

Fourth International Conference on Sustainable Materials and Technologies: Bridging Research and Innovation 4.0

Jointly organized by

March
7 & 8 – 2025

Department of Mechanical Engineering - BIT Sathy &
School of Engineering and Technology, Sunway University-Malaysia.

About the Conference:

The "International Conference on Sustainable Materials & Technology: Bridging Innovation & Research" (ICSMT 2025) organized by Bannari Amman Institute of Technology aims to serve as a pivotal platform for advancing the discourse in the field of smart materials and their applications. This conference will highlight the latest research and innovations in smart materials, encompassing a diverse range of topics including but not limited to shape memory alloys, self-healing materials, responsive polymers, and nanomaterials. ICSMT 2025 seeks to explore the intricate relationship between material properties and their performance in real-world applications, emphasizing how smart materials can revolutionize various sectors such as healthcare, energy, construction, and environmental sustainability. The conference will feature a blend of original research, both experimental and theoretical, alongside peer-reviewed papers that contribute to the ongoing dialogue in this dynamic field.

As an interdisciplinary forum, ICSMT 2025 will bring together researchers, industry professionals, and academics from across the globe, fostering collaboration and knowledge exchange. The primary objective is to inspire innovation and drive systemic change by showcasing ground breaking research and emerging technologies that can enhance societal well-being. Participants will have the opportunity to engage in discussions addressing critical challenges and opportunities in smart materials research, including economic viability, sustainability, and the potential for new applications. The conference also aims to facilitate global networking, enabling attendees to forge connections that can lead to future collaborations. Eminent scientists and industry leaders will share their insights and visions for the future of smart materials, paving the way for advancements that can significantly impact our lives. ICSMT 2025 promises to be a landmark event that bridges the gap between innovation and research, propelling the field of smart materials into new frontiers.

Theme :

The International Conference on Sustainable Materials and Technologies: Bridging Research and Innovation aims to bring together researchers, industry experts, and educators to explore innovative strategies in sustainable materials and technologies. The conference's goal is to promote sustainable development through the exchange of knowledge, focusing on addressing current challenges in the industry, such as energy efficiency and material waste. By fostering interdisciplinary collaboration, showcasing emerging trends, and encouraging educational advancement, the conference aspires to inspire future research directions. Ultimately, it seeks to enhance the dialogue surrounding sustainable practices and innovations, contributing to a resilient and transformative future in science, technology, and engineering.

1. Mechanical Systems and Design

- Digital Manufacturing
- Mechanical and Machine Design and Controls
- Applied Robotics and Mechatronics
- Acoustics and Vibration
- Kinematics and Dynamics of Rigid Bodies
- Condition and Performance Monitoring
- Fatigue and Fracture Mechanics
- Finite Element Modelling (FEM/FEA)
- Vibration Systems
- 3D Printing for Prototyping

2. Energy Engineering and Thermal Sciences

- Energy Conversion Systems & Harvesting
- Engines, Energy, and Combustion
- Combustion Engines (Hybrid, Electric)
- Thermal and Mass Transport
- Heat Transfer Mechanisms and Applications
- Fluid Mechanics (External and Internal Flows)
- Turbomachinery
- Refrigeration and Air-conditioning Systems
- Renewable Energy Systems (Solar, Wind, Geothermal)
- Hydropower Transmission
- Thermoelectric Energy Systems
- Phase Change Materials

3. Materials and Manufacturing Engineering

- Advanced Manufacturing Processes (e.g., 3D Printing, Laser Machining)
- Materials Science and Technology
- Nano, Smart, and Bio-Materials
- Tribology (Surface Engineering)
- Micro/Nanoelectromechanical Systems (MEMS/NEMS)
- Advanced Bonding and Joining Techniques
- Design of Light Alloys and Composites
- Metal Additive Manufacturing
- Smart Materials for Structural Health Monitoring

4. Biomechanical and Biomedical Engineering

- Biomechanical Design and Technology
- Ergonomics and Human Factors Engineering
- Wearable Biomedical Devices
- Micro- and Nanoelectromechanical Systems in Biomedical Applications
- Biomechanics of Prosthetics and Implants
- Condition Monitoring of Medical Equipment
- Artificial Intelligence in Biomechanics
- MATLAB Simulation for Biomedical Systems
- Sports and Rehabilitation Engineering

