

INCOM 2024 Detailed Program Schedule (DAY 01 - JAN 5, 2024)

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| 09:00 AM - 09:45 AM | Collection of Conference Kit at ML Sircar Hall, Indian Association for the Cultivation of Science (IACS), Jadavpur | | |
| 10:00 AM-11:15 AM | INAUGURAL SESSION Venue: Dr. ML Sircar Hall, IACS | | |
| | Lamp lighting ceremony | | |
| | National Anthem | | |
| | Welcome address by Prof. Prokash Chandra Roy, Secretary, INCOM 2024 | | |
| | Address by Vice Chancellor, Jadavpur University as Chief Patron, INCOM 2024 | | |
| | Address by Pro-Vice Chancellor, Jadavpur University as Patron, INCOM 2024 | | |
| | Address by Dean, FET, Jadavpur University as Patron, INCOM 2024 | | |
| | Address by HOD, Mechanical Engg. Department, as Chairman, INCOM 2024 | | |
| | Address by Mr. M. Raghu Ram, Member (Technical), Former Chairman (offg), Damodar Valley Corporation, Kolkata as Chief Guest of INCOM 2024 | | |
| | Address by Mr. Gautam Ray - Ex Dir.(HR & Admin.) - CESC Ltd, President (HR) –Power Group, RPSG & President of BCC&I as Guest of Honor of INCOM 2024 | | |
| | Address by Mr. Rambabu Ch., CEO, AI Airport Services Ltd. as Guest of Honor of INCOM 2024 | | |
| | Vote of Thanks by Dr. Suman Kalyan Das, Asst. Secretary, INCOM 2024 | | |
| 11:15AM -11:30AM | HIGH TEA | | |
| 11:30 AM- 01:00 PM | PLENARY SESSION I (Venue: Dr. ML Sircar Hall, IACS) (Chair - Prof. Swarnendu Sen) | | |
| 11:30AM- 12:15 PM | Dr. Suman Chakraborty, Professor, Department of Mechanical Engineering & Sir J. C. Bose National Fellow, IIT Kharagpur, India. <i>"Personalized Cardiovascular Assessment via Medical Image-Trained Hemodynamics Simulations – Towards Simulated Clinical Trials on Virtual Patients"</i> | | |
| 12:15PM - 1:00 PM | Dr. Saptarshi Basu, DRDO Chair Professor, Department of Mechanical Engineering, IISc Bangalore, India <i>"Droplets under Extreme Conditions: A Shocking Story"</i> | | |
| 01:00PM - 02:00PM | CONFERENCE LUNCH | | |
| 02:00PM – 03:00PM | KEY NOTE SESSION I (Chair - Prof. Santanu Das) Venue: Seminar Room, Mechanical Engineering Department | | |
| 2:00PM - 2:30 PM | Mr. UA Subramanian, Outstanding Scientist, Vikram Sarabhai Space Centre, ISRO <i>"Aero Space Mechanisms: Chandrayaan-3 and Beyond"</i> | | |
| 2:30 PM- 3:00 PM | Mr. Subrata Basak, Chief, Procurement, Supply Chain Management, Tata Steel Ltd. <i>"Green Supply Chain Management"</i> | | |
| 03:00PM - 04:30PM | TECHNICAL SESSION I | | |
| Venue / Session Chair | Paper ID INCOM - | Paper Title | Authors |
| Seminar Room (Prof. Amitava Sarkar) | 101 | Investigation of Impinging Water Jet Using Volume of Fluid Multiphase Method | K.A. Ganatra and A. Mukhopadhyay |
| | 102 | Impact of Fluidic Force on Extraction of Magnetic Microspheres in Stratified Magnetic Liquid-Liquid Microextraction System | A. Samanta, R. Ganguly, A. Datta, N. Modak |
| | 103 | A Phase Field Model for Droplet Breakup in Microfluidic Confinement | J. Mandal, S. Sarkar |
| | 104 | Convective Thermal Performance of Various Polygonal Geometries Using Common and Nanofluids | G. Goswami, N. Biswas, N.K. Manna, D.K. Mandal |
| | 105 | Natural Convective Heat Transfer in An Elliptic Annulus Filled With Nanofluid | A. Banerjee, R. Barua, U.K. Sarkar, N. Biswas |
| | 106 | Role of Magnetic Field on Convective Heat Transport of Pentagonal Thermal Annuli | S. Sarkar, G. Goswami, N. Biswas, N.K. Manna, D.K. Mandal |
