

2025 Seventh International Conference on Materials Science and Manufacturing Technology (ICMSMT 2025)

26 - 27, JUNE 2025 | Coimbatore, India

Program Schedule

Date	Time	Event
26.06.2025	09.30 am to 09.50 am	Inaugural Function Google Meet Link: meet.google.com/wpa-oguo-ibx
26.06.2025	09.50 am to 10.25 am	Keynote Address #1: Dr. S. Shamshath Begum <i>Associate Professor, Polymer Engineering</i> <i>B. S. Abdur Rahman Crescent Institute of Science & Technology, Chennai, India</i> Google Meet link: meet.google.com/wpa-oguo-ibx
	10.30 am to 01.00 pm	Session 1: ACH01(Online)
		Session 2: CE01(Online)
		Session 3: EC01(Online)
		Session 4: AMA01(Online)
		Session 5: APH01(Online)
		Session 6: APH02(Online)
		Session 7: ME01(Online)
		Session 8: ME02(Online)
		Session 9: ME03(Online)
	12.00 noon to 02.30 pm	Session 10: ME04(Online)

Track Notation:

APH - Applied Physics
 AMA - Applied Mathematics
 ACH - Applied Chemistry
 CE - Civil Engineering
 EC - Electronics & Communication Engineering
 ME - Mechanical Engineering

Note:

1. Start time given above indicates Indian Standard Time (IST).
2. Presentation will be conducted using Google meet platform.
3. Participants can join their respective sessions by clicking the meet link given
4. Mode of presentation should be powerpoint presentation (ppt or pptx)
5. Duration of presentation: 10 minutes (presentation) + 2 minutes (Queries)
6. Participants are requested to follow the scheduled time; especially regarding the time for your talk.
7. Participants are requested to contact the respective session coordinators for presentation related queries.
8. If any problem connecting to session, please contact the session In-Charges during presentation date(s).

Session 1: ACH01 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Prof. Nirmala, Department of Chemistry, ACET, +91 96882 43777

Google Meet Link: <https://meet.google.com/aos-ckaj-cgd>

Time	Paper ID	Paper Title
10.30 AM	MS 3047	Degradation of Sudan IV Dye in Non-Aqueous Media Using Gamma Radiations
10.42 AM	MS 3199	The Interaction of Environmental Gases with Li Functionalized [2,2]Paracyclophane: A DFT Study
10.54 AM	MS 3219	Harnessing Electrochemical Exfoliation of Graphene in Aqueous Medium and its Optical Properties
11.06 AM	MS 3286	Solvatochromic and Water-Sensitivity Studies of a Novel Hemicyanine Dye
11.18 AM	MS 3290	Developments in cathode materials for Li ion batteries
11.30 AM	MS 3292	Design, Synthesis, Photophysical Properties and BSA Interaction Studies of a Novel Fluorescent Dye for Protein Sensing Applications
11.42 AM	MS 3320	Phytochemical Synthesis of Flower-Shaped Silver Nanoparticles and Their Catalytic Applications
11.54 AM	MS 3373	DFT Study on Bandgap Engineering in Graphene through Targeted Elemental Doping
12.06 PM	MS 3379	Coumarin Scaffold Fluorophore for High-Sensitivity Detection of Picric Acid
12.18 PM	MS 3386	Evaluating the Impact of Waste Eggshell-Derived Calcium-Enriched Nano-Fertilizer on Carrot plant (<i>Daucus carota</i>) Development
12.30 PM	MS 3388	Fabrication of Nanoporous Polystyrene Fibers using a Single Solvent via Electrospinning
12.42 PM	MS 3236	Sustainable Transdermal Drug delivery with innovation in Material Design and Formulations: A comprehensive Review

Session 2: CE01(Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Prof. Pradeepa, Department of Civil Engineering, ACET, +91 80729 01267

