



# Engineering Staff College of India

An Autonomous Organ of The Institution of Engineers (India)

Old Bombay Road, Gachi Bowli, Hyderabad-500 032

(IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018],  
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)



## CIVIL & TRANSPORTATION ENGINEERING DIVISION

Training and Development Programme On

## Smart Materials (Nano Technology) in Civil Engineering

22<sup>nd</sup> – 26<sup>th</sup> January, 2024

**Venue : ESCI, Hyderabad**



**Centre for Promotion of Professional Excellence**

## INTRODUCTION:

Smart materials are those man-made or natural materials that produce desirable properties when there is environmental change around them. They are the materials which have the ability to respond to changes in their condition or the environment to which they are exposed, in a useful and usually repetitive manner. Structures that incorporate smart materials are called as “Smart Structures”. Smart materials are developed which responds to environmental stimuli such as pressure, temperature and wind. Smart materials used in construction technology includes self-healing coatings, smart concrete, shape shifting metals, transparent metals, aerogels etc which will change the construction technology in near future.

The requirement of future point towards materials that are efficient, applicable in multiple fields, have low embodied energy; prove itself cost-effective and environment friendly. The existing materials are failing on one or the other requirement hence it has become imperative to search for new materials to be used in construction. This Training programme will deal with Smart materials used instead of traditional materials without affecting the environment, culture, resources, lifespan, and a variety of other properties and also **Nano Technology** in construction industry. The role of **Artificial Intelligence** and **IoT** in civil engineering construction industry.

## OBJECTIVES:

- To familiarize participants with Usage of Smart Material in construction Technology
- To impart knowledge on Innovative Materials & Smart Materials Classification its specification
- To describe various Advanced Nano Technology in Construction.

## COURSE COVERAGE :

- Overview of Smart Materials in Civil Engineering Construction
- Innovative & Smart Materials Classification its specification
- Sustainability of Civil Structure through the application of Smart Materials
- Advanced Nano Technology in construction Industry
- Structural Health Monitoring Technology using Nano Technology
- Role of AI and IoT in Civil engineering
- 3D Modeling Technology
- Technical Field visit
- Case studies presented by the Participants

## BENEFITS TO THE PARTICIPANTS:

- Participants will know the Structural Health Monitoring Technology using Nano Technology
- Participants will understand 3D Modeling Technology in Construction industry.
- Participants will know the application of AI and IoT in Civil Engineering.
- Case studies are discussed during the training period

## TARGET PARTICIPANTS:

Officers and Engineers from Government departments like Transportation Departments, Roads and Buildings, PWD, Municipal Corporations, Panchayat Raj, Housing Boards, Border Roads organization, Public and Private sector like RITES, organizations involved in Traffic Engineering, Professionals and Consultants etc., working at junior level to senior level will all be benefited by attending this program.

## RESOURCE PERSONS:

Renowned personalities both from Industry / Educational Institutions like IIT's/ NIT's / Research Institutes, Reputed Universities, who are experts in this field, will be involved in providing the training.

## PROGRAMME VENUE, DATES &TIMINGS:

**VENUE** : **Engineering Staff College of India (ESCI)** Campus, Old Bombay Road, Gachi Bowli, Hyderabad- 500 032.

**DATES** : 22<sup>nd</sup> to 26<sup>th</sup> January, 2024

Registration : 09:45hrs.

Session timings : 09:45 – 17:15 hrs with 3 times breaks.

## COURSE DIRECTOR:

**Dr. R Venkat Reddy, Ph.D (Osmania), FIE**  
Head

## COURSE COORDINATOR:

**Ch. Tilak – Faculty**

## COURSE FEES:

**Rs.25,000/- (Rupees Twenty Five Thousand Only) + GST 18%** per participant. Fee includes, Soft copy of course material, course kit and Twin Sharing AC accommodation, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

## DISCOUNTS

- ❖ **Non-Residential Fee-** 10% discount on course fee is allowed for non-residential participants.
- ❖ **Group Discount:** Additional 10% discount for three or more participants, if sponsored by the same organization.

**GST 18%** is to be paid extra over and above the training fee, as training is also brought under the purview of **Service Tax. PAN Card No AAATT3439Q; Service Tax registration No AAATT3439QST008 (under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994). GSTN Number – 36AAATT3439Q1ZV (HSN Number – 999293)**

Programme fee is to be paid in favor of **“IE (I) – Engineering Staff College of India”** in the form of demand draft payable at Hyderabad.

Alternatively the payment may be made by **Electronic Fund Transfer (EFT) to ESCI - SB A/c No. 10007111201 with The SBI, PBB, Rajbhavan Road Branch, Khairatabad, Hyderabad-500004 by NEFT / RTGS / IFSC Code No. SBIN 0004159 – MICR No.500002075.** While using EFT method of payment, please ensure to communicate us your company name, our invoice reference and programme title.

## **REGISTRATION:**

Please send your nominations

**To**  
**The Head**  
**Civil & Transportation Engineering Division**  
Engineering Staff College of India  
Old Bombay Road, Gachi Bowli, Hyderabad - 500 032  
Mobile : **9490011311 / 9492011311**  
Phone: 040-6630 4114, 66304134, 66304115, 66304107  
Email : [cte@escihyd.org](mailto:cte@escihyd.org)

## **CERTIFICATE:**

A certificate of participation will be awarded to each participant.

## **GENERAL INSTRUCTIONS**

- ESCI encourages participants to present case studies from their respective organizations.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200hrs) and one day after conclusion (Check-out 1100hrs) of the program duration. Overstay charges will be applicable as per ESCI rules (subject to availability of accommodation).