



EASWARI
ENGINEERING COLLEGE
An AUTONOMOUS Institution
Affiliated to ANNA UNIVERSITY
RAMAPURAM, CHENNAI



INTERNATIONAL CONFERENCE ON **ULTRASONICS AND MATERIALS SCIENCE** **FOR ADVANCED TECHNOLOGY** (ICUMSAT 2025)



PRE-CONFERENCE WORKSHOP ON
**RECENT BREAKTHROUGHS IN
ULTRASONICS FOR MEDICINE**

21st to 23rd January 2026

Organized by



Easwari Engineering College
Ramapuram, Chennai – 600 089
Tamil Nadu, India



SRM TRP Engineering College
Tiruchirappalli - 621 105
Tamil Nadu, India



In association With
Ultronics Society of India (USI)
New Delhi

About the College

Easwari Engineering College (EEC), an autonomous institution established in 1996–97 under the aegis of SRM Institute of Medical and Technical Research, is a premier institution of the SRM Group of Educational Institutions. It was founded by **Dr. T. R. Paarivendhar** to promote the cause of quality education and is now led by Chairman **Dr. R. Shivakumar** and Co-Chairman **Er. S. Niranjan**. The college has been approved by AICTE and affiliated to Anna University since 2002. The college offers 15 undergraduate programs including B.E. and B.Tech. in disciplines such as Civil, Mechanical, Electrical & Electronics, Electronics & Communication, Biomedical, Biotechnology, Computer Science, Information Technology, and related fields. Over the past 28 years, the institution has evolved into a top-ranked NIRF institution & offers 7 post graduate programs including M.E., MBA, and MCA. Accredited by NBA and NAAC, EEC also fosters strong industry interaction with reputed national and international organizations, ensuring academic excellence, research orientation, and professional relevance.

About the Department

The Department of Physics was started in December 1996 catering to the needs of Engineering Departments and has grown in tune with the demands of the Institution and improved its strength. Our department boasts 12 highly qualified doctorate faculty members who have filed multiple national and international patents and secured research funding of ₹ 2.35 Crore over the past decade. The Department of Physics has established a distinguished Center of Excellence dedicated to Advancing Research in Bioactive Glass. The faculty members have published number of papers in reputed national and International Journals and presented more number of papers in National / International Conferences.

About the Ultrasonics Society of India

The Ultrasonics Society of India (USI) was founded in 1974 at the National Physical Laboratory (NPL) in New Delhi. For more than 50 years, it has been actively advancing research and development in the field of ultrasonics and related fields. It has arranged a number of national and international symposiums around the nation. The Society is in its 45th year of publishing with its regular Journal of Pure and Applied Ultrasonics. Being a member of the Society has helped a great deal of scientists, academics, and students. INSPEC abstracting Services UK is abstracting the journal and i-Scholar is collaborating with them. You may find further details on the Society website.

(www.ultrasonicsindia.org).

CHIEF PATRONS

Dr. R. Shivakumar, Chairman
Mr. S. Niranjan, Co-Chairman
SRM Group of Institutions, Ramapuram & Trichy
Dr. Raja Ram Yadav, President USI

PATRONS

Dr. P. Deiva Sundari, Principal, EEC
Dr. M. Siva Kumar, Principal, SRM TRP
Dr. Mahavir Singh, & Dr. Sanjay Kumar Yadav
General. Vice President USI



ADVISORY COMMITTEE

Dr. R. Karthikeyan, Director Research,
SRM Ramapuram & Trichy Campus
Dr. Burkard Hillebrands, Technische Universitaet
Kaiserslautern, Germany
Prof. Nico F. Declercq, Metz, France
Dr. Rajakumar Kanthapazham, SUSU, Russia
Dr. Werner J Blau, Trinity College Dublin, Ireland
Dr. Arnold Walter, Saarland University, Germany
Dr. Shanmugavel Chinnathambi, iCeMS, KU, Japan
Dr. M.R. Ashwin Kishore, Univ. of Seoul, South Korea
Dr. R. Varunaa, Univ. of Seoul, South Korea
Dr. Yogendra Kumar Mishra, Germany
Dr. P. Pon Sathieshkumar, SQIBT, NWU, IL, USA
Dr. Koki Takanashi, Tohoku University, Japan
Dr. Amar Singh Babu, KU, UAE
Dr. Sanjay Yadav, CSIR-NPL, Vice-President-USI.
Dr. Lokanath Patra, UCSB, USA
Dr. Seshathiri Dhanasekaran, UiT, AUN, Norway
Dr. Nico F. Declercq, Georgia Institute of Tech. France
Dr. Reisson Weldegiorgis, NDT Center, Govt. of Ethiopia
Dr. Abhay Karandikar, DST, New Delhi
Dr. Shivkumar Kalyanaraman, ANRF, New Delhi
Dr. (Mrs.) N. Kalaiselvi, CSIR, New Delhi
Shri. Rajesh S. Gokhale, DBT, New Delhi

