



# INCOM 2026

## 3<sup>rd</sup> International Conference on Mechanical Engineering

08 – 10 January, 2026

Department of Mechanical Engineering

Jadavpur University, Kolkata, India



### INCOM 2026: Schedule of Technical Presentations (Offline)

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS1A [08/01/26: 02:35 PM- 03:50 PM]	Computational Materials Mechanics & Structural Optimization	1	5	27	Investigation on Thermo-Mechanical Properties of Graphene-Carbon Nanotube/Thermoplastic Polyurethane Hybrid Nanocomposites	Pritam Pain
		2	5	47	ACCELERATING FATIGUE SIMULATIONS USING AN IMPLICIT CYCLE SCALE INTEGRATOR	Manan Ghosh
		3	2	172	STRESS AND DEFORMATION ANALYSIS OF TOPOLOGICALLY OPTIMIZED HDPE ROLLERS FOR INDUSTRIAL CONVEYORS	SATYAJIT ROY
		4	5	242	MECHANICAL CHARACTERISTICS OF THE JOHNSON-COOK MATERIAL PARAMETER FOR COPPER MK-8 (HEATING UP TO 450OC AND HOLDING FOR 35 MINUTES) USING FEM	Kumar Abanindra Jana
		5	2	273	FATIGUE-ASSURED TOPOLOGY OPTIMIZATION (FATO) FRAMEWORK FOR LIGHTWEIGHT HYDRAULIC PISTON ROD	BIPLAB DEY

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS1B [08/01/26: 02:35 PM- 03:50 PM]	ML for Thermofluids & Heat Transfer	1	9	115	ENTROPY GENERATION AND FLOW REGIME MAPPING IN HORIZONTAL TUBES: A MACHINE LEARNING APPROACH	BHASKAR HALDER
		2	9	178	MACHINE LEARNING-GUIDED THERMAL OPTIMIZATION OF ASYMMETRIC HEATING IN A NANOFLUID-FILLED ENCLOSURE	Sumanta Banerjee
		3	9	187	A HYBRID CFD-ML APPROACH FOR RECONSTRUCTING 3D FIN THERMAL FIELDS FROM 2D SIMULATION	Soumyadeep Dey
		4	9	225	COMPLEX NETWORK-BASED REGIME IDENTIFICATION OF FROSTING ON SHPB-COPPER SURFACE	MANISH KUMAR MANNA



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TS1C [08/01/26: 02:35 PM- 03:50 PM]	Thermal Process Modelling	1	1	2	A THERMODYNAMIC MODEL TO STUDY PERFORMANCE OF AN INTERNAL COMBUSTION ENGINE	Bageesha Barman
		2	1	3	EVOLUTION OF TEMPERATURE FIELD DURING LASER TREATMENT OF A TUMOR	Pankaj Keshari
		3	1	8	MICRO-LASER JOINING OF TWO THIN GLASS SUBSTRATES	Sayantan Sinha Biswas
		4	1	9	NUMERICAL STUDY ON LASER JOINING OF HIGH TO LOW MELTING DISSIMILAR MATERIALS IN LAP CONFIGURATION	Asish Tripathy
		5	1	153	CHARACTERIZATION OF PREMIXED ALCOHOL-AIR FLAMES IN MESO-SCALE COMBUSTORS	Koushik Murmu

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS1D [08/01/26: 02:35 PM- 03:50 PM]	Vibration of Graded and Composite Structures	1	2	11	VIBRATION CHARACTERISTIC OF POROUS SIGMOID FUNCTIONALLY GRADED SANDWICH PLATE FOR DIFFERENT ASPECT RATIO USING FEM	Mr. SWAGATA SHANNIGRAHI
		2	2	78	DETERMINATION OF NONLINEAR FREQUENCIES FOR FUNCTIONALLY GRADED CNT-REINFORCED COMPOSITE BEAM ON GRADED ELASTIC FOUNDATION	Hareram Lohar
		3	2	122	FREE VIBRATION OF SPINNING TWISTED POROUS FUNCTIONALLY GRADED TAPERED BLADE UNDER NONLINEAR THERMAL DISTRIBUTION	RITWIK MANDAL
		4	3	183	RANDOM VIBRATION OF VISCOELASTIC STRUCTURE: EXPERIMENTAL AND NUMERICAL VALIDATION	Rajendra Kumar Praharaj
		5	2	206	Free vibration characteristics of multiscale functionally graded (FG) carbon nanotube (CNT) - metal – ceramic composite plate	Dr. Ranojit Banerjee



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TS1E [08/01/26: 02:35 PM- 03:50 PM]	Advanced Welding and Joining Technologies	1	4	18	Joining of Dissimilar Aluminium and Magnesium Alloys Using micro-Friction Stir Welding ( $\mu$ FSW) process	Meghnath Sen
		2	4	190	APPLICATION OF THE ANALYTICAL HIERARCHY PROCESS FOR EXPLORING OPTIMAL WELDABILITY DURING TIG WELDING OF Al-7.7%SiC COMPOSITE	Soumojit Dasgupta
		3	4	209	LASER JOINING OF METAL-POLYMER HYBRID STRUCTURES: INSIGHTS INTO FORMATION QUALITY AND DEFECTS	Rajesh Guria
		4	4	255	MODELING AND SIMULATION OF TRANSIENT THERMAL HISTORY IN TIG WELDING OF AISI 304 STAINLESS STEEL	Ahana Nath
		5	4	267	A Comparative Study on Friction Stir Lap Welding of Similar and Dissimilar Joints Using Al 6061-T6 Alloy	LALITA PRASAD NAYAK

