Information Brochure

# The Institution of Engineers (India)

*A Century of Service to the Nation*

***All India Seminar***

on

# Smart Materials and Intelligent Structures: Innovations and Applications in Aerospace, Mechanical and Civil Engineering

**17-18 December 2026**

**Organized by**

# The Institution of Engineers (India)

## Coimbatore Local Centre

***under the aegis of***

**Aerospace Engineering Division Board, IEI**

***in association with***

## Department of Aeronautical Engineering

## Hindusthan College of Engineering and Technology

## Coimbatore

**(IM000377-5)**

***Venue: Ganga Hall***
***Hindusthan College of Engineering and Technology***
***Coimbatore - 641032***

## About The Institution of Engineers (India)

The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body that encompasses 15 engineering disciplines and gives engineers a global platform for sharing professional interest. IEI has membership strength of above 2.6 lakh. Established in 1920, with its headquarter Kolkata, IEI has served the engineering fraternity close to a century. During this period of time, IEI has been inextricably linked with the history of modern-day engineering.

In 1935, IEI was incorporated by Royal Charter and remains the only professional body in India which has been accorded this honor. Today, its quest for professional excellence has given it a place of pride in almost every prestigious and relevant organization across the globe. It provides a vast array of technical, professional and supporting services to the Government, Industries, Academia and the Engineering fraternity, operating through its 124 Centres located across the country and 6 overseas chapters. Besides, IEI has bilateral agreements with about 31 international bodies and membership of another 8 international bodies of the developed nations across the globe. Being recognized as a Scientific and Research Organization (SIRO) by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India, IEI promotes the cause of research and development by providing Grant-in-Aid support to undergraduate, post graduate students and PhD Research Scholars of Engineering Institutions and Universities.

IEI has been recognized as Scientific and Industrial Research Organization (SIRO) by the Ministry of Science & Technology, Government of India and besides conducting its' own research, provides Grant-in-Aid to UG/PG/PhD students of Engineering institutes and Universities. IEI holds the International Professional Engineers (IntPE) Register for India under the global International Professional Engineers Alliance (IntPEA). The institution also awards the Professional Engineers (PE) Certification. IEI in collaboration with Springer regularly publishes peer-reviewed international journal in five series, namely, Series A, Series B, Series C, Series D and Series E covering fifteen engineering disciplines.

## About Coimbatore Local Centre

IE(I) Coimbatore Local Centre, operating from the PSG College of Technology campus, has been actively serving the engineering fraternity for nearly 60 years. The IE(I), Coimbatore Local Centre has been one of the active centres of The Institution of Engineers (India) which is engaged in successfully translating the objectives and ethics of IE(I) into practice. The Centre was founded in the year of 1965, under the Chairmanship of Dr G R Damodaran, an educationist, the former Vice - Chancellor of Madras University, a philanthropist and also the architect of PSG College of Technology, Coimbatore, who lived for the technology development of the nation.

Presently, IE(I), Coimbatore Local Centre has a strength of more than 3,000 corporate members, more than 6,000 student members, and 22 institutional members. It regularly organizes technical and special lectures in various fields of engineering. Industrial visits are also arranged to promote good technical interaction among the members and industries. It also observes the international / national events like World Water Day, World Telecommunication and Information Society Day, World Environment Day and Engineers Day and other IE(I) statutory days in a fitting manner by organizing technical talks on the selected themes with experts in field. One Day Seminar / Workshop, All India Seminar / Workshop funded by the IE(I), Headquarters, Kolkata are also being organized under different engineering divisions in association with various institutions. A few National Conventions of IE(I) are also organized by the Centre.

The Centre served as an important examination centre in the region for many years conducting AMIE section A & B examinations during summer and winter sessions. The Centre has many students' chapters which are active under different engineering divisions in various institutions in and around Coimbatore. Every year, outstanding engineers and young achievers are honored by the Coimbatore Local Centre. Student scholarships are also distributed from various endowment contributions.

The Centre houses a library with about 1900 text and reference books for the benefit of members. Guidance classes are also being conducted to support associate and student members. Golden jubilee of the IE(I), Coimbatore Local Centre was celebrated in the year 2015 - 2016 with the inauguration of Centre's own building, "PSG - GRD Bhavan". Rotary eClub of Coimbatore Changemakers honored IE(I), Coimbatore Local Centre with **"Changemaker of Coimbatore Award for the year 2022-2023"**. Recently, the Institution of Engineers (India), Coimbatore Local Centre, has been adjudged the **"Best Local Centre" for its all-round performance during the year 2024-2025**. This recognition was also received earlier for the years 2019-2020, 2022- 2023 and 2023-2024.