Dr. M. Ravichandran, Ministry of Earth Sci., New Delhi
Dr. S M Yusuf, BARC, New Delhi
Dr. S. Praveen Kumar, DST, New Delhi
Dr. V. Rajendran, VC, AMET University, Chennai
Prof. G. Ravi, VC, AU, Karaikudi
Dr. S. Arumugam, VC, TN Open University, Chennai
Dr. Kirti Soni, CSIR-AMPRI, Bhopal
Dr. S. V. Bhat, IISc, Bangalore
Prof. Ranjana Aggarwal, CSIR-NIScPR, New Delhi
Shri G. A. Srinivasa Murthy, DRDL, Hyderabad
Prof. Ranjana Aggarwal, CSIR-NIScPR, New Delhi
Prof. Vilas A Tabhane, Nagpur
Prof. R.K. Singh, BHU, Varanasi
Prof. Krishan Lal, FNA, New Delhi
Dr. P. Ramasamy, SSN Research Centre, Chennai
Dr. R Srinivasan, TNSCST, Chennai
Dr. M. V. Sangaranarayanan, IITM, Chennai
Dr. Gautam Gangopadhyay, SN Bose NCBS, Kolkata
Dr. D. Rajan Babu, VIT University, Vellore
Prof. Venu Gopal Achanta, NPL, New Delhi
Shri. Vivek Bhasin, BARC, New Delhi
Shri G. A. Srinivasa Murthy, DRDL, Hyderabad
Dr. Abraham Varughese, NSTL, Visakhapatnam
Dr. S. Sathiya Murthy, Dept. of Mech. Engg., EEC

ORGANISING COMMITTEE

Dr. K. Raju, EEC
Dr. R. Thirumurugan, EEC
Dr. V.S. Jeba Reeda, EEC
Dr. R. Shabu, EEC
Dr. Johnsy Arputhavalli, EEC
Mrs. V. Dhivya, EEC
Dr. P. Anitha, SRM TRPEEC
Dr. A. Joseph Sagaya Kennedy, SRM TRPEEC
Dr. S. Visweswaran, Physics, SRM TRPEEC

Mr. G. Purushothaman, SRM TRP EC
Dr. K. Manikandan, SRM TRP EC
Dr. R. Arun, SRM TRP EC
Dr. V. Chithiika Ruby, SRM TRP EC
Dr. S. Dinesh Vijay, SRM TRP EC
Dr. S. Raja, SRM TRP EC
Dr. K. Manikandan, SRM TRP EC
Mr. D. Prakash, Center for Research, SRM RMP, Chennai
Mr. P. S. Gokul, Center for Research, SRM RMP, Chennai

CORE COMMITTEE

CONVENERS

Dr. R. Sivakumar, HoD, Physics, EEC
Dr. B. Sethuraman, HoD, Physics, SRMTRP EC
Dr. P. K. Dubey, Secretary, USI

ORGANISING SECRETARY

Dr. M. Divya Bharathi, Physics, EEC
Dr. K. Venkatesan, Physics, SRMTRP EC

PROGRAM CHAIRS

Dr. D. Surya Bhaskaram, EEC

Dr. Riya Sebastian, EEC

Dr. Ammu Vijay, EEC

COORDINATORS

Dr. G. Rajkumar, Physics, EEC
Dr. K. Sakthipandi, Physics, SRM TRP EC

TREASURER

Dr. R. ArunKumar, Physics, EEC

ABOUT PRE CONFERENCE WORKSHOP

Opportunities and Challenges in Ultrasonic Testing in Industries

Ultrasonic Testing (UT) is a powerful Non-Destructive Evaluation (NDE) tool that ensures safety, quality, and performance without damaging materials. This workshop brings together industry experts and academia to explore the latest opportunities and challenges in UT applications.

Opportunities

- Enhanced quality assurance in welding & fabrication
- Expanding biomedical applications with precision UT
- Digital UT+AI/Robotics for predictive maintenance
- Rising demand for skilled UT professionals

Challenges

- Complex geometry inspections
- High cost of automation & equipment
- Shortage of trained NDE experts
- Need for standardization across industries

Why Attend?

- Learn from real-world case studies
- Explore future trends in UT
- Discover how UT is shaping industrial & biomedical sectors in Chennai
- Network with experts from academia & industry.

ABOUT THE CONFERENCE

ICUMSAT-2025 will provide a global platform for ultrasonics researchers, materials scientists, entrepreneurs, and young scientists to share knowledge, innovations, and strategies for future advancements. From ancient contributions to modern breakthroughs in healthcare, imaging, energy, and manufacturing, ultrasonics and materials science continue to shape the progress of science and technology.

This conference emphasizes the paradigm shift of NDE 5.0 – Ultrasonic Testing, showcasing the integration of traditional ultrasonic methods with AI, ML, IIoT, robotics, AR, and cloud analytics - transforming inspection into a smart, predictive ecosystem.

Highlights of NDE 5.0 – Ultrasonic Testing

- Automated Phased Array Systems, Full Matrix Capture (FMC), and the Total Focusing Method (TFM) for enhanced imaging and precise defect characterization.
- Robotic manipulators and crawler systems for repeatable, high-precision inspections in hazardous or inaccessible environments - improving safety and minimizing human error.
- AI-enabled real-time analytics that process inspection data instantly on secure cloud platforms, enabling defect recognition, sizing, and predictive maintenance based on asset performance history.
- Digital twins to simulate inspection scenarios and forecast component lifespans, ensuring proactive decision-making and improved operational reliability.

CONFERENCE THEMES

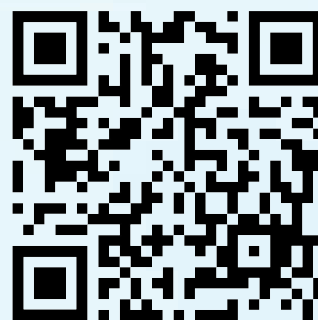
- AI-driven defect detection and interpretation.
- Predictive analytics for proactive maintenance.
- Traceable digital records for compliance.
- AI & Machine Learning in signal analysis.
- Remote and autonomous inspection systems.
- Nonlinear ultrasonics for material characterization.
- Smart sensors and wireless monitoring.
- Ultrasonics in NDT/NDE.
- Nanoscience and nanotechnology applications.
- Biomedical and healthcare diagnostics.
- Additive manufacturing and materials processing.
- Welding, cleaning, and sonochemistry.
- Aerospace, automotive, and civil infrastructure applications.

CALL FOR ABSTRACTS AND FULL LENGTH PAPERS

- Participants are invited to submit abstracts on their unpublished research work (maximum 300 words) that should be in the given abstract format in this QR. All the procedures mentioned in the document file.
- All the accepted papers will be published in **Scopus/SCI** Indexed Journals after the peer review process. (List of Journals will be updated soon)
- Best Oral & Poster will be awarded for two participants in each category.

IMPORTANT DATES

Last Date for Abstract	:	31.10.2025
Notification of Acceptance	:	15.11.2025
Last Date for Full Length Paper	:	31.12.2025
Last Date for Registration	:	12.12.2025



REGISTRATION

Category	Indian	Foreign
Non USI Members	₹ 6,000/-	US\$ 300
USI Members	₹ 5,000/-	US\$ 200
Scholars & Students	₹ 3,000/-	US\$ 200
Industrialists	₹ 10,000/-	
Accompanying Person	₹ 2,000/-	US\$ 200

Registration Link:

BANK DETAILS

Account Name: **Easwari Engineering College**

Bank: **City Union Bank**

Account no: **500101013507081**

IFSC Code: **CIUB0000517**

Branch: **Ramapuram**

Registration fee includes conference kit, book of proceedings abstracts with ISBN, Snacks & Refreshments, lunch and local conveyance

For further details

Dr. R. ArunKumar

Department of Physics

Easwari Engineering College

Chennai - 600 089

arunkumar.r@eec.srmrmp.edu.in

Mobile: +91 70101 24979

Dr. K. Venkatesan

Department of Physics

SRM TRP Engineering College

Tiruchirappalli - 621 105

venkatesan.k@trp.srmtrichy.edu.in

Mobile: +91 63805 54398