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS1F [08/01/26: 02:35 PM- 03:50 PM]	Fibre & Hybrid Composites	1	5	21	INFLUENCE OF WEAVE ARCHITECTURES ON TENSILE PERFORMANCE BY VARYING CARBON AND GLASS FIBRE PLIES	Sushant Saurabh
		2	5	22	EFFECT OF DIFFERENT FIBRE ARCHITECTURE ON FLEXURAL AND HARDNESS BEHAVIOUR OF LAMINATED E-GLASS COMPOSITES	Sarita Pradhan
		3	5	24	FABRICATION OF CARBON GLASS HYBRID COMPOSITES FOR ENHANCED DUCTILITY	Akash J Vaidyan
		4	5	181	Tribological and Corrosion Performance of Coconut Fiber-Reinforced Epoxy Hybrid Composites for Sustainable Engineering Applications	Srijan Senapati
		5	5	234	Sustainable Polymer Composites from Fabric Waste: A Study on Flexural Strength and Corrosion Durability	Ruhil Chetia



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Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS2A [08/01/26: 05:10 PM- 06:25 PM]	Additive Manufacturing & 3D Printing	1	5	98	GELATION CHARACTERISTICS OF HPMC BASED ALUMINA INK	RATNENDRA MISHRA
		2	5	125	LASER-BASED FABRICATION AND MECHANICAL CHARACTERIZATION OF AISI 1018-PET-AISI 1018 MPM SANDWICH COMPOSITE	Purushottam Kumar
		3	5	239	COMPARATIVE HARDNESS ANALYSIS OF COATED AND UNCOATED 3D PRINTED ABS SUBSTRATES	Krishna Gopal Addya
		4	5	243	EFFECT OF TEST PARAMETERS ON THE TRIBOLOGICAL PERFORMANCE OF 3D PRINTED ABS PARTS	Shubham Dey
		5	5	251	EFFECT OF PRINTING PARAMETERS ON TRIBOLOGICAL BEHAVIOUR OF 3D PRINTED PLA AND ABS COMPONENTS	RAMKRISHNA KHATUA

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS2B [08/01/26: 05:10 PM- 06:25 PM]	Bio-Fluid, Environmental & Physiological Flows	1	6	29	CAUDAL FIN ACTUATION AND CONTROL OF A ROBOTIC FISH	Bikash Kumar Sarkar
		2	1	43	Hydrodynamics of fishes-like undulating hydrofoils in channel	Soumitra Dutta
		3	1	94	COMPUTATIONAL STUDY OF 2-DIMENSIONAL FLOW PATTERN IN A GENERIC SMART POWERED RESPIRATOR MASK DEVICE	Sukanta Saha
		4	1	97	IMPACT OF BUILDING INTERFERENCE ON PEDESTRIAN LEVEL WIND VELOCITY	PALLAB KHEYARI
		5	1	156	EFFECT OF RHEOLOGY ON MUCUS FILM FRAGMENTATION: A COMPUTATIONAL STUDY CONSIDERING DIFFERENT PULMONARY DISEASES	Sudipta Saha

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS2C [08/01/26: 05:10 PM- 06:25 PM]	Battery Thermal Management & Safety	1	1	14	SOLAR AIR HEATING FOR PRESERVING WASTE FOOD	Biharilal Tudu
		2	7	50	THERMAL BEHAVIOUR OF A LI-ION BATTERY DURING ITS CONTINUOUS CHARGING AND DISCHARGING	Indrajit Bag
		3	1	51	STUDIES ON EVOLUTION OF TEMPERATURE OF A CYLINDRICAL Li-ION BATTERY UNDER CYCLIC OPERATIONS	Arup Kundu
		4	1	192	PERFORMANCE ANALYSIS OF TESLA VALVE-BASED LIQUID COOLING SYSTEMS FOR BATTERIES	HARSHIT PANDEY
		5	1	202	Early prediction of thermal runaway in overcharged lithium-ion battery using voltage-temperature signature	Koushik Samanta



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TS2D [08/01/26: 05:10 PM- 06:25 PM]	Structural Response of Laminated & Graded Composite Structures	1	2	25	FREE VIBRATION OF LAMINATED COMPOSITE FOLDED SANDWICH PLATE WITH CUTOUT	Saptadwipa Jha
		2	2	77	EFFECT OF INITIAL CURVED SHAPE ON LARGE DEFLECTION OF HYPERELASTIC SOFT CURVED BEAM: A PARAMETRIC INVESTIGATION WITHIN SEMI-ANALYTICAL FRAMEWORK	Gyan Sagar
		3	2	82	DEFORMATION BEHAVIOR OF LAMINATED STIFFENED CYLINDRICAL SHELL WITH CUTOUT UNDER BENDING	SUDIP KR HALDER
		4	2	157	THERMO-MECHANICAL ANALYSIS OF LAMINATED COMPOSITE PLATES	Aamir Anwar Nezami
		5	2	173	STATIC STRUCTURAL BEHAVIOUR OF ELASTICALLY RESTRAINED AXIALLY GRADED CANTILEVER BEAM	Aron Mondal

