Information Brochure

The Institution of Engineers (India)

A Century of Service to the Nation
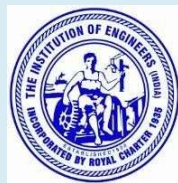
All India Workshop

On

"Smart Air: Leveraging Cloud and AI to Combat Ultrafine Air Pollution (PM$_{0.1}$ and PM$_{1.0}$) for a Safer Environment"

Date: 08.01.2026

Place: University College of Engineering,

BIT Campus, Tiruchirappalli

Organized by

The Institution of Engineers (India)

Tiruchirappalli Local Centre

Under the Aegis of

Environmental Division Board, IEI

In Association with
Department of Civil, Computer Science and Engineering,
University College of Engineering–BIT Campus
Tiruchirappalli –620 024

Venue: B-217, Dr. APJ Abdul Kalam Auditorium, University College of Engineering, BITCampus, Tiruchirappalli - 24

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 Lakhs. Established in 1920, with it's 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 Centre's 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 theglobe.

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.

IEIhasbeen recognized asScientific and Industrial Research Organization (SIRO) bythe 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 infive series, namely, Series A, Series B, Series C, Series D and Series E covering fifteen engineering disciplines.

About Tiruchirappalli LocalCentre:

Tiruchirappalli Sub-Centre of IE (I)was formed in 1973 and was elevated as Local Centre in 1987 after the membership crossed the 500th mark. Presently, the membership is more than 2605. Our Local Center is functioning in its own premises located in BHEL campus on the land leased by BHEL, Tiruchirappalli. The building was declared open by Shri P.S Gupta, CMD, and BHEL in August 1990. The institution houses a library having more than 5000 books from various divisions for the benefit of students and members. Our Centre celebrated its Golden Jubilee during this to mark the completion of 50 years of its formation and its meritorious service to the Engineering community. The Local Centre has a very close liaison with leading engineering organizations, professional Institutions and sister professional bodies in the conduct of technical activities. For details, please see:http://ieitiruchi.org/

IEITLCAddress:
IE(I)Tiruchirappalli Local Centre, BHEL
Main Office Road, BHEL
Tiruchirappalli620014, Tiruchirapallilc@ieindia.org,9442571576

University College of Engineering (UCE), BIT Campus, Anna University, Tiruchirappalli has been established in1999 and now functioning as a constituent college of Anna University, Chennai. UCEBIT Campus, Anna University has become sufficiently multifaceted with 7 Faculties with 16 Teaching Departments including some specialized programmes. Our institute has NBA Accreditation and offers10 B.E/B.Tech. Undergraduate degree programmes, 8 M. E / M. Tech Master's degree programmes along with MBA, MCA and Ph.D. programmes in all discipline with 4628 students in the campus. We are the TEQIP II sponsored institution withUGC 2f & 12B status. The unique dimension of the institute's educational profile harnesses the research and teaching interests of the faculty to forge its own character and to bring an extra value-addition to it. The departments of our institute are carrying out specialized and socially responsive interdisciplinary research. Ourinstitute has 2 Centers funded by DST and AICTE. UCE, BIT Campus received research and consultancy from various funding agencies of India for a total value of 300 million Rupees. The main objective of the institutes to generate a horde of highly creative professionals, who can contribute not only to the Human Resource Development and also to Nation building exercise.

ABOUT THE DEPARTMENT

The Department of Civil Engineering has commenced B.E. Civil Engineering course in the year 2008 with an intake of 120 seats. B.E. Civil Engineering Tamil Medium was started in the year 2010 with 30 seats of intake. M.E. Environmental Engineering course was commenced in the year 2010 with 12 seats. In addition, the department offers Part-Time M.E. Course in Structural Engineering with 25 seats. Since its inception in the year 2007, the Department has conducted various workshops, a national seminar, national level technical symposiums and conferences.

The Department of Computer Science and Engineering aims to develop students into world-class technocrats with practical skills to create innovative information systems. Besides teaching undergraduate and postgraduate courses, many students are enrolled in research programs, both full-time and part-time, in areas such as image processing, text mining, theory of computation, data mining and warehousing, wireless sensor networks, and network security. Faculty members actively secure grants for R&D activities, withthree sponsored projects totaling Rs. 48.93 lakhs from organizations like the University Grants Commission, the All-India Council for Technical Education, and the Ministry of Information Technology.