Google Meet Link: <https://meet.google.com/oaexkzk-gvz>

Time	Paper ID	Paper Title
10.30 AM	MS 3028	Sustainable Gypsum Plaster Composites: Incorporation of Recyclable Plastic
10.42 AM	MS 3074	K-Means Clustering for Machine Cell Design: A Superior Alternative to Rank Order Clustering in the Context of Sustainable Development Goals (SDGs)
10.54 AM	MS 3148	Performance of Open-graded Friction Course Asphalt Mixtures with Viatop Pellets
11.06 AM	MS 3206	Studies on Composite Cement-Based Concrete Mixes Incorporating Ferrochrome Slag as Coarse Aggregates
11.18 AM	MS 3232	Comparative study of the deflection of a beam with C-type shear channels
11.30 AM	MS 3275	Passive Cooling Performance of Cement Blocks Partially Replaced with Fly Ash, Bagasse Ash, and Paper Pulp
11.42 AM	MS 3287	Solar distillation as a sustainable solution for RO reject water treatment.
11.54 AM	MS 3295	AI-Driven Sustainable Concrete Strength Prediction
12.06 PM	MS 3364	Influence of Ceramic Tile Powder on the Fresh, Hardened and Durable Nature of M25 Concrete
12.18 PM	MS 3392	Durability assessment of High-Strength Concrete incorporating nano materials and quartz sand exposed to acidic and sulphate environments
12.30 PM	MS 3397	Effective Utilization Of C&D Waste Collected from Residential Building Used in Subgrade Layer of Road Construction
12.42 PM	MS 3410	Investigation of Low-Cycle Fatigue Behaviour in Mild Steel Welded Joints Using High-Power Ultrasonic Technique

Session 3: EC01 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Dr. Surya, Department of ECE, ACET, +91 63817 42727

Google Meet Link: <https://meet.google.com/gpg-decd-dbd>

Time	Paper ID	Paper Title
10.30 AM	MS 3008	Bidirectional Pneumatic Motor Circuit: A Simulation-Based Approach to Enhanced Precision and Thermal Management
10.42 AM	MS 3087	An Experimental Study on MoO ₃ Nanomaterial Coated U-Shaped Fiber Optic Evanescent Wave Sensor for Toluene Detection
10.54 AM	MS 3208	Study of Breakdown Voltage phenomenon for different Electrode Configuration with Spacers in 10:90 SF ₆ -N ₂ gas mixture
11.06 AM	MS 3242	Structural, Optical, and Photovoltaic Properties of Sr doped MoSe ₂ for Perovskites Solar Cell.
11.18 AM	MS 3279	Design and Analysis of 5G smart wearable antenna with reduced SAR
11.30 AM	MS 3284	Bi-LSTM-Based Prediction of State of Charge (SOC) and State of Health (SOH) in Li-ion and Lithium Phosphorus Batteries
11.42 AM	MS 3361	Comprehensive Review on Flexible Antenna - Fabrication Methods and Materials, Feeding Techniques, Antenna Printing Methods for Various IoT Based Futuristic Applications
11.54 AM	MS 3380	Design and Simulation of a MEMS-Based Dual Backplate Microphone
12.06 PM	MS 3383	Soil Nutrient Monitoring and Fertiliser Guidance System Based on Plant Condition using AI Tools
12.18 PM	MS 3391	Impact of Embedded System Based Automatic Spin Coating machine in the growth of Pure Zinc Oxide and Magnesium Doped Zinc Oxide Thin Films for LPG Gas Sensing Application
12.30 PM	MS 3415	Synthesis and characterization of AgNbO ₃ anti-ferroelectric ceramics for energy storage applications
12.42 PM	MS 3248	DIY Smart Dustbin Enhanced with Arduino and Servo Motor

Session 4: AMA01 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Dr. Abinprakash, Department of Maths, ACET, +91 63744 92168