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS2E [08/01/26: 05:10 PM- 06:25 PM]	EDM & WEDM: Analysis and Optimization	1	4	66	Comparative Parametric Analysis and Optimization of $\mu$ -EDM Process Parameters for Inconel 718 and Monel 400	Pritam Pain
		2	4	127	Effects of process parameters on material removal rate and tool wear rate in electrical discharge machining of IN 718.	Anubhab Basu
		3	4	213	ENHANCED MACHINING PERFORMANCE BY ACHIEVING LOW ELECTRODE WEAR IN DIE-SINK EDM OF AL–WC COMPOSITES	THIA PAUL
		4	4	214	Optimization of WEDM process parameters for Al 7075 using AHP- TOPSIS Hybrid Technique	Jishunarayan Eshore
		5	4	270	ENERGY EFFICIENT WIRE-EDM OF Ti-6Al-4V: OPTIMIZATION TOWARDS SUSTAINABLE MACHINING PERFORMANCE	Dr. Bijaya Bijeta Nayak





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TS2F [08/01/26: 05:10 PM- 06:25 PM]	Electroless Coatings	1	5	93	Modelling and optimization of Microhardness using Genetic Algorithm of electroless Ni-PTFE-P composite coating over medical grade stainless steel	ANINDYA SARKAR
		2	5	126	A PRELIMINARY ANN MODEL FOR THE PREDICTION OF MICROHARDNESS OF ELECTROLESS NI-B COATING AND INVESTIGATION OF TRIBO-MECHANICAL BEHAVIOUR	SUBHASH KUMAR
		3	5	130	PARTICLE EROSION OF ELECTROLESS Ni-B-W COATING	Arkadeb Mukhopadhyay
		4	5	176	CORROSION BEHAVIOUR OF ELECTROLESS Ni-B-W-Mo COATINGS	Manik Barman
		5	5	185	CHARACTERIZATION OF AUTOCATALYTIC BINARY AND DUPLEX DEPOSITS	Dr. Abhijit Biswas

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS3A [08/01/26: 06:30 PM- 07:45 PM]	Tribology and Surface Engineering of Advanced Materials	1	5	41	MECHANICAL BEHAVIOUR OF EPOXY-WASTE RUBBER COMPOSITE INCORPORATED WITH DIFFERENT ADDITIVES	Mr. Rajesh Roy
		2	5	62	INVESTIGATION OF SURFACE ROUGHNESS AND MATERIAL REMOVAL RATE DURING UNDERWATER FIBER LASER TEXTURING ON AZ31B MAGNESIUM ALLOY	JIAUL HAQUE
		3	3	71	Soft Computing Tools To Predict Varied Weight Components, Material and Tribological Properties of Al2219-B4C-Gr	Biplab Chatterjee
		4	5	138	EFFECT OF POST DEPOSITION HEAT-TREATMENT ON THE TRIBOLOGICAL BEHAVIOR OF Ni-P-W-rGO COATINGS	Supriyo Roy
		5	5	182	COMPARATIVE STUDY ON TRIBOLOGICAL PROPERTIES OF ELECTROLESS AND REVERSE PULSE PLATED Ni-Co-P COATING	Anurag Chakraborti
		6	5	204	EFFECTS OF GARNET SAND ADDITION ON TRIBOLOGICAL PROPERTIES OF TRIAXIAL CERAMICS	Ruma Mallik



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TS3B [08/01/26: 06:30 PM- 07:45 PM]	Ceramics & Glass Materials	1	5	34	NANOMECHANICAL BEHAVIOUR OF POLYMER DERIVED SILICON OXYCARBIDE THIN FILMS	AJITESH KAR
		2	5	91	The effect of transition metal incorporation on the thermal and dielectric responses of Zinc-Phosphate ternary glassy System	Arpan Mandal
		3	10	147	Mechanical Characterization of BBVP Glass Nanocomposites: Nanoindentation and Fracture Analysis	Souvik Brahma Hota
		4	5	165	NANOINDENTATION ANALYSIS OF SYNTHESIED YTTRIA STABLISED ZIRCONIA TOUGHENED ALUMINA CERAMICS.	BIJENDRA KUMAR
		5	5	188	FRACTURE RESISTANCE AND CRACK GROWTH IN SODALIME GLASS UNDER INDENTATION LOADING	Sannidhya Roy