## About the College

Hindusthan College of Engineering and Technology (HiCET) was established in the year 2000 by the great Industrialist and Philanthropist, Thiru.T.S.R.Khannaiyann, founder Chairman of Hindusthan Educational and Charitable Trust whose determination and dynamism made possible the realization of this institution of excellence. Surrounded with natures pristine beauty and an excellent infrastructure coupled with dedicated and experienced faculty has made the campus a much sought-after abode of learning. At present, the college is offering 17 UG Programmes, 6 PG Programmes and 14 Research Programmes. Currently around 6000 students pursuing various Undergraduate Programmes (B.E./B.Tech.), Postgraduate Programmes (M.E./M.Tech, MBA & MCA) and Research Programs (Ph.D.) in the institution and are mentored by above 366 well qualified and experienced faculty members. The institution is recognized under Section 2(f) and 12B of University Grants Commission (UGC) and is an Autonomous Institution from 2016-17, affiliated to Anna University, Chennai with permanent affiliation for most of the programmes, approved by the All-India Council for Technical Education (AICTE). 86.6% of eligible programs are NBA accredited and our institution has been accredited by NAAC 'A++' Grade with CGPA of 3.69 out of 4 in Cycle 2 and Institution Ranked NIRF - India Rankings 2024 in Band 201-300 in Engineering category and Band 11-50 in Innovation category. Also, an ISO 9001:2015 certified institution. Many Industry-Integrated programmes and the Hinnovation Centre of the institution encourages creativity, innovation and risk acceptance, identifying business thereby encouraging entrepreneurship and start-ups.

## About the Department

The Department of Aeronautical Engineering is located at Othakalmandapam, Coimbatore, on the sprawling campus of Hindusthan College of Engineering and Technology. It first opened its doors in 2005, with a capacity of 60 students. The Department is directed by a dedicated team of teaching and non-teaching staff with a wide range of experience, and it has well-equipped laboratories and good infrastructure to support the autonomous curricular needs. Until now, the department has been in the forefront of advancing aeronautical education and indigenous research in the field of aeronautics. The Department is proud of its students who are serving in the Indian Air Force, Indian Army and Indian Navy. Students are also placed in DRDO laboratories, Hindustan Aeronautics Limited, UTC Aerospace System India, Saffron Aerospace, Airbus Group India, Boeing, Collins, BELL Helicopter India, GE, ALTRAN, Indigo Airlines, L&T Infotech, Info view, CTS, Infosys, and other leading companies. A significant number of students are pursuing higher studies in IITs and Foreign Universities.

A strong mentoring support are providing to the students to take participation in State/National/International level competitions. The department has received funds from various funding agencies such as AICTE (RPS & MODROBS scheme), ISRO, CSIR, IE(I), AeSI. The department has signed functional MoU'S with leading aviation companies. Institute has received the approval for the second DGCA approved Remote Pilot Training Organization (RPTO) which is inaugurated by Honorable Chief minister of Tamilnadu. In addition, drone development activities, Helicopter maintenance and operation activities are in full swing towards skill development and job opportunities. A separate helipad and flying area are dedicated for helicopter operations. The B.E. Aeronautical Engineering programme is accredited with NBA-Tier 1.