Google Meet Link: <https://meet.google.com/jpc-apmr-kmh>

Time	Paper ID	Paper Title
10.30 AM	MS 3045	Subalgebras and Homomorphism in Pythagorean Fuzzy INK - algebras
10.42 AM	MS 3048	Z-Continuous and Z-Irresolute Maps in Neutrosophic Soft Topological Spaces
10.54 AM	MS 3068	On Rarely Neutrosophic Soft Regular Semi Continuous Functions.
11.06 AM	MS 3081	Operations On Bipolar Pythagorean Fuzzy Matrix
11.18 AM	MS 3082	Operations on Circular intuitionistic fuzzy matrices
11.30 AM	MS 3089	Some New Operations on Bipolar Fermatean Fuzzy Matrix
11.42 AM	MS 3398	Fuzzy Cognitive Mapping of Criteria Interaction in Sustainable Electrical Material Selection
11.54 AM	MS 3412	Graph-Theoretic SMP-Domination Strategies for Smart City Traffic and Environmental Monitoring
12.06 PM	MS 3413	A Comprehensive Analysis of the Corona Covering Number for Comb Products of Path and Cycle Graphs
12.18 PM	MS 3414	MSK Certified Domination Number of a Graph
12.30 PM	MS 3266	Structural and Modal Analysis of a Simulated Payload with Material Comparison for Chassis Optimization

Session 5: APH01 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Prof. Sumathi, Department of Physics, ACET, +91 99942 56034

Google Meet Link: <https://meet.google.com/mvo-fkts-vov>

Time	Paper ID	Paper Title
10.30 AM	MS 3134	Temperature and Layer Dependence of Water Droplet Interaction with Silicene Nanoribbons: A Molecular Dynamics Simulation Approach
10.42 AM	MS 3140	Effective Dielectric Properties of Non-Lead Solid Solutions: A Comparative Approach
10.54 AM	MS 3141	Impact Sensing Using Piezoceramics: A Handy Technique
11.06 AM	MS 3143	Quantum Materials from Fundamental Eigen states to Real-World Applications
11.18 AM	MS 3185	Tensile Mechanical Properties of Aluminium Nanowire: Simulations Studies
11.30 AM	MS 3204	Synthesis And Characterization of Nano Agri Materials Using SEM, TEM and DLS
11.42 AM	MS 3209	Electrical Conduction in $\text{Ba}_{0.835}\text{Ca}_{0.165}\text{Zr}_{0.09}\text{Ti}_{0.91}\text{O}_3$ Ceramic
11.54 AM	MS 3217	Comprehensive Structural Analysis of ZnTe and Mn-Doped ZnTe Thin Films
12.06 PM	MS 3222	Structural and Electrical Characteristics of $(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3$ - $\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3$ Ceramics
12.18 PM	MS 3224	Electrical Conduction in $\text{Y}_2\text{Ti}_2\text{O}_7$ Ceramic
12.30 PM	MS 3227	Comparative Study on the Synthesis and Characterization of Polyaniline/Multi-Walled Carbon Nanotube Nanocomposites

Session 6: APH02 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Prof. Mohanasudha, Department of Physics, ACET, +91 97888 14171

Google Meet Link: <https://meet.google.com/xeo-ubvyv-ajd>

Time	Paper ID	Paper Title
10.30 AM	MS 3264	Review on Nanocomposite of PB/PBA's $\text{Fe}_4[\text{Fe}(\text{CN})_6]3.4\text{H}_2\text{O}/\text{SiO}_2$ and $\text{Zn}_3[\text{Fe}(\text{CN})_6]2.1.33\text{H}_219.22/\text{SiO}_2$ and their derived in supercapacitors
10.42 AM	MS 3266	Structural and Modal Analysis of a Simulated Payload with Material Comparison for Chassis Optimization
10.54 AM	MS 3271	Thermal and Vibrational properties of Monolayer Buckled Bismuthene: an equilibrium molecular dynamics study
11.06 AM	MS 3297	Optimum Al-doping concentration in sol-gel dip-coated ZnO thin films
11.18 AM	MS 3323	Dielectric properties of ZnO modified $\text{SrBi}_4\text{Ti}_4\text{O}_{15}$ ceramics
11.30 AM	MS 3333	Structural, Impedance and Ferroelectric study in Sc-Substituted $0.94(\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3)-0.06(\text{BaTiO}_3)$ Compositions
11.42 AM	MS 3336	Structural and Optical Modulation of WO_3 Thin Films by TiO_2 Doping through Thermal Evaporation for Electrochromic Applications
11.54 AM	MS 3342	Effect of Solution pH on the Morphology and Electrochemical Performance of WO_3 Nanostructures for Pseudo-capacitor Applications
12.06 PM	MS 3376	Influence of ZnO Incorporation on WO_3 Thin Films Deposited by Thermal Evaporation for Electrochromic Applications
12.18 PM	MS 3401	Thermal annealing temperature evolution of structural and dielectric properties of MgFe_2O_4
12.30 PM	MS 3411	Enhancement of Surface Plasmon Resonance in bimetallic thin films
12.42 PM	MS 3256	A Review on Advances in Carbon Capture: Materials, Methods, and Performance Innovations