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS3C [08/01/26: 06:30 PM- 07:45 PM]	Nanofluid & Magnetohydrodynamic (MHD) Convection	1	1	237	MAGNETO-NANOFLUIDIC CONVECTION IN COMPLEX SEMICIRCULAR BOTTOM-HEATED POROUS ENCLOSURES WITH WAVY COOLING SURFACE AT TOP	Arkabrata Das
		2	1	238	MAGNETO-NANOFLUIDIC CONVECTION IN CIRCULAR POROUS CAVITIES WITH BOTTOM PROTRUDED HEATER	Saptarshi Mondal
		3	1	248	THERMAL PERFORMANCE AND IRREVERSIBILITY ANALYSIS OF NANOFLUID-SATURATED POROUS HEXAGONAL CAVITY UNDER MHD-RADIATIVE EFFECTS	Anubhav Chowdhury
		4	1	250	MAGNETOHYDRODYNAMIC CONVECTION OF CUO-WATER NANOFLUID IN COMPLEX STAR-SHAPED POROUS ENCLOSURES	Tabia Bashir
		5	1	263	THERMO-MAGNETO CONVECTION IN CIRCULAR TRAPEZOID WITH DISTRIBUTED HEATING AND COOLING	Debayan Guha



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TS3D [08/01/26: 06:30 PM- 07:45 PM]	Heat Transfer and Entropy Analysis in Thermal Systems	1	1	158	NUMERICAL ANALYSIS OF HEAT TRANSFER IN VERTICAL FIN ARRAYS WITH NON-UNIFORM HEIGHT DISTRIBUTIONS	Souranshu Roy Chaudhuri
		2	1	168	Numerical Examination of Entropy Formation during Natural Convection inside a Square Enclosure Heated Non-uniformly from Top	Saranya Das
		3	1	193	Heat Transfer Performance of Binary vs. Ternary Nanofluids in Laminar Pipe Flow with Constant Wall Heat	Avik Ray
		4	1	200	Enhancement of thermal performance using nanoparticles over backward facing step	Afzal Hussain
		5	1	244	THERMAL AND ENTROPY BEHAVIOR OF CUO-WATER OF NANOFLUID-FILLED POROUS TRIANGULAR CAVITY WITH BOTTOM HEATED SEMI-CIRCULAR OBSTRUCTION	Suman Roy

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS3E [08/01/26: 06:30 PM- 07:45 PM]	Sustainability: Property And Performance Enhancement	1	4	128	A PILOT STUDY ON THE FEASIBILITY OF THROUGH TOOL COOLANT DELIVERY USING MICRO-HOLES FOR ENHANCED MACHINABILITY	Goutam Laha
		2	4	134	ANALYSIS OF TOOL LIFE IN HIGH-SPEED MICRO TURNING UNDER DIFFERENT COOLING CONDITIONS	Amit Rakshit
		3	5	152	Sustainable Aluminium Composites: Enhanced Properties with Conch Shell Reinforcement via Stir Casting	Dr. Bikash Choudhuri
		4	4	201	Enhancing Mechanical and Tribological Performance of Wire Arc Additive Manufactured ER70S-6 Steel Walls through Arc Mode Selection	Bappa Acherjee
		5	4	205	EXPERIMENTAL STUDY ON TURNING USING BIO-FRIENDLY CUTTING FLUID	Dipanwita Biswas





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TS3F [08/01/26: 06:30 PM- 07:45 PM]	Physics-informed ML & ML optimization	1	10	12	Physics-Informed Manufacturing: PINNs for Hydroforming Process Modelling	Shreyasi Porel
		2	9	65	MODELING AND OPTIMIZATION OF SURFACE ROUGHNESS OF ELECTRODEPOSITED NICKEL COATING USING TAGUCHI AND BONOBO OPTIMIZER	Dr. Jhumpa De
		3	10	194	Machine Learning-Based Optimization of Wire EDM Parameters for Inconel-718: A Comparative Study	Kunal Dey
		4	10	232	MULTI-OBJECTIVE OPTIMIZATION OF TI-6AL-4V TURNING USING TAGUCHI–GRA AND SURROGATE MODEL-BASED PARETO ANALYSIS	Lidiya Priyadarsini Korsapati
		5	10	247	PHYSICS-INFORMED NEURAL NETWORK FRAMEWORK FOR OPTIMIZING PCM-BASED THERMAL ENERGY STORAGE SYSTEMS	Om Karmakar

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS4A [09/01/26: 09:30 AM- 10:45 AM]	Thermofluids, Heat Transfer & Entropy Generation	1	1	40	Entropy Mapping in Athletic Metabolic Processes	Subhajit Banerjee
		2	7	63	INFLUENCE OF FLOW REGIME TRANSITIONS ON LOCAL ENTROPY GENERATION IN HORIZONTAL TUBES	BHASKAR HALDER
		3	7	166	THERMODYNAMIC AND ENTROPY GENERATION ANALYSIS OF SUPERCRITICAL CO <sub>2</sub> IN A MINI TUBE	Anushmit Lahiri
		4	7	208	THERMODYNAMIC ANALYSIS OF ALTERNATIVE REFRIGERANTS TO FIND A REPLACEMENT FOR R410A	Aniket De



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TS4B [09/01/26: 09:30 AM- 10:45 AM]	Advanced Thermal– Mechanical Analysis	1	10	33	Laser Cladding of Wheels and Rails: A Review of Mechanical Performance	ANKITA DAS
		2	10	112	EFFECT OF REACTIVE COUPLING ON SYNCHRONIZATION OF TWO DISSIMILAR PULSE COMBUSTORS	VIVEK KUMAR
		3	10	133	A Critical Evaluation of the Submodeling Technique for Thermal Fatigue Life Prediction in Ball Grid Arrays: A Case Study Analysis	Uttaran Bhattacharya
		4	1	224	ANALYSIS OF CURVED SIDEWALL DUMP DIFFUSERS FOR GAS TURBINE COMBUSTORS	Prajina V P

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS4C [09/01/26: 09:30 AM- 10:45 AM]	Natural Circulation Dynamics	1	1	90	A BENCHMARKING STUDY OF PIPE BLOWDOWN PHENOMENA USING THE PRABHAVINI ACCIDENT ANALYSIS CODE	Sangeeta Kundu
		2	1	144	RESPONSE SURFACE METHOD BASED PERFORMANCE OPTIMISATION OF TWO-PHASE NATURAL CIRCULATION LOOP	Diptangshu Sengupta
		3	1	197	EFFECT OF GEOMETRY ON THE DYNAMICS OF RECTANGULAR NATURAL CIRCULATION LOOP	Dinabandhu Rout
		4	1	271	DEVELOPMENT & VALIDATION OF A GALERKIN POD REDUCED ORDER MODEL FOR NATURAL CIRCULATION LOOP DYNAMICS	Aditya Mandal

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS4D [09/01/26: 09:30 AM- 10:45 AM]	Green Chemistry, Biofuels & Sustainability	1	7	54	MICROWAVE DRIVEN SUSTAINABLE SYNTHESIS OF 5-HMF FROM COFFEE GROUNDS USING DEEP EUTECTIC SOLVENT AND METAL SALT CATALYST	Subham Halder
		2	7	69	Design and Innovation in a Next-Generation Portable Electric Tiller for Sustainable Small-Scale Farming	Bikash Choudhuri
		3	7	81	PFAS Removal from Groundwater through TiO <sub>2</sub> /Zeolite and H <sub>2</sub> O <sub>2</sub> Photocatalysis based on Solar Energy	Chi-An Tseng
		4	7	117	WASTE-TO-WEALTH: ECO-FRIENDLY CHEMOCATALYTIC CONVERSION OF POTATO PEELS INTO SUSTAINABLE BIOETHANOL	PRANTICA SAHA



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TS4E [09/01/26: 09:30 AM- 10:45 AM]	Manufacturing Processes, Analysis and Decision Frameworks	1	4	23	NUMERICAL PREDICTION OF RESIDUAL STRESS AND TEMPERATURE IN SINGLE GRIT MICRO-CUTTING OF TI-6AL-4V	Gautam Kumar
		2	4	30	AN INTEGRATED APPROACH TO FMECA UNDER MULTIPLE CRITERIA	Debasis Das Adhikary
		3	4	189	Sustainable approach for comparative analysis on machining effects of mild steel and alloy steel using Taguchi design based Pareto optimization	Jayasmita Ghatak
		4	4	257	Experimental Investigation and Optimization of Abrasive Water Jet Machining on Borosilicate Glass	Angad Riat

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS4F [09/01/26: 09:30 AM- 10:45 AM]	Sustainable Systems, Resources and Interdisciplinary Engineering	1	10	31	EXPLORING INTERDISCIPLINARY AND SUSTAINABLE INNOVATION IN MECHANICAL ENGINEERING: A BIBLIOMETRIC ANALYSIS	AJOY KUMAR BHOWMICK
		2	10	39	A FINITE ELEMENT-BASED PARAMETRIC STUDY ON HYDRODYNAMIC RESPONSE OF INFINITE RESERVOIR	KOUSTAV DUTTA
		3	10	100	APPLICATION OF RESISTIVITY SURVEY FOR GROUNDWATER POTENTIAL ASSESSMENT ALONG THE DAMODAR RIVER BANK IN ASANSOL REGION	Ashesh Rudra Paul
		4	10	107	The conflict resolution using evaporating cloud: An implementation of circular economy in the steel industry	Subhojit Ghosal



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TS5A [09/01/26: 03:10 PM- 04:25 PM]	Mechanical Engineering Education	1	8	149	A Case Study on the impact of Class XII and West Bengal Joint Entrance Examination (WBJEE) results on the Engineering mathematics courses	Bandana Majuri
		2	8	210	THE ANALYSIS AND ASSESSMENT OF QUESTION BANK ON THE PERFORMANCE OF STUDENTS	Partha Halder
		3	8	216	EVALUATION OF COURSE OUTCOME (CO) ATTAINMENT: A CASE STUDY IN MECHANICAL ENGINEERING COURSES	Anirban Mitra
		4	8	226	The Transformative Role of Artificial Intelligence in Engineering Education: Alternative or Collaborative Companion	Himopravo Chowdhury

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS5B [09/01/26: 03:10 PM- 04:25 PM]	Phase Change, Condensation and Thermal Performance	1	1	13	EVOLUTION OF SOLID-LIQUID INTERFACE DURING SOLIDIFICATION OF AN Al-Si ALLOY IN A SAND MOULD	Joydip Paul
		2	1	88	A HYBRID MASS TRANSFER MODEL FOR TRANSIENT STEAM BUBBLE CONDENSATION IN SUBCOOLED LIQUID: COUPLING INTERFACE-JUMP AND BOUNDARY LAYER MECHANISMS	Reeshav Chakraborty
		3	1	114	PERFORMANCE EVALUATION OF AN INDIRECT EVAPORATIVE COOLER UNDER VARYING MASS FLOW RATES AND AMBIENT RELATIVE HUMIDITY	Subhadeep Chakraborty
		4	1	169	EXPERIMENTAL INVESTIGATION OF STEAM BUBBLE DYNAMICS DURING DIRECT CONTACT CONDENSATION IN A SUBCOOLED POOL USING VARYING NOZZLE DIAMETERS	Aranyak Chakravarty



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TS5C [09/01/26: 03:10 PM- 04:25 PM]	Renewable & Hybrid Energy Systems	1	7	15	Neural Network-Driven Aerodynamic Profiling of Modified Savonius Turbine for Urban Energy	Yashwant Kumar Singh
		2	7	44	Ocean Thermal Energy Conversion (OTEC) Through R1234yf-R600a Mixture	Habibulla Molla
		3	7	49	A Energetic and Exergetic Performance Analysis of Selected Solid Fuels for Boiler Applications	Monali Suryabhanji Bhojane
		4	7	195	IMPACT OF PV PENETRATION ON PV WIND ELECTROLYSER POWER SYSTEM FOR ELECTRIC AND HYDROGEN VEHICLES	Dr. Madhumita Das
		5	7	196	STRUCTURAL ANALYSIS OF OFFSHORE WIND TURBINES: ENHANCING PERFORMANCE AND RELIABILITY	Dr. Aritra Ganguly

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS5D	Advanced Mechanics & Data-Driven Analysis	1	2	20	PROPOSITION OF A MULTI-LAYERED NEURAL NETWORK TO DETECT UNBALANCE OF FLEXIBLE ROTOR	ASIM KUMAR BATBYAL
		2	2	141	A STUDY ON FREE VIBRATION RESPONSES OF THREE-DIMENSIONAL LIQUID IN RECTANGULAR CONTAINER	SOURAV HAJRA
		3	2	151	PROGRAMMABLE LARGE DEFORMATION AND ELASTIC ROTATIONAL RESTRAINT OF MAGNETIC STIMULI-RESPONSIVE HARD MAGNETIC SOFT BEAM	Sushanta Ghuku
		4	2	258	ANN-aided reliability evaluation of slender composite tubes with manufacturing-induced material property variability considering global buckling	Rajamohan Ganesan





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TS5E [09/01/26: 03:10 PM- 04:25 PM]	Rotordynamics, Bearings & Performance Analysis	1	3	180	INVESTIGATION OF SHAFT TILTING EFFECTS ON HYDROSTATIC OIL-FILM THRUST BEARINGS WITH POCKET RECESS	Samrat Biswas
		2	9	203	EXCAVATOR HEALTH AND PERFORMANCE IMPROVEMENT BY REMOTE MONITORING AND ANALYSIS OF DATA	Sanjoy Chakrabarty
		3	3	219	Analytical Prediction of Speed Capture Regions in Motor-Driven Geared Transmission Systems	Anubhab Sinha
		4	3	246	Dynamic performance and stability of single layered bearings under turbulent micropolar lubrication	Shitendu Some
		5	3	266	Integrated Conceptual Design and Multi-Domain Mass-Energy Analysis for an eVTOL Air Ambulance	Soham Sharma Sarkar

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS5F [09/01/26: 03:10 PM- 04:25 PM]	Biomedical Engineering, Biomaterials & Biomechanics	1	10	19	DESIGN AND ASSESSMENT OF THE MECHANICAL RESPONSES OF GYROID SCAFFOLD	SOHINI NAYAK
		2	10	56	Cellular Response within a HAp scaffold through Multiscale Modelling	Rituparna Biswas
		3	10	150	INVESTIGATING THE MECHANICAL AND ELECTRICAL PROPERTIES OF SUNDARBANS MUD CRAB DERIVED CHITOSAN AND CITRIC ACID-PVDF CROSSLINKED FILM	PALLAB DASGUPTA
		4	10	231	FINITE ELEMENT ANALYSIS OF A TOPOLOGY OPTIMISED AUXETIC POROUS KNEE IMPLANT	Soumyadeep Nath

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
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TS6A [09/01/26: 06:15 PM- 07:30 PM]	High-Temp Alloys & Thermo- Mechanical Behaviour	1	5	36	TENSILE, HARDNESS, FRACTURE TOUGHNESS AND FATIGUE CRACK GROWTH CHARACTERISTICS OF THERMAL AGED ALLOY 617M BASE AT 710°C TEST TEMPERATURE	Md Rakim
		2	5	37	EVALUATION OF ELASTIC CONSTANTS OF ARTIFICIALLY AGED 6061-T6 ALUMINUM ALLOY USING ULTRASONIC TESTING	SOURAV MAJUMDAR
		3	5	245	DYNAMIC STRAIN AGEING BEHAVIOUR OF 316L AUSTENITIC STAINLESS STEEL DURING TENSILE LOADING	Shantanu Jana
		4	5	265	COMPARISON OF PLATEAU STRESS AND MODULUS OF ELASTICITY OF CLOSED CELL ALUMINIUM FOAM AT DIFFERENT STRAIN RATES	Dipanjan Saren

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS6B [09/01/26: 06:15 PM- 07:30 PM]	Jet Impingement, Aerodynamics and Transport Phenomena	1	1	26	LES OF SUPERSONIC ROUND JETS AT HIGH REYNOLDS NUMBER	Soumik Chakraborty
		2	1	35	TRANSPORT PHENOMENA IN PRESENCE OF A SLENDER BLUFF BODY	SURAJIT BIT
		3	1	143	NUMERICAL INVESTIGATION OF HEAT TRANSFER AND FLUID FLOW UNDER IMPINGING ANNULAR JETS OF POWER-LAW FLUIDS	Koushik Mondal
		4	1	223	Study on the effect of size of recovery plugs on the aerodynamics of typical artillery shells	SOHAM CHOWDHURY
		5	1	236	Numerical Study of Vectored Annular Jet Impingement on a Moving Surface	Prasun Dutta

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS6C [09/01/26: 06:15 PM- 07:30 PM]	Multiphase Flow, Transport Phenomena and Interfacial Dynamics	1	1	48	Tri-Disperse Granular Mixing in a Rotating Drum: Experiments and DEM Simulations	Dr. Ritwik Maiti
		2	1	80	INTERNAL HYDRAULIC JUMP DURING CO-CURRENT STRATIFIED GAS-LIQUID FLOW IN CLOSED CHANNELS	Siddhartha Das
		3	1	186	NANOPARTICLE TRANSPORT AND DEPOSITION IN A MICROFLUIDIC CHANNEL WITH A POROUS OBSTRUCTION UNDER PULSATILE FLOW CONDITIONS	SAUMENDRA NATH MISHRA
		4	1	217	COMPUTATIONAL ANALYSIS OF FLUE GAS FLOW DYNAMICS AND CONDENSATE DEPOSITION PATTERNS IN WET STACK SYSTEMS OF THERMAL POWER PLANTS	Mithun Das
		5	1	274	Bubble transport on superhydrophobic pins under water	Rajalingam A



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TS6D [09/01/26: 06:15 PM- 07:30 PM]	Dynamics, Control and Autonomous Systems	1	6	89	Torque Vectoring-Based Active Yaw Control for Enhanced Vehicle Handling and Stability Using a Digital Twin Framework	Shouvik Chaudhuri
		2	6	177	SMART DRONE-BASED MEASUREMENT SYSTEM FOR SPATIAL AND TEMPORAL AIR QUALITY MONITORING	Chikesh Ranjan
		3	6	199	Construction of an analog circuit for wind turbine blade flutter simulations	Neeraj Kumar
		4	6	218	A STUDY OF DYNAMIC ANALYSIS AND NAVIGATION FOR AUTONOMOUS UNDER WATER VEHICLE	Dr. Subho Mukherjee

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS6E [09/01/26: 06:15 PM- 07:30 PM]	Smart Energy Systems and Intelligent Optimization	1	7	76	INVESTIGATION ON PERFORMANCE PARAMETERS OF Zn <sub>2</sub> SnO <sub>4</sub> ELECTRON TRANSPORT LAYER OF LEAD-FREE PEROVSKITE SOLAR CELL	Sayak Halder
		2	7	86	Green Steps: A Simulation – Based Approach to Sustainable Power Using Electromechanical Footsteps	Dr. DEEPRO SEN
		3	7	135	A Validated Piezoelectric Harvesting System for Self-Sustaining Wireless Structural Health Monitoring Sensors	ABIR CHAKRABORTY
		4	7	252	Uncertainty-Aware EV Charging Load Forecasting Using Probabilistic Deep Transfer Learning	Ramesh Rudrapati
		5	10	253	Quantum-Inspired Algorithms for Multi-Response Process Optimization in Structural Welding Applications	Madhuri Vangeti

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS6F [09/01/26: 06:15 PM- 07:30 PM]	Metal Matrix Composites	1	5	32	PROPERTIES OF ALUMINIUM-BASED NANOCOMPOSITES DEVELOPED USING LIQUID ROUTE	VINEET CHAK
		2	5	72	FABRICATION AND CHARACTERIZATION OF AZ31-WC-Gr HYBRID NANO-COMPOSITES	SHRI SUDIPTA ROY
		3	5	120	ABRASIVE WEAR BEHAVIOR OF Al-WC NANO-COMPOSITE	RANJIT KUMAR DAS
		4	5	139	ROLE OF HEAT TREATMENT ON TRIBOLOGICAL BEHAVIOR OF Al-SiC COMPOSITES	RAMKRISHNA KHATUA
		5	5	259	VARIATIONS IN TORQUE UNDER DRILLING OPERATION OF Al-TiB <sub>2</sub> METAL MATRIX COMPOSITES	Siraj Ali Khan



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Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS7A [10/01/26: 10:00 AM- 11:00 AM]	Functional Materials (Optical/Magnetic)	1	5	74	A BRIEF REVIEW ON TRANSITION METAL OXIDES FOR OPTOELECTRONIC APPLICATIONS	Mainak Ghosh
		2	5	110	Optical and Radiation Shielding Features of Dy <sup>3+</sup> Ion Doped Zinc-Lead-Borate Glasses	Sukdeb Saha
		3	5	123	IMPACT OF Ni INCORPORATION ON MICROSTRUCTURAL EVOLUTION AND MAGNETIC RESPONSE OF Cu-Co ALLOY	AKHTARUJJAMAN SARKAR
		4	5	235	MAGNESIUM-BASED COMPOSITES: RESEARCH LANDSCAPE, EMERGING TRENDS, AND FUTURE DIRECTIONS	Arindam Roy Goswami

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS7B [10/01/26: 10:00 AM- 11:00 AM]	Sustainable Infrastructure, Materials and Industrial Practices	1	7	87	SMART ROOFING WITH PCM: A SUSTAINABLE TACTIC IN MODERN BUILDINGS FOR PASSIVE COOLING	Mrinmoy Dhar
		2	7	174	Confirming sustainable existence of an engineering institute in India by carbon equivalent calculation	Ashmita Dhar
		3	7	249	POTENTIAL OF WFS, MARBLE WASTES AND PLASTIC WASTE TO BE USED IN CONCRETE PAVING BLOCKS	ENJAMAMUL HOQUE
		4	7	254	SUSTAINABLE INDUSTRIAL PROCESSES (SDG 9.4): DISCRIMINANT ANALYSIS FOR REJECTION PREDICTION IN DUCTILE IRON FITTINGS	Sonali Roy Chowdhury

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS7C	Microchannel Heat Transfer and Transport Phenomena	1	2	211	INVESTIGATION OF SINUSOIDAL ASPERITY CONTACT WITH DEFORMABLE SUBSTRATE INTERACTION	Tamonash Jana
		2	1	241	Transport of magnetic microsphere in a stratified liquid-liquid micro extraction system in electrical and pressure driven flow	Abhishek Samanta
		3	1	256	A PHYSICS-INFORMED NEURAL NETWORK APPROACH FOR OPTIMIZING MICROCHANNEL THERMAL PERFORMANCE	Jotiraditya Banerjee
		4	1	262	BOILING AND HEAT TRANSFER DYNAMICS IN DIVERGING MICROCHANNELS	Sandip Kumar Saha



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TS7D [10/01/26: 10:00 AM- 11:00 AM]	Hydraulic Actuation, Control & Smart Mechatronic Systems	1	6	42	Free Floating Space Manipulators: Comparative Analysis Between Few Control Methods	Subhadip Bose
		2	6	222	VIBRATION ANALYSIS AND CONTROL OF VERTICAL HYDRAULIC ROTOR BEARING SYSTEM WITH NON-LINEARITIES	Jyothula Hari Narayana Rao
		3	6	227	HYBRID DDPG-BASED REINFORCEMENT LEARNING WITH PI CONTROL FOR ELECTROHYDRAULIC ACTUATION SYSTEMS	Aniruddha Sarkar
		4	6	64	MOTION TRACKING OF ELECTRICALLY ACTUATED STEWART PLATFORM BY ADAPTIVE PI CONTROLLER TUNED WITH FUZZY RULES FOR INDUSTRIAL MANUFACTURING APPLICATIONS	MINTU GHOSH

Technical Session	Session Description	No.	Track	Paper ID	Paper Title	Presenting Author
TS7E [10/01/26: 10:00 AM- 11:00 AM]	Fluid Machinery Dynamics & Control	1	10	5	COUPLED THERMO-FLUID MODEL FOR AXIAL PISTON PUMPS: ANALYSIS OF ENERGY LOSSES INFLUENCED BY FLUID PROPERTIES AND OPERATING CONDITIONS	Nitesh Mondal
		2	7	61	SIMULATION PERFORMANCE ANALYSIS OF LOAD SENSING AXIAL PISTON PUMP FOR DRIVING A ROTARY ACTUATOR	Mr. Subhojit Paul
		3	3	95	A new hydraulic synchronized actuation system in open-loop control suitable for variable exhaust nozzle (VEN) in gas turbine engines	Kapil Arvind Kulkarni
		4	6	121	Dynamic Response of a Load Sensing Axial Piston Pump in a Bleed-Off Circuit Configuration: An Experimental Examination	Soumyojit Halder





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TS7F [10/01/26: 10:00 AM- 11:00 AM]	Multiscale Dynamics and Modelling	1	10	99	AUTOMATED MIDBRAIN MRI SEGMENTATION USING ATTENTION-ENHANCED U-NET MODELS FOR REGION-SPECIFIC MEDICAL ANALYSIS	Saubhagyanjan Swain
		2	10	142	NONLINEAR QUANTUM DYNAMICS CONTROL SYSTEMS FOR DNA HELIX	Rohit Banerjee
		3	10	240	Electric field mediated droplet breakup at pressure driven flow for different asymmetric bifurcated microchannel	Savnav Huda
		4	10	260	DYNAMICS OF A COMPOUND DROPLET AT ROUNDED CORNER BIFURCATED MICROCHANNEL UNDER POISEUILLE FLOW	Tushti Thakur
		5	9	55	LEARNING FLOW DYNAMICS: DEEP NEURAL NETWORKS FOR PREDICTION OF CFD-GENERATED FIELD IMAGES OF FORCED CONVECTION IN U-BEND TUBES	Ankan Basu