| | 107 | Investigating the Influence of Central Restriction Height on Average Static Pressure in Dump Diffusers | V.P. Prajina, N.K. Manna, U. Rana, A. Guha |
| Audio Visual (Prof. Santanu Kumar Karmakar) | 402 | Crystallization Kinetics and Physio-Chemical Study of Multicomponent Chalcogenide M5-Se60-Te20-Ge15 (M=Sn, Zn, Sb) Nanocomposites | D. Patra, D. Biswas, R. Mondal, B.K. Ghosh, N. Modak |
| | 404 | Synthesis and Characterization of Silicon Doped Graphene Oxide: A Novel Nanomaterial | S. Mukherjee, B.H. Poornima, T. Vijayakumar, S. Mukherjee |
| | 405 | Corrosion Resistance of Electroless Ni-B-W Coatings | M. Barman, T.K. Barman, P. Sahoo |
| | 406 | Optimization of Electroless Ni-P-Cu Coating Under Dry Lubrication | S. Duari, T.K. Barman, P. Sahoo |
| | 407 | Investigation of Tribological Behaviour of Electrodeposited Ni-Co-P Alloy Film | A. Chakraborti, S.K. Das, P. Sahoo |
| PG Seminar (Prof. Achintya Mukhopadhyay) | 408 | Low Cycle Fatigue Behaviour of 316L Austenitic Stainless Steel At 873k | S. Jana, C. Prabhakar, M.K. Patel, S. Shyamal, R. Kumar, U. Bera, P.C. Chakraborti |
| | 436 | Mechanical Property Prediction of High-Entropy Alloys Using Machine Learning Methodology | S. Singh, S.N. Joshi, S. Goel |
| | 108 | Mhd Convection in a Bottom-Heated Semi-Circular Channel With An Impinging Jet At the Middle of Its Top Rectangular Duct | A. Bhattacharya, A. Halder, N. Biswas, N.K. Manna, D.K. Mandal |
| | 109 | Flow Separation of Single-Phase Turbulent Flow Through 90° Pipe Bend: A Numerical Analysis | S. Laha, N. Mondal, S. K. Dash, P. Dutta |
| | 110 | Investigation of Waveform Dynamics for Enhanced Heat Transfer in Twin Synthetic Slot Jets | S. Kumar, P. Halder |
| | 112 | Combustion Behaviour Investigation in Co-Flow and Cross-Flow Hydrogen-Air Microcombustors: A Comparative Study | A. Mandal, S. Sarkar, A. Mukhopadhyay |
| | 113 | Thermotaxis of a Near Wall Micromotor | S. Ghosh, H. Damor, A. Poddar |
| PG Automobile (Prof. Pravash Chandra Chakraborti) | 114 | Numerical Investigation of Heat Transfer Augmentation Using Nanofluids in a Square Duct | K. Sahu, S. Dey, A. Man, Ashutosh, K. Paul, B.K. Mandal |
| | 116 | Thermodynamic Model of Storage and Discharge of Liquid Hydrogen in Pressure Vessels Under Cryogenic Conditions | J. Dutta, A. Mukhopadhyay |
| | 410 | Experimental and Ann Evaluation on Tribological Performance of Corn-Husk Filler-Based Composites | B.P. Hazam, V.K. Mahakur, N. Chauhan, S. Bhowmik |
| | 411 | Microstructure Evaluation of Friction Stir Welded 316L Stainless Steel Pipes | S. Gain, S. K. Das, D. Sanyal, S. K. Acharyya |
| | 413 | Development of Silicon Carbide Thin Film for White Light Emission | A. Kar, K. Kundu, D. Sarkar, S. Pal, S. Kumar, R. Banerjee, H. Chattopadhyay |
| | 414 | Comparison of Corrosion Resistance of Electroless Ni-B, Ni-B-W, Ni-B-Mo and Ni-B-W-Mo Coating Obtained From Stabilizer Free Bath | R. Agrawal and A. Mukhopadhyay |
| M 4-1 (Prof. Salil Haldar) | 415 | Optimization of Microhardness of Electroless Ni-Cu-Sn-B Quaternary Coating By Using Taguchi Based Optimization | A. Kumar, A. Mukhopadhyay |
| | 416 | The Effects of Treated Rice Husk Bio-Filler At Different Weight Fraction on Tribological Characteristics of Sustainable Composites | S. Purkayastha, S. Kumar, N. Chauhan, S. Bhowmik |
| | 201 | Impact Analysis of Unidirectional Polyethylene-Glass Fiber Reinforced Phenolic Polymer Composite Laminate | H. Barman, A. Nandi, C. Datta |
| | 202 | Experimental Study and Finite Element Simulation for Stress Analