

International Conference on Greener Technologies in Mechanical Engineering ICGTME-2025

Organized by



Department of Mechanical Engineering
Birla Institute of Technology and Science Pilani, Pilani Campus

Under the



Diamond Jubilee Celebrations at BITS Pilani

February 3 - 4, 2025

**Birla Institute of Technology and Science Pilani, Pilani Campus,
Rajasthan, India**

SCHEDULE

Day 1: February 3, 2025

8:30 AM	Registration	J. C. Chaudhary NAB Auditorium
9:20–10:00 AM	Inaugural Function	J. C. Chaudhary NAB Auditorium
10:00–10:30 AM	Inaugural Talk: Prof. Pradip Dutta, Indian Institute of Science (IISc), Bangalore, India	J. C. Chaudhary NAB Auditorium
10:30–11:00 AM	Photo Session & High Tea	J. C. Chaudhary NAB Auditorium
11:00–11:30 AM	Plenary Lecture 1: Prof. Moghtada Mobedi, Shizuoka University, Japan	J. C. Chaudhary NAB Auditorium
11:30–12:00 AM	Plenary Lecture 2: Prof. Apurbba Kumar Sharma, Indian Institute of Technology Roorkee, India	J. C. Chaudhary NAB Auditorium
12:00–12:30 PM	Plenary Lecture 3: Mr. Vivek Kumar , Ansys	J. C. Chaudhary NAB Auditorium
12:30–01:00 PM	Plenary Lecture 4: Prof. Sunny Zafar, Indian Institute of Technology Mandi, India	J. C. Chaudhary NAB Auditorium
1:00–2:00 PM	Lunch	IC BITS
2:15–3:25 PM	Renewable Energy – 01 Session Chairs: Dr. Saket Verma & Prof. Amit Kumar	Room - 2234
2:15 – 2:25	RE_001 AI BASED REGENERATIVE BRAKING SYSTEM FOR AN EV	
2:25 – 2:35	RE_002 DESIGN AND DEVELOPMENT OF REGENERATION ENERGY MANAGEMENT SYSTEM FOR AN ELECTRIC VEHICLE	
2:35 – 2:45	RE_003 BIOMASS-BASED CATHODE MATERIALS FOR ZINC-ION HYBRID SUPER-CAPACITORS	
2:45 – 2:55	RE_004 SOLID OXIDE FUEL CELL COMBINED WITH GAS TURBINE FOR TOMORROW'S AVIATION	
2:55 – 3:05	RE_006 PERFORMANCE ANALYSIS OF A CONVENTIONAL DOUBLE-SLOPE SOLAR STILL FOR SOLAR DISTILLATION: EXPERIMENTAL FINDINGS	
3:05 – 3:15	RE_007 INNOVATIONS IN WASTE-TO-ENERGY TECHNOLOGIES: HARNESSING THE POWER OF WASTE FOR SUSTAINABLE ENERGY SOLUTIONS	
3:15 – 3:25	RE_022 SOLAR ASSISTED FLUIDIZED BED DRYING PROCESS FOR PEARL MILLET: A SUSTAINABLE APPROACH	
2:15–3:25 PM	Eco-centric Design Innovations - 01 Session Chairs: Dr Udit Narayan Pal & Prof. P Srinivasan	Room - 2235
2:15 – 2:25	EDI_003 2D MATERIALS-BASED MULTIPARAMETER SENSORS FOR GREENER TECHNOLOGIES	
2:25 – 2:35	EDI_005 CONTROLLED MICROWAVE CURING OF DIAPER AND FLYASH-BASED POLYCRETE COMPOSITE	
2:35 – 2:45	EDI_006 GREENING MIND FOR A GREENER FUTURE: UTILIZING DEEP LEARNING FOR THE RECONSTRUCTION AND PRESERVATION OF SHEKHAWATI HERITAGE PAINTINGS	
2:45 – 2:55	EDI_007 OPTIMIZING BIO-INSPIRED CONICAL GEOMETRIES FOR EFFICIENT FOG WATER COLLECTION ACROSS VARIED WETTABILITIES	
2:55 – 3:05	EDI_013 AN INTEGRATED APPROACH TO PRODUCT DESIGN: BRIDGING LEAN, SUSTAINABLE, AND SMART MANUFACTURING	
3:05 – 3:15	EDI_004 AN ECO-LUXURY ON WHEELS : A SUPERCAR REDEFINING CLEAN ENERGY	
3:15 – 3:25	EDI_017 GREENING MINDS FOR A GREENER FUTURE: HARNESSING ECO-TECHNOLOGICAL ADVERTISING THROUGH EMOTIONS	
2:15–3:25 PM	Sustainable Materials and Manufacturing Practices – 01 Session Chairs: Dr. Suchandan Pal & Prof. B K Rout	Room - 1219
2:15 – 2:25	SMM_001 EXPERIMENTAL INVESTIGATION AND PROCESS OPTIMIZATION IN ELECTRICAL DISCHARGE MACHINING OF SUSTAINABLE BERYLLIUM-FREE COPPER ALLOYS	
2:25 – 2:35	SMM_003 CASTING QUALITY IMPROVEMENT USING AUTOCAST SIMULATION	

2:35 – 2:45	SMM_006 SIMULATION OF CARBON EMISSION DYNAMICS IN THE MACHINING PROCESS USING HYBRID PETRI NETS AND DYNAMIC PARAMETER VARIATIONS	
2:45 – 2:55	SMM_008 BEHAVIOR OF ADDITIVELY MANUFACTURED STAINLESS STEELS TO CAVITATION AND SLURRY EROSION: A REVIEW	
2:55 – 3:05	SMM_009 PREDICTION OF SUSTAINABILITY PARAMETER CO2 EMISSION FOR TOOLS, FIXTURES AND PRODUCT PARTS	
3:05 – 3:15	SMM_011 KERF TAPER MINIMIZATION IN AJM: A NOVEL APPROACH WITH LOCAL SEASHORE SAND	
3:15 – 3:25	SMM_031 RISK ASSESSMENT OF PEARL MILLET SUPPLY CHAIN USING FUZZY BAYESIAN NETWORK	
2:15–3:25 PM	Industrial Engineering for the Green Economy - 01 Session Chairs: Dr. Sanjay Singh Rathore & Prof. Girish Kant	Room - CMST
2:15 – 2:25	IEG_001 NAVIGATING THE GREEN ECONOMY: CHALLENGES AND OPPORTUNITIES THROUGH GREEN SUPPLY CHAIN RESILIENCE AND GREEN AI	
2:25 – 2:35	IEG_002 GREEN AND LEAN INDUSTRIAL PRACTICES: A ROADMAP TO SUSTAINABLE AND EFFICIENT MANUFACTURING	
2:35 – 2:45	IEG_005 NUMERICAL AND EXPERIMENTAL STUDY ON TRANSIENT FLOW IN PRIMARY AIR FAN	
2:45 – 2:55	IEG_006 INVESTIGATION OF THE EFFECT OF TIME-DEPENDENT COVARIATES ON MAINTAINABILITY ANALYSIS	
2:55 – 3:05	IEG_007 SORGHUM AS A SUSTAINABLE FOOD CHOICE: UNDERSTANDING CONSUMPTION PATTERNS AND PREFERENCES	
3:05 – 3:15	IEG_008 EVALUATING DEMAND FORECASTING ALGORITHMS FOR THE INDIAN AUTOMOBILE SECTOR: A COMPARATIVE STUDY OF LSTM AND DES AMIDST MACROECONOMIC INFLUENCES	
3:15 – 3:25	RE_038 DESIGN AND ANALYSIS OF VERTICAL AXIS WIND TURBINE FOR POWER GENERATION	
2:15–3:25 PM	Sustainable Advances and Innovations in Thermal Engineering – 01 Session Chairs: Prof Satish K Dubey & Prof. Murali Palla	Room - Civil Seminar Room
2:15 – 2:25	SAI_001 ENERGY, EXERGY, AND ENVIRONMENTAL (3E) ANALYSIS OF CLEAN REFRIGERANT BASED HEAT PUMP FOR HOTEL APPLICATION IN INDIA	
2:25 – 2:35	SAI_006 COMPARATIVE ANALYSIS OF R600A, R125, AND R22 REFRIGERANTS USING MATLAB: PERFORMANCE INSIGHTS FOR FUTURE APPLICATIONS	
2:35 – 2:45	SAI_008 TRANSIENT MODEL OF COMPACT HEAT EXCHANGER FOR BLEED AND BLEED-LESS AIR CYCLE AIRCRAFT ENVIRONMENT CONTROL SYSTEM USING DYMOLA	
2:45 – 2:55	SAI_009 CHALLENGES IN THE THERMAL MANAGEMENT OF ALL-ELECTRIC AIRCRAFT	
2:55 – 3:05	SAI_010 MICROENCAPSULATED PHASE CHANGE MATERIAL SLURRIES FOR COOL THERMAL ENERGY STORAGE	
3:05 – 3:15	SAI_011 THERMO-HYDRODYNAMIC ANALYSIS OF SLIPPERY ACTION BASED ROUGH-POROUS HYDRODYNAMIC INCLINED PLATE SLIDER BEARING LUBRICATED WITH NON-NEWTONIAN LUBRICANTS	
3:15 – 3:25	SAI_029 LIFE CYCLE ASSESSMENT OF HYDROGEN PRODUCTION BY STEAM METHANE REFORMING AND COAL GASIFICATION METHOD	
2:15–3:25 PM	Sustainable Advances and Innovations in Thermal Engineering – 02 Session Chairs: Prof. Anshuman Dalvi & Prof. A R Harikrishnan	Room - Chemical Seminar Room
2:15 – 2:25	SAI_007 PERFORMANCE INVESTIGATION AND COMPARATIVE EXERGETIC ANALYSIS OF VAPOR COMPRESSION REFRIGERATION SYSTEM USING REFRIGERANT R134A, R1234YF, CO2 AND R410A	
2:25 – 2:35	SAI_012 SOLAR CONCENTRATOR WITH GANGED HELIOSTATS ON A ROTATING PLATFORM AND PERFORMANCE VALIDATION USING SOLAR PILOT SIMULATION	
2:35 – 2:45	SAI_013 EXPERIMENTAL INVESTIGATION AND ECONOMIC ANALYSIS OF A HUMIDIFICATION-DEHUMIDIFICATION BASED DESALINATION SYSTEM ACROSS INDIA	
2:45 – 2:55	SAI_015 ELECTRO-THERMAL OPTIMIZATION OF THERMOELECTRIC COOLER SYSTEMS FOR ADVANCED PHOTONIC PACKAGING APPLICATIONS	

2:55 – 3:05	SAI_017 COLBURN J FACTOR ANALYSIS FOR OFFSET STRIP FINS IN COMPACT HEAT EXCHANGERS		
3:05 – 3:15	SAI_020 THERMAL PERFORMANCE ANALYSIS OF BIO-BASED PHASE CHANGE MATERIAL INTEGRATED COOL ROOF COMPOSITE FOR PASSIVE COOLING IN BUILDINGS		
3:15 – 3:25	SAI_036 THERMAL MANAGEMENT OF ELECTRIC VEHICLE BATTERIES USING MAGNETIC HYBRID-NANOFLUID FLOW AND CONFIGURABLE MAGNETIC BAFFLES		
2:15–3:25 PM	Case Studies and Best Practices - 01 Session Chairs: Dr. Bhausaheb Ashok Botre & Prof. M K Soni	Room - Smart Building Lab	
2:15 – 2:25	CBP_001 OVERVIEW OF MEMBRANE TECHNOLOGY IN INDUSTRIAL EFFLUENT TREATMENT		
2:25 – 2:35	CBP_002 NUMERICAL ANALYSIS ON HEAT TRANSFER CHARACTERISTICS OVER A NACA2412 AIRFOIL		
2:35 – 2:45	CBP_003 FROM MANUFACTURING TO MARKETING: ENHANCING UNIVERSITY STUDENTS ADVERTISING LITERACY TO COMBAT GREENWASHING		
2:45 – 2:55	CBP_004 COMPARATIVE ANALYSIS OF MACHINE LEARNING MODELS FOR PREDICTION OF MAIZE PRODUCTION		
2:55 – 3:05	CBP_006 ROBUST CHECKS FOR THE PRODUCT BUILD, CONCERN TRACKING AND RESOLUTION DURING ITS LIFECYCLE.		
3:05 – 3:15	CBP_007 IMPORTANCE OF GNOVA-C IN AUTOMOTIVE FOR DEFECT-FREE PRODUCT		
3:15 – 3:25	CBP_014 SERVICE QUALITY AND PRICE PERCEPTION OF B2C SUPPLY CHAIN AMONG STUDENT COMMUNITY		
3:25–3:45 PM	Networking Break		
3:45–4:55 PM	Renewable Energy - 02 Session Chairs: Prof. Anuj Kumar Sharma & Prof. Sachin U Belgamwar		Room - 2234
3:45 – 3:55	RE_008 ADVANCING URBAN TRANSPORTATION WITH HYDROGEN-COMPRESSED NATURAL GAS BLENDS: ENVIRONMENTAL AND ECONOMIC INSIGHTS		
3:55- 4:05	RE_009 A NOVEL DESIGN OF HYBRID SOLAR WAVE ENERGY CONVERTER FOR SUSTAINABLE OFFSHORE POWER GENERATION		
4:05 – 4:15	RE_010 NUMERICAL SIMULATION ANALYSIS OF VARIABLE AIR-FLOW RATE FOR ENHANCED COOLING IN TRIANGULAR PV/T ARRAY		
4:15 – 4:25	RE_011 A REVIEW OF DOMESTIC SOLAR CONCENTRATORS FOR ENERGY GENERATION IN CENTRAL INDIA BELT		
4:25 – 4:35	RE_013 HYBRID SOLAR THERMAL AND ORGANIC RANKINE CYCLE INTEGRATION FOR EFFICIENT GREEN HYDROGEN PRODUCTION		
4:35 – 4:45	RE_014 CFD-BASED ANALYSIS OF COATED SOLAR PV PANELS FOR CONCENTRATED SOLAR POWER APPLICATIONS IN DIVERSE INDIAN CLIMATES		
4:45 – 4:55	RE_029 RISK MITIGATION IN DEEP LOCALIZATION STRATEGY: A STRUCTURAL EQUATION MODELING ANALYSIS FROM THE INDIAN SOLAR SECTOR PERSPECTIVE		
3:45–4:55 PM	Eco-centric Design Innovations - 02 Session Chairs: Prof. Sachin Waigaonkar & Prof. R P Mishra	Room - 2235	
3:45 – 3:55	EDI_014 SITE SELECTION FOR EV CHARGING STATIONS: INTEGRATING MCDM AND MACHINE LEARNING APPROACH		
3:55- 4:05	EDI_015 DEVELOPMENT OF AN OPTO- μ -FLUIDIC SENSOR FOR PESTICIDE RESIDUE: SUSTAINABLE AND ECO-CENTRIC INNOVATION		
4:05 – 4:15	EDI_016 MOLECULAR DYNAMICS STUDY OF METAL SURFACE WITH POLYMER FOR ADHESION PROPERTY		
4:15 – 4:25	SAI_027 INFLUENCE OF ENCLOSURE SHAPE ON MHD NANOFLUID FLOW BEHAVIOR AND ENTROPY GENERATION IN GEOMETRICALLY CONSTRAINED TRAPEZOIDAL SYSTEM		
4:25 – 4:35	SAI_043 INNOVATIVE AND SUSTAINABLE TEMPERATURE-CONTROLLED HEALTHCARE LOGISTIC SOLUTION		
4:35 – 4:45	SAI_037 MICRO-THERMO-FLUIDIC WITH INTEGRATED HEATER FOR TEMPERATURE-ASSISTED DNA AMPLIFICATION		
4:45 – 4:55	SMM_052 INFLUENCE OF NANOPARTICLES ON THE MECHANICAL PROPERTIES OF THE FIBER METAL LAMINATES		

3:45–4:55 PM	Sustainable Materials and Manufacturing Practices – 02 Session Chairs: Prof. Vincent Shantha Kumar & Prof. Prateek Kala	Room - 1219
3:45 – 3:55	SMM_013 MULTI-PHYSICS SIMULATION AND EXPERIMENTAL INVESTIGATION OF NICKEL POWDER BASED MICROWAVE CAST	
3:55- 4:05	SMM_014 EXTENSIVE ANALYSIS OF CARPET WASTE GENERATION, AND THEIR MANAGEMENT FOR LIGHT WEIGHT ENGINEERING APPLICATION	
4:05 – 4:15	SMM_015 ANALYSIS OF MECHANICAL PROPERTIES OF EPDM RUBBER GROMMET MATERIALS USING MIXER DESIGN STRATEGY	
4:15 – 4:25	SMM_016 TENSILE, FLEXURAL, AND MACHINABILITY INVESTIGATION OF POLYMER NANOCOMPOSITES REINFORCED WITH CARON NANO MATERIALS	
4:25 – 4:35	SMM_018 INTEGRATING SMART TECHNIQUES, TECHNOLOGIES AND CIRCULAR ECONOMY PRINCIPLES FOR SUSTAINABLE MANUFACTURING ECOSYSTEMS	
4:35 – 4:45	SMM_020 EFFECT OF CHARGE GEOMETRY ON MICROWAVE-BASED HYBRID HEATING OF BULK METALS: 3D MULTIPHYSICS SIMULATION AND EXPERIMENTATION	
4:45 – 4:55	SMM_038 EXPLORING THE MICROSTRUCTURE AND CORROSION RESISTANCE OF HAP/TIO2 COATINGS ON TI-6AL-4V: A COMPREHENSIVE EXPERIMENTAL STUDY	
3:45–4:55 PM	Industrial Engineering for the Green Economy - 02 Session Chairs: Prof. Satyendra K Sharma & Prof. Aneesh AM	Room - CMST
3:45 – 3:55	IEG_010 IDENTIFYING KEY FACTORS FOR BUILDING AN EFFICIENT SUPPLY CHAIN OF EV COMPONENTS IN INDIA USING MCDM APPROACH	
3:55- 4:05	IEG_012 CARBON-CONSCIOUS SUPPLY CHAIN DESIGN: A MULTI-OBJECTIVE APPROACH TO ECONOMIC AND ENVIRONMENTAL BALANCE	
4:05 – 4:15	IEG_013 GREEN SUPPLY CHAIN OPTIMIZATION: A MULTI-OBJECTIVE STOCHASTIC MODEL SOLVED WITH A HYBRID METAHEURISTIC APPROACH	
4:15 – 4:25	IEG_014 INNOVATIVE APPROACHES TO WASTE REDUCTION: MACHINE LEARNING APPLICATIONS IN INDUSTRIAL ENGINEERING	
4:25 – 4:35	IEG_015 SUPPLIER SELECTION IN CONSTRUCTION INDUSTRY BASED ON ENVIRONMENTAL PERFORMANCE: A LIFE CYCLE ASSESSMENT APPROACH	
4:35 – 4:45	CEP_004 EVALUATING ETHANOL BLENDING STRATEGIES FOR INDIA: A MULTI-CRITERIA DECISION-MAKING APPROACH	
4:45 – 4:55	RE_034 COMPUTATIONAL APPROACH TO DUST MANAGEMENT IN SOLAR POWER PLANT	
3:45–4:55 PM	Sustainable Advances and Innovations in Thermal Engineering – 03 Session Chairs: Prof. R Parameshwaran & Prof. T C Bera	Room - Civil Seminar Room
3:45 – 3:55	SAI_018 PERFORMANCE EVALUATION OF VARIOUS AIR CYCLE SYSTEMS FOR AIRCRAFT ENVIRONMENTAL CONTROL SYSTEM USING ENDO-REVERSIBLE THERMODYNAMIC MODEL	
3:55- 4:05	SAI_019 COLBURN 'J' FACTOR CORRELATION DEVELOPMENT FOR MICROCHANNEL HEAT EXCHANGER	
4:05 – 4:15	SAI_021 LAB SCALE EXPERIMENTAL OBSERVATIONS ON FLASH EVAPORATION: LIQUID UNDER SUB-ATMOSPHERIC PRESSURE	
4:15 – 4:25	SAI_024 HEALTH MONITORING OF AN AIRCRAFT ENVIRONMENTAL CONTROL SYSTEM HEAT EXCHANGER	
4:25 – 4:35	SAI_026 INVESTIGATION OF TEMPERATURE DISTRIBUTION IN EVAPORTORS USING SUSTAINABLE REFRIGERANTS FOR EFFICIENT REFRIGERATION SYSTEM	
4:35 – 4:45	SAI_028 FLUID-STRUCTURE-THERMAL INTERACTION STUDY OF A LABORATORY SCALE MINICHANNEL HEAT EXCHANGER FOR MODERATELY HIGH TEMPERATURE APPLICATIONS	
4:45 – 4:55	SMM_046 WAVELET TRANSFORM-ENHANCED CNN ARCHITECTURE FOR ENERGY-EFFICIENT BEARING FAULT DIAGNOSIS: A SUSTAINABLE APPROACH TO INDUSTRIAL MAINTENANCE	
3:45–4:55 PM	Sustainable Materials and Manufacturing Practices – 03 Session Chairs: Prof. Navneet Khanna & Prof. Venkatesh K P Rao	Room - Chemical Seminar Room
3:45 – 3:55	SMM_021 EFFECT OF HEATING RATE ON THE MICROSTRUCTURE OF MICROWAVE-CAST AA5083	
3:55- 4:05	SMM_022 REVIEW ON APPLICATION OF MOLECULAR DYNAMICS SIMULATIONS FOR NANO-M/C OF METALLIC AND NON-METALLIC SURFACES	

4:05 – 4:15	SMM_025 ADDITIVELY MANUFACTURED TOOLING IN SHEET METAL FORMING PROCESSES-A REVIEW	
4:15 – 4:25	SMM_026 LEAN SIX SIGMA AND INDUSTRY 4.0 INTEGRATION FOR SUSTAINABLE MANUFACTURING: RANKING ENABLERS AND BARRIERS USING BEST WORST METHOD	
4:25 – 4:35	SMM_027 SHOCK WAVE GOVERNED HIGH VELOCITY FORMING OF THIN SHEET METALS-A REVIEW	
4:35 – 4:45	SMM_030 INVESTIGATION OF MHD CONVECTION IN THE ECDM PROCESS FOR MICROCHANNEL FABRICATION	
4:45 – 4:55	SMM_051 ANALYSIS OF MICRO-MACHINED SURFACES	
3:45–4:55 PM	Case Studies and Best Practices - 02 Session Chairs: Mr. Sushilkumar R Vishwakarma & Prof. M S Dasgupta	Room - Smart Building Lab
3:45 – 3:55	CBP_008 RGA WITH RWUP FOR SUSTAINABLE FUTURE	
3:55- 4:05	CBP_009 CRF- CLAMPING WITH CARE, ROUTING INNOVATION & DRIVE WITH CONFIDENCE FOR GREENER AUTOMOTIVE	
4:05 – 4:15	CBP_010 SCENARIO ANALYSIS OF ALTERNATE FUELS AND TECHNOLOGY MIX FOR AUTOMOBILE SUSTAINABILITY - CASE STUDY OF INDIA	
4:15 – 4:25	CBP_011 PORTFOLIO OPTIMIZATION IN THE GREEN ECONOMY: A CASE STUDY OF RENEWABLE ENERGY STOCKS IN THE INDIAN MARKET	
4:25 – 4:35	CBP_012 SMART VIBRATING BEAM – AN INNOVATIVE EDUCATING TOOL FOR ACTIVE VIBRATION CONTROLS	
4:35 – 4:45	CBP_013 AUTOMOTIVE LIGHTING DESIGN AND POLICY FRAMEWORK FOR PRODUCT LIFECYCLE END OF LIFE -A CASE STUDY.	
4:45 – 4:55	CBP_016 DESIGN AND DEVELOPMENT OF FODDER PELLETS USING LOCALLY AVAILABLE LEAVES FOR LIVESTOCK FEEDING: A SUSTAINABLE APPROACH	
5 PM	Networking	FD II (Thermal Science LAB-2123)
7:30 PM-8:30 PM	Conference Dinner	VFAST Lawn