About the Theme:

Air pollution, particularly due to ultrafine particulate matter ($PM_{0.1}$ and $PM_{1.0}$), is an escalating threat to environmental sustainability and public health, especially in rapidly urbanizing regions. These microscopic particles, often originating from vehicular emissions, industrial processes, and combustion activities, can penetrate deep into the lungs and bloodstream, leading to severe respiratory, cardiovascular, and neurological health issues. To address this critical challenge, the proposed workshop—**"Smart Air"**— aims to explore innovative, technology-driven strategies for monitoring and mitigating air pollution using the power of cloud computing and artificial intelligence (AI).

The workshop will focus on how AI-powered systems, integrated with cloud infrastructure, can transform traditional air quality monitoring into intelligent, real-time, and predictive frameworks. Topics will include sensor-based data collection, cloud-based data integration, AI-driven predictive modeling, pollution source identification, and real-time decision-making for air quality interventions. Participants will gain insights into the latest research and applications, including smart environmental sensors, deep learning for pollutant forecasting, and AI-assisted urban planning tools.

Key outcomes of the workshop include an enhanced understanding of how cloud and AI technologies can be deployed to combat $PM_{0.1}$ and $PM_{1.0}$ pollution, practical demonstrations of intelligent air quality systems, and strategies for policy integration and public engagement. Attendees will also benefit from interactive sessions, networking opportunities, and exposure to successful case studies from smart cities globally.By bringing together experts, technologists, urban planners, and environmental policymakers, the "Smart Air" workshop aims to foster actionable collaboration and innovative thinking for creating healthier, more sustainable urban environments.

☐ **AI-Based Disease Detection**
Harnessing Artificial Intelligence with drone and satellite imagery for early identification and management of crop diseases.

☐ **IoT-Driven Field Monitoring**
Utilizing smart sensors and IoT networks for real-time soil, weather, and crop condition tracking to enable data-informed decisions.

☐ **Machine Learning for Pest and Climate Prediction**
Applying predictive analytics to forecast pest infestations and monsoon variability for proactive farm management.

☐ **Precision Farming Solutions**
Enhancing productivity and resource efficiency through AI-guided irrigation, nutrient optimization, and input management.

☐ **Digital Advisory and Decision Support Systems**
Delivering personalized, real-time, and data-driven guidance to farmers via mobile and cloud-based platforms.

Resource Persons
Expert members from R& D sector, industries and various leading academic institutions.

Eligibility

IEI Members, UG Students, PG Scholars, Faculty Members and Research Scholars

How to Apply:

Registration for the seminar can be made by sending the duly filled in application Through mail or by filling the registration link given below on or before 05.01.2026

RegistrationLink:
https://forms.gle/gZgFgxgYgdePnwW36
Note:
- Limited seatsareonlyavailable
- On-spot registration is also available but Pre-registration is mandatory
- The registration will be confirmed on first come first served basis

Registration Fee:

Industry Person / Non Member / Research Scholars: **Rs.375/-**
Student Member of **IEI: Rs.300/- (Registration fee includes Tea & Lunch during Seminar.)**

NATIONAL ORGANIZING COMMITTEE

Chairman:	Er. VB Singh, President, IEI
Co-Chairman:	Dr V.Karthikeyan ,Chairman Environmental Engineering Division Board, IEI
Convener	Dr G.Venkatesan AP-Civil, Dr R. Arun Prakash AP-CSE, UCE, –BIT Campus
Members	Er Ajoy Kumar Sinha, Member, ENDB, IEI Er Jagdish Chand Singhal Member, ENDB, IEI Er Sanjay Sen, Member, ENDB, IEI
	Secretary: Dr.S.Titus, Hon.Secretary,TiruchirappalliLocalCentre,IEI

ORGANIZING COMMITTEE

Chief Patron	**The Convener Committee Members, Anna University, Chennai**
Patron	**Dr.V. Kumaresan, Registrar i/c, Anna University, Chennai**
Convener	**Dr.R. Baskaran , Director (CCC), Anna University, Chennai.**
Organizing Secretary	**Dr.T.Senthilkumar, Dean, UCE-BIT Campus**
Chairman:	**Dr. Kevin Ark Kumar , Chairman, IEI Tiruchirappalli Local Centre**

CONTACT DETAILS

Dr.S.Titus **Secretary, IEI** **Tiruchirappalli** **Local Centre** 9443690147, tiruchirapallilc@ieindia.org	**Dr G.Venkatesan & Dr R. Arun Prakash** **University College of Engineering– BIT Campus,** **Tiruchirappalli 620 024** 7010402962 arunitvijay2014@gmail.com gvenkat1972@yahoo.co.in

Registration Form

All India Workshop

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Organization/Institution:…………………………………………...
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Designation/Class.………………………………………………………….........................
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Branch:………………………………………………………………………….....................

.... IEI Membership Number

&Division:...………………………………………………………………………………..

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