, postgraduate and research programs, accomplished faculty, world-class facilities and a residential campus set on a sprawling 230 acres of sylvan surroundings. SSN has been accredited by NAAC with an A+ Grade and all eligible programs have been accredited by NBA. The institution has consistently stood top among engineering colleges affiliated to Anna University, Chennai. The college ranked 46th in Engineering Category in India Rankings 2024 listed by NIRF, MHRD. The college has Wi-Fi connectivity, e-learning enabled classrooms and state of the art laboratories (Visit: <https://www.ssn.edu.in/>)

ABOUT THE DEPARTMENT

The Department of Civil Engineering was started in the academic year 2011-12 with an aim of promoting high quality education in the field of Civil Engineering. The department has well equipped laboratory facilities and highly qualified faculty members having rich experience in teaching and industrial background. The department is aiming to transform itself into a centre of excellence both in academics and research.

ABOUT THE FDP

A comprehensive exploration of smart materials and AI applications in civil engineering is offered in this FDP, where participants engage in learning about the latest innovations in construction technology. The program uniquely blends theoretical insights with practical applications, equipping participants with essential skills for implementing smart solutions in infrastructure projects. Interactive sessions on advanced material properties, structural health monitoring, and AI driven design optimization are featured. Expertise from industry leaders is provided, enhancing participants' ability to leverage technology for improved project efficiency and sustainability. This initiative aims to prepare professionals to effectively integrate smart materials and AI into civil engineering curricula and practices.



COURSE CONTENT

Day 1: Introduction to Smart Materials

- **Session 1:** Overview of smart materials and their significance in civil engineering applications.
- **Session 2:** Classification of smart materials, including piezoelectric, self-sensing materials.

Day 2: AI in Civil Engineering

- **Session 1:** Introduction to artificial intelligence concepts relevant to civil engineering.
- **Session 2:** Applications of AI in project management and construction optimization.

Day 3: Smart Sensors and Monitoring Systems

- **Session 1:** Exploration of smart sensors for structural health monitoring
- **Session 2:** Case studies on the integration of sensors and AI for real-time data analysis.

Day 4: Innovative Material Design

- **Session 1:** Techniques for designing and developing smart materials
- **Session 2:** Workshop on combining material science and AI.

Day 5: Sustainable Engineering Solutions

- **Session 1:** Role of smart materials in promoting sustainability and resilience in infrastructure.
- **Session 2:** AI-driven approaches for optimizing resource use, minimizing waste in construction.

Day 6: Future Directions and Challenges

- **Session 1:** Discussion on emerging trends in AI technologies in civil engineering.
- **Session 2:** To identify challenges and propose innovative solutions for integrating these technologies in the industry.

LEARNING OUTCOME

Enhance Understanding of Smart Materials and AI in Civil Engineering:

- Equip participants with in-depth knowledge and practical skills in utilizing smart materials and artificial intelligence for innovative construction solutions.

Develop Competency in Modern Design and Monitoring Techniques:

- Foster a thorough understanding of advanced material properties, structural health monitoring systems, and AI-driven design optimization to improve project efficiency and sustainability

KEY SPEAKERS

Experts from IIT-Madras, NIT-Trichy, CLRI-Chennai, L&T and Industrial experts

REGISTRATION DETAILS

- The participants to this FDP will be faculty & Ph.D. Scholars from AICTE approved technical institutions. The Registrations are subjected to confirmation of registration fee. Upon Successful completion, the participants will be awarded a certificate.
- Mode: Physical
- Registration fee: Rs. 500/-
- Registration & Payment link: [click here](#)



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