Session 7: ME01 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Dr.A.Karthik, Department of Mechanical Engg., ACET, +91 90036 78149

Google Meet Link: <https://meet.google.com/bxi-ozow-yzo>

Time	Paper ID	Paper Title
10.30 AM	MS 3022	Graphene Application for Enhanced Mechanical and Thermal Stability of High-Density Natural Rubber Twin Wiper Blades
10.42 AM	MS 3024	Investigation of the Impact of Injection Molding Parameters on Defects Using One-Way ANOVA: Analysis of Data Acquired through Computer- Aided Engineering
10.54 AM	MS 3027	Prediction of Residual Stresses in Injection Moulded Helmet Visor using Computer Aided Engineering and Artificial Neural Network (ANN)
11.06 AM	MS 3033	Complementary characterization of barely visible impact damage detected by digital shearography in an unmanned aerospace vehicle composite material
11.18 AM	MS 3034	The von Mises stress generation during longitudinal turning of 304 stainless steel
11.30 AM	MS 3094	Correlation between Weld Profile, Microhardness with Thermal Profile, Microstructure in the Al-SiC weldment during TIG, ATIG, PCTIG and PCATIG welding
11.42 AM	MS 3097	Higher-Order Mesh Generation for NACA 0008 and NACA 0010 Airfoils Using MATLAB
11.54 AM	MS 3163	Influence of Welding Parameters on 0.4mm Austenitic Stainless-Steel Weld Nuggets
12.06 PM	MS 3195	A Novel Composite for Automotive Body Panels
12.18 PM	MS 3197	Investigation on Wear Characteristics of Oxide-added Cast 7075 Aluminum Alloy
12.30 PM	MS 3200	Quality and Yield Improvement of Casting by Simulation Technique
12.42 PM	MS 3338	Highly efficient visible light active titanium based photocatalyst for the degradation of dye molecules and their kinetics

Session 8: ME02 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Dr. K. Madhan Muthu Ganesh, Department of Mechanical Engg., ACET

+91 90033 99219

Google Meet Link: <https://meet.google.com/yih-htew-jgd>

Time	Paper ID	Paper Title
10.30 AM	MS 3202	Using Casting Solidification Simulation Technique for prediction and removal of Casting Shrinkage in Ductile Iron Casting
10.42 AM	MS 3203	Comprehensive Steady-State Thermal Performance Analysis of Mobile CPU Heat Sinks: A Finite Element Method-Based Approach
10.54 AM	MS 3237	Numerical Investigation of Stiffened Light Gauge Steel Channel Sections under Compression: with and without concrete infill
11.06 AM	MS 3255	CFD Analysis of Solar Dehydration System Using Energy Storage
11.18 AM	MS 3265	Cooling Performance Investigation of Commercially Available Paraffin and Nanographene Enhanced Paraffin as Working Material in Thermal Management
11.30 AM	MS 3267	Energy Harvesting Characteristics of 0.20Pb(Zr,Ti)O ₃ /0.80Nitrile Butadiene Rubber Composite
11.42 AM	MS 3281	Comparative Study of Marula Oil and SAE Oil During Turning Operation
11.54 AM	MS 3289	Ultrasonic vibration-assisted single point incremental forming of straight groove component using AA8011 material
12.06 PM	MS 3293	Material Selection Study for Helmets Using Bionics and Bio-mimicry Principles
12.18 PM	MS 3294	Effect of exposure time on dimensional accuracy and mechanical behavior of 3D printed parts fabricated using vat photo polymerization
12.30 PM	MS 3301	Analysis of Lead Screw Mechanism in Continuous Passive Motion Machines: A Comparative Study of Thread Types
12.42 PM	MS 3302	Investigation of Natural Convection Fluid Flow Between Parallel Aluminum Composite Plates for Enhanced Thermal Performance

Session 9: ME03 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Dr. V. Mohankumar, Department of Mechatronics Engineering, ACET
+91 9952898270

Google Meet Link: <https://meet.google.com/xhx-yjwk-wnh>

Time	Paper ID	Paper Title
10.30 AM	MS 3303	Finite Element Analysis of Polylactic Acid (PLA) TPMS Lattice Structure of Human Bone under Compression Loading
10.42 AM	MS 3306	A review of the ded-waam of metals-material properties, process parameters and current challenges
10.54 AM	MS 3310	Assessment of key factors enabling adoption of industrial robots and automation for building a sustainable EV manufacturing ecosystem- an integrated ISM-Fuzzy MICMAC approach
11.06 AM	MS 3314	Comprehensive Design and Analysis of Chassis for Stability in All-Terrain Vehicle (ATV) Applications
11.18 AM	MS 3317	CFD-Based Investigation and Mitigation of Scaling-Induced Choking in Heat Exchanger
11.30 AM	MS 3318	A Study on Deflection and Stress Resultants in Laminated Stiffened Cylindrical Shell Panel with Cut-out
11.42 AM	MS 3321	Failure Analysis and Material Optimization of Stabilizer Link Rods in Bus Air Suspension Using ANSYS
11.54 AM	MS 3324	Optimization of Drilling Process Parameters Using Particle Swarm Optimization (PSO) in Drilling of Cenosphere/Epoxy Syntactic Foams
12.06 PM	MS 3327	Mechanical performance of fused filament fabricated Onyx composites: influence of infill patterns
12.18 PM	MS 3332	Advanced 3D Printing Techniques for Battery Manufacturing
12.30 PM	MS 3335	Springless rotary suspension system
12.42 PM	MS 3349	Development of High-Performance Multi-Functional Nano Composite Epoxy Coatings to enhance Mechanical and Thermal Stability for Steel Structures

Session 10: ME04 (Online)

Date: 26.06.2025

Time: 10.30 am to 01.00 pm

Session Chair: Prof. M.Selvaraju, Department of Mechanical Engineering, ACET

+91 9791975791

Google Meet Link: <https://meet.google.com/gki-ivtd-uih>

Time	Paper ID	Paper Title
10.30 AM	MS 3353	Compression and Shear response of 3D pierced fabric Cf/C composite
10.42 AM	MS 3362	Development and Optimization of Thermally Conductive Epoxy Resin at Low Filler Loading: Validated with Theoretical Models
10.54 AM	MS 3365	Machine learning based modelling of surface roughness of turned 3D printed PLA Parts
11.06 AM	MS 3366	Assessment of The Energy Efficiency of Diesel Locomotive Traction by the Method of Averaging Calculated Values
11.18 AM	MS 3369	Investigation of dimensional accuracy in stereolithography (SLA) 3d printing: impact of layer thickness, exposure time, print orientation, and curing time
11.30 AM	MS 3370	Analysis and Optimization of Process Parameters of Fused Deposition Modeling (FDM) based 3D Printing of PLA Copper Composite for Dimensional Accuracy
11.42 AM	MS 3382	Forecasting tool wear and surface roughness through Machine Learning techniques in the cold air-assisted micro-lubrication end milling process of AISI D2 tool steel
11.54 AM	MS 3393	Study of filler change, nitrogen addition to argon and intergranular susceptibility of GMAW SS409M weld
12.06 PM	MS 3399	Comparative Cost Analysis of dissimilar Al/Mg FSW weld modified with different coolant and FSP
12.18 PM	MS 3400	Thin supporting structures, peel off, and other defects in fused deposition modeling machines
12.30 PM	MS 3426	Design development and validation of Peltier heat pump-based AWGs