Day 2: February 4, 2025

9:30 AM	Registration and Breakfast	6106
10:00–10:30 AM	Plenary Lecture 5: Dr.-Ing. Stephan Kabelac, Leibniz University, Hannover, Germany	6106
10:30–11:00 AM	Plenary Lecture 6: Prof. Perumal Nithiarasu, Swansea University, Swansea, UK	6106
11:00–11:30 AM	Plenary Lecture 7: Prof. Sara Rainieri, Università di Parma, Italy	6106
11:30–12:00 Noon	Plenary Lecture 8: Dr Viswas V Wadekar, Former Director, Aspen Technology, France	6106
12:00–12:30 PM	Research Talk: Sustainable Manufacturing of Polymer Products: A case study of Rotational Molding of Process by Prof. Sachin Waigaonkar	6106
12:30–1:00 PM	Photo Session & Campus Visit	6106
1:00–2:00 PM	Lunch	IC BITS
2:00–3:00 PM	Renewable Energy – 03 Session Chairs: Prof. H D Mathur & Prof. Abhijit K Digalwar	Room – 2234
2:00 – 2:10	RE_019 AI AND ML BASED ROAD DETECTION FOR OPTIMIZING POWER SOURCE SELECTION FOR A HEV	
2:10 – 2:20	RE_021 RHEOLOGICAL EVALUATION OF CASTOR NANO-ENHANCED BIO-LUBRICANTS	
2:20 – 2:30	RE_018 PERFORMANCE ANALYSIS AND OPTIMIZATION OF LEAD-FREE FLEXIBLE PEROVSKITE SOLAR CELLS	
2:30 – 2:40	RE_023 GREEN HYDROGEN: THE FUTURE OF CLEAN TRANSPORT IN INDIA	
2:40 – 2:50	RE_024 SECOND LAW BASED ANALYSIS OF HEAT TRANSFER CIRCUIT FOR TRANSPORTING SOLAR HEAT FROM THE COLLECTOR TO THE STEAM GENERATOR OF A PARABOLIC TROUGH COLLECTOR BASED SOLAR THERMAL POWER PLANT USING DIFFERENT HEAT TRANSFER FLUIDS	
2:50 – 3:00	RE_025 CENTRALIZED ENERGY BALANCE CONTROLLER WITH MUTUAL COORDINATION OF NEIGHBORING PROSUMER MICROGRIDS	
2:00–3:00 PM	Renewable Energy – 04 Session Chairs: Prof. Dileep Kumar Gupta & Prof. Sharad Shrivastava	Room – 2235
2:00 – 2:10	RE_026 SECURE ARCHITECTURE FOR BLOCKCHAIN-BASED P2P ENERGY TRADING IN CLUSTERED MICROGRIDS	