## About the Theme

Smart materials represent a new generation of engineered materials capable of sensing, responding, and adapting to changes in their surrounding environment. Unlike conventional materials, smart materials possess the ability to alter their mechanical, thermal, electrical, magnetic, or optical properties in response to external stimuli such as stress, temperature, electric fields, magnetic fields, moisture, or vibration. These unique characteristics have opened new avenues for the development of intelligent structures with enhanced performance, safety, durability, and operational efficiency. The rapid advancement of smart materials has significantly influenced the fields of aerospace, mechanical, and civil engineering. In aerospace applications, smart materials are extensively utilized in structural health monitoring (SHM) systems, adaptive wings, vibration suppression mechanisms, morphing aircraft structures, and space systems where weight reduction and reliability are critical requirements. In mechanical engineering, smart materials contribute to the development of advanced sensors, actuators, robotics, precision manufacturing systems, energy harvesting devices, and intelligent machine components. Similarly, in civil engineering, smart materials play a vital role in smart infrastructure through self-sensing concrete, shape memory alloy reinforcements, vibration control systems, earthquake-resistant structures, and real-time structural health monitoring of bridges and buildings. The proposed two-day seminar aims to provide participants with a comprehensive understanding of the fundamentals, recent developments, and interdisciplinary applications of smart materials. The programme will bring together IEI members, academicians, researchers, industry professionals and students to discuss emerging trends, innovative technologies and practical challenges associated with the design and implementation of smart material-based systems. Through expert lectures and technical discussions, participants will gain valuable insights into how smart materials are transforming conventional structures into intelligent and adaptive systems capable of meeting the demands of modern engineering applications. The seminar is expected to create awareness among undergraduate students, researchers, and practicing engineers regarding the latest advancements in smart material technologies and their potential contributions toward sustainable, resilient and high-performance engineering structures.

## Sub-Themes

- Fundamentals of Smart Materials and Intelligent Structures
- Shape Memory Alloys (SMAs) and Their Engineering Applications.
- Piezoelectric Materials for Sensing and Actuation.
- Smart Composite Materials and Adaptive Structures.
- Structural Health Monitoring Using Smart Materials.
- Smart Materials in Aerospace Structures.
- Applications of Smart Materials in Mechanical Systems and Robotics.
- Smart Materials for Civil Infrastructure and Earthquake-Resistant Structures.
- Emerging Nanomaterials and Multifunctional Smart Materials.
- Future Trends in Smart Materials and Sustainable Engineering Applications

## Call for Papers

Prospective authors are invited to submit manuscripts reporting original unpublished research and recent developments in the topics related to the theme of the All India Seminar but not limited to subthemes listed above.

Authors should send an Abstract up to 300 words to **coimbatorelc@ieindia.org and arulmozhinathan.aero@hicet.ac.in.** The final paper should be in the format available on the website (https://repos.ieindia.org/technical/publication/document/Paper_Template.docx). All presented papers will be included in the proceedings of the All India Seminar.

**For Guidelines for Submission of Papers scan the QR Code:**

**https://repos.ieindia.org/technical/publication/document/Guidelines_for_Authors.pdf**

## Resource Persons

Expert members from various leading academic institutions, research institutions and Industries.

## Eligibility

IEI Members, Faculty Members, Practicing Engineers, Research Scholars, UG and PG Students.

## Importance Dates

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|---|---|
| Last date for abstract submission | **: 26.11.2026** |
| Paper acceptance intimation | **: 01.12.2026** |
| Last date for full paper submission: | **: 07.12.2026** |
| Last date of registration | **: 10.12.2026** |

## How to Apply

Registration for the seminar can be made by sending the duly filled application through email or using the registration link on or before **10.12.2026.**

**Registration Link: https://forms.gle/cYvRenub8NAQ7MBXA**

## Registration Fee (including GST*)

| | ₹ * |
|---|---|
| IEI Corporate Members | **472.00** |
| UG / PG / Research Scholar | **472.00** |
| Faculty Members | **708.00** |
| Participants from Industry | **944.00** |

## Payment (Online Transfer Only)

| | | |
|---|---|---|
| Name | : | **The Institution of Engineers (India) Coimbatore Local Centre** |
| Bank | : | **State Bank of India** |
| Branch | : | **Peelamedu Branch, Coimbatore** |
| Account No. | : | **10141435551** |
| IFSC Code | : | **SBIN0007231** |
| GST No. | : | **33AAATT3439Q6ZW** |

## Note

- **Pre-registration is mandatory**
- **Spot registration is strictly not permitted (No cash payment)**
- **Limited participants only**
- **No TA / DA will be paid**
- **Kindly bring your college / industry identity card**
- **Registration through email and registration link is compulsory**
- **Registration fee includes: refreshments, lunch & participation certificate**

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| **Chief Patrons** | **Smt T R K Sarasuwathi**<br>Managing Trustee<br>Hindusthan Educational Institutions, Coimbatore |
| | **Dr K Priya**<br>Executive Trustee & Secretary<br>Hindusthan Educational Institutions, Coimbatore |
| **Patron** | **Dr Jaya J**<br>Principal<br>Hindusthan College of Engineering and Technology, Coimbatore |