5. Automation, Control and Robotics

- Applied Robotics and Mechatronics
- Servo-Mechanics
- Real-Time and Time Delay Systems
- Robotics and Control Systems
- Automation in Industrial Systems
- AI, Data Science, and Machine Learning Applications in Robotics
- Digital Twin for Automation and Robotics

- Cyber-Physical Systems
- Autonomous Vehicle Systems
- Control of Vibration and Noise

6. Computational Mechanics and Simulation

- Numerical Simulations and Applied Mathematical Modelling
- FEM/CAE/BEM/FEA
- MATLAB and Simulink for Mechanical Applications
- Computational Fluid Dynamics (CFD)
- Computation in Acoustics and Vibration
- AI and Machine Learning in Predictive Maintenance
- Big Data Analytics for Mechanical Systems
- Digital Twin Technology for Real-Time Monitoring
- Cloud-Based Simulations
- Optimization of Mechanical Systems via Machine Learning

Publications

All the accepted papers will be published in Conference Proceedings. Selected papers meeting the scope, relevance, and novelty will be invited by the Expert Committee to submit in Scopus and/or SCI indexed journals as per the publisher norms.

National Technical Committee:

Dr K Ravikumar, *Asso.Prof., M.E, IIT Delhi*
Dr V Pandu Ranga, *Professor, M.E IIT Bhuvaneshwar*
Dr Santhakumar Mohan, *M.E, IIT, Palakad, Kerala*
Dr N Sivashanmugam, *Prof, M.E, NIT, Tiruchirappalli*
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Dr. Zafar Said, *University of Sharjah, UAE*
Prof. Dr. Saidur Rahman, *Sunway University, Malaysia*

Keynote Speaker Details



Dr. Muhammad A Hassan,
Cairo University, Egypt



Dr. Iftikhar Hussain,
City University of Hong Kong, Hong Kong



Dr. Nidheesh P V,
Senior Scientist, CSIR- NEERI, Nagpur, Maharashtra, India - 440020.



Dr. Sujay Chakravarty,
Scientist-F in UGC-DAE, GCAR, Kalpakkam-603102



Dr. M. Sathish,
CSIR- CECRI, Karaikudi – 630003, Tamil Nadu, INDIA



Dr. Sakthivel S,
Scientist F& Team Leader, DST - ARCI, RCI Road, Balapur (PO) Hyderabad-500 005, Telangana State, India

Advisory Committee:

Dr. C. Palanisamy, *Principal, BIT Sathy*
Dr. K. Sivakumar, *Dean - PDS, BIT Sathy*
Dr. K. L. Senthilkumar, *Head Academics, BIT Sathy*

Convenor:

Dr. G. Kumaresan, *Professor & Head, Mechanical Engineering Bannari Amman Institute of Technology, India*
Prof. Adarsh Kumar Pandey
Deputy Dean (Research and Sustainability)
Research Centre for Nano-Materials and Energy Technology (RCNMET)
School of Engineering and Technology, Sunway University-Malaysia.

Organising Secretary:

Dr. C. Subramaniyan, *AP III, Mech, BIT*
Prof. N. Bhuvanesh, *AP III, Mech, BIT*
Dr. K. B. Prakash, *AP III, Mech, BIT*
Dr. Kalidasan Balasubramanian, *Research Centre for Nano- Materials and Energy Technology (RCNMET) School of Engineering and Technology, Sunway University-Malaysia.*



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Important Dates

S.No	Details	Date
01	Submission of Full Paper	05.02.2025
02	Intimation of Acceptance	27.02.2025
03	Registration and Camera Ready Paper Submission	02.03.2025

Easy Chair Link

<https://easychair.org/conferences?conf=icsmt2025>

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Contact us

Dr. C. Subramaniyan | 94863 60218
Prof. N. Bhuvanesh | 95007 80074
Dr. K. B. Prakash | 99445 81413

mechevents@bitsathy.ac.in