2:10 – 2:20	RE_027 ASSESSMENT OF DAIRY SCUM BIODIESEL MIXED WITH OXYGENATED ADDITIVES AS AN ALTERNATE FUEL IN DIESEL ENGINES AT ENHANCED COMPRESSION RATIO	
2:20 – 2:30	RE_030 GOVERNMENT INITIATIVES FOR RENEWABLE ENERGY TO COMBAT CLIMATE CHANGE AND TO PROMOTE SDGS IN INDIA	
2:30 – 2:40	RE_031 PHASE CHANGE MATERIAL FOR MANAGING SOLAR INTERMITTENCY IN SOLAR-POWERED COLD STORAGE	
2:40 – 2:50	RE_032 AUTOMATED TEMPERATURE CONTROLLED SOLAR PANNEL FOR SUSTAINABLE POWER OUTPUT OF SPV SYSTEM	
2:50 – 3:00	RE_033 A COMPREHENSIVE REVIEW OF BIO-ETHANOL PRODUCTION FROM BY-PRODUCTS OF WASTE BIOMASS FOR GREENER TECHNOLOGY	
2:00–3:00 PM	Sustainable Materials and Manufacturing Practices – 04 Session Chairs: Prof. Sudhy S Panicker & Prof. Geetha Bhatt	Room – 1219
2:00 – 2:10	SMM_032 THE IMPACT OF MULTIPLE CHEMICAL PROCESSING ON THE PHYSICAL CHARACTERISTICS, MECHANICAL, THERMAL, AND STRUCTURAL CAPABILITIES OF CALOTROPIS GIGANTEA BAST FIBER	
2:10 – 2:20	SMM_033 THE INFLUENCE OF CHEMICAL TREATMENT AND FIBER LOADING ON THE CHARACTERISTICS OF BAUHINIA VAHLII BAST FIBERS/ACRYLONITRILE BUTADIENE STYRENE COMPOSITES FOR AUTOMOBILE BODY PARTS Sudhy	
2:20 – 2:30	SMM_034 FRACTOGRAPHY STUDY OF HASTELLOY X JOINTS THROUGH MICROWAVE HYBRID HEATING (MHH)	
2:30 – 2:40	SMM_035 EFFECT OF MONTMORILLONITE NANO-CLAY ON THE MECHANICAL AND THERMAL PROPERTIES OF PLA-BASED 3D-PRINTED HONEYCOMB STRUCTURES	
2:40 – 2:50	SMM_036 EXPLORING THE INFLUENCE OF CHROMIUM AND TITANIUM OXIDES ON WEAR RESISTANCE ON 17-4 PH SS IN 3D-PRINTED VS. CAST STRUCTURES	
2:50 – 3:00	SMM_037 SUSTAINABLE SOLUTIONS FOR BULK PROCESSING: EVALUATING THE MOLDABILITY OF RECYCLED PLASTICS IN ROTATIONAL MOLDING	
2:00–3:00 PM	Sustainable Materials and Manufacturing Practices – 05 Session Chairs: Dr. Malisetty Leela Shankar & Prof. Gaurav Watts	Room – CMST
2:00 – 2:10	SMM_039 ANALYSIS AND DEVELOPMENT OF INCLINED HOLE IN GLASS FIBER REINFORCED PLASTIC BY PERCUSSION LASER DRILLING TECHNIQUES USING CO2 LASER	
2:10 – 2:20	SMM_041 APPLICATION OF MACHINE LEARNING ALGORITHMS TO PREDICT VARIOUS MACHINABILITY PARAMETERS IN SUSTAINABLE MACHINING OF TI-6AL-4V”	
2:20 – 2:30	SMM_042 COMPARATIVE LIFE CYCLE ASSESSMENT IN DRILLING OF INCONEL 718 SUPERALLOY UNDER DRY & CRYOGENIC CONDITIONS	
2:30 – 2:40	SMM_043 SYNTHESIS AND CHARACTERIZATION OF MAGNESIUM FERRITE NANOPARTICLES	
2:40 – 2:50	SMM_044 ECOLOGICAL IMPACT ANALYSIS OF A HYPERLOOP MODEL	
2:50 – 3:00	SMM_049 ROBOT-BASED ASSEMBLY FOR SUSTAINABILITY AND ITS ECONOMIC IMPACT	
2:00–3:00 PM	Sustainable Advances and Innovations in Thermal Engineering – 04 Session Chairs: Prof. Anupam Singhal & Prof. Amit R Singh	Room – Civil Seminar Room
2:00 – 2:10	SAI_031 PERFORMANCE OF HYDRODYNAMIC ENERGY EXTRACTION IN SINGLE AND TANDEM CONFIGURATION OF FLAPPING FOILS	
2:10 – 2:20	SAI_032 THERMODYNAMIC ANALYSIS OF ONLY NH3 AND NH3-CO2 CASCADE REFRIGERATION SYSTEM IN CONTEXT OF LOW CHARGE NH3 FOR INDIAN CLIMATE CONDITIONS	
2:20 – 2:30	SAI_033 COMPARATIVE EXPERIMENTAL INVESTIGATION OF FLUID FLOW BEHAVIOUR OF DIVERSE NANO FLUID FLOW INSIDE CONCENTRIC TUBE HEAT EXCHANGER HAVING SPIRAL TUBE WITH OR WITHOUT DIVERSE INSERTS	
2:30 – 2:40	SAI_034 DESIGN AND ANALYSIS OF A STANDALONE TYPE MICRO-COMBUSTION-BASED POWER GENERATOR USING FLUID MECHANICS AND HEAT TRANSFER PRINCIPLES	
2:40 – 2:50	SAI_035 NUMERICAL AND EXPERIMENTAL INVESTIGATIONS TO UNDERSTAND MELTING BEHAVIOUR OF PHASE CHANGE MATERIALS IN THE ANNULAR SPACE OF DOUBLE PIPE HEAT EXCHANGERS USED AS THERMAL ENERGY STORAGE SYSTEM.	
2:00–3:00 PM	Sustainable Advances and Innovations in Thermal Engineering – 05 Session Chairs: Prof. Ravindra Giriraj Bhardwaj & Prof. Biswadip Shome	Room - Chemical Seminar Room
2:00 – 2:10	SAI_038 EVALUATION OF ROOF INSULATION MATERIALS AND CROP RESIDUES FOR MITIGATING HEAT STRESS IN LIVESTOCK SHELTERS: A DYNAMIC THERMAL SIMULATION APPROACH	
2:10 – 2:20	SAI_040 EXPLORING UNACCOUNTED FACTORS IN THERMAL AND ABLATION DYNAMICS OF HIGH-SPEED PROJECTILE COATINGS	

2:20 – 2:30	SAI_039 ON THE ROLE OF ELECTRIC CONDUCTIVITY DURING INTERACTION OF DROPS UNDER ELECTRIC FIELDS	
2:30 – 2:40	SAI_041 DATA-DRIVEN NEURAL NETWORK MODELS FOR RAPID EVALUATION OF COMPACT HEAT EXCHANGER PERFORMANCE FOR WAVY FIN CONFIGURATION	
2:40 – 2:50	SAI_042 NUMERICAL SIMULATION OF SOLIDIFICATION OF A DROPLET ON SOLID SURFACE IN THE PRESENCE OF GASEOUS PHASE	
2:00–3:00 PM	Miscellaneous Session Chairs: Prof. Gajendra Singh Chauhan & Prof. Shyam Sunder Yadav	Room - Smart Building Lab
2:00 – 2:10	SMM_047 IMPACT OF HEAT TREATMENT ON THE DEFORMATION BEHAVIOUR OF AA7075 ALLOY SHEETS	
2:10 – 2:20	SMM_048 OPTIMIZING BATTERY PACK JOINING FOR ELECTRIC VEHICLES: CHALLENGES AND ML-DRIVEN SOLUTIONS	
2:20 – 2:30	CBP_018 GREEN HYDROGEN PRODUCTION POTENTIAL AND ITS SUPPLY CHAIN IN INDIA	
2:30 – 2:40	RE_036 ENHANCING THERMAL ENERGY STORAGE: CFD ANALYSIS OF RT-35 PCM MELTING DYNAMICS WITH FE3O4 NANOCOMPOSITES	
2:40 – 2:50	EDI_008 INVESTIGATION OF ROTARY KILN TYRES USING NUMERICAL AND SIMULATION TECHNIQUES	
2:50 – 3:00	CEP_003 FOSTERING AGRICULTURAL UNITY: DIGITAL TECHNOLOGIES FOR COLLABORATION REINTERPRETED	
3:00 – 3:10	RE_039 EXPERIMENTAL ANALYSIS OF HEAT TRANSFER IN TRANSITIONAL FLOW THROUGH CIRCULAR CHANNELS	
3:00 – 3:30 PM	High Tea	6106
3:30–4:00 PM	Valedictory Function	6106