## National Advisory Committee

| | |
|---|---|
| **Chairman** | **Er Manish Mahendra Kothari,** President, IEI |
| **Co - Chairman** | **Dr Venkitakrishnan P V,** Chairman, ASDB, IEI |
| **Convener** | **Mr T Arulmozhinathan**<br>Assistant Professor, Department of Aeronautical Engineering<br>Hindusthan College of Engineering and Technology, Coimbatore |
| **Members** | **Er Sajjan Singh Yadav,** Vice President, IEI |
| | **Er Lochan Kumar Adhikari,** Vice President, IEI |
| | **Prof (Dr) Girish Shrikisan Mundada,** Chairman, CATE |
| | **Er Manish Mahendra Kothari,** President, IEI |
| | **Er Harsha R,** Member, ASDB, IEI |
| | **Er Khinvasara Sumit Kantilal,** Member, ASDB, IEI |
| | **Dr Selvakumaran T,** Member, ASDB, IEI |
| | **Prof Dr D Elango,** Chairman, IEI TNSC |
| | **Dr J Pradeep Kumar,** Honorary Secretary, IEI Coimbatore Local Centre |
| | **Dr Ashishsingh Dixit,** Secretary and Director General, IEI |

## Organizing Committee

| | |
|---|---|
| **Chairman** | **Dr M Senthilkumar,** Chairman, IEI Coimbatore Local Centre |
| **Secretary** | **Dr J Pradeep Kumar,** Honorary Secretary, IEI Coimbatore Local Centre |
| **Members** | **Dr J Krishnamoorthi,** Immediate Past Chairman, IEI Coimbatore Local Centre |
| | **Dr G Madhan Mohan,** Immediate Past Honorary Secretary, IEI CLC |
| | **Dr M Senthil Kumar,** Committee Member, IEI Coimbatore Local Centre |
| | **Dr S Prabhakaran** Committee Member, IEI Coimbatore Local Centre |
| | **Mr K Saravanakumar,** Committee Member, IEI Coimbatore Local Centre |
| | **Dr R Sivasankari,** Committee Member, IEI Coimbatore Local Centre |
| | **Dr V V Senthil Kumar,** Committee Member, IEI Coimbatore Local Centre |

## Technical Committee

**Chairman**

**Dr V T Gopinathan**
Professor & Head
Department of Aeronautical Engineering
Hindusthan College of Engineering and Technology, Coimbatore

**Convener**

**Mr Saravana Kumar V**
Assistant Professor
Department of Aeronautical Engineering
Hindusthan College of Engineering and Technology, Coimbatore

**Members**

**Dr Karthikeyan P N**
Professor
Department of Aeronautical Engineering
Hindusthan College of Engineering and Technology, Coimbatore

**Mr Saravanan R**
Assistant Professor
Department of Aeronautical Engineering
Hindusthan College of Engineering and Technology, Coimbatore

| Contact | |
|---|---|
| **Dr J Pradeep Kumar**<br>Honorary Secretary<br>The Institution of Engineers (India)<br>Coimbatore Local Centre<br>PSG College of Technology Campus<br>Peelamedu, Coimbatore - 641004<br>Email: coimbatorelc@ieindia.org<br>Phone: 0422 - 2580733 /<br>Office: +91 8056652764 | **Mr Arulmozhinathan T**<br>Assistant Professor<br>Department of Aeronautical Engineering<br>Hindusthan College of Engineering and Technology, Coimbatore<br>Email: arulmozhinathan.aero@hicet.ac.in<br>Phone: 8300532720 |

## Registration Form

*All India Seminar*
*on*

# Smart Materials and Intelligent Structures: Innovations and Applications in Aerospace, Mechanical and Civil Engineering

**17-18 December 2026**

***Venue: Ganga Hall***
***Hindusthan College of Engineering and Technology, Coimbatore - 641032***

**Name: (in Block Letters)** : .....

**Designation:** : .....

**Organization / Institution** : .....

**IEI Membership No & Division** : .....

**Address for Communication** : .....

.....

**Mobile Number** : .....

**Email ID** : .....

**Registration Fee Paid (Rs.)** : .....

**Transaction Details**
**UPI ID No / NEFT UTR No.** : .....

**Transaction Date & Time** : .....

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**Dated:** ..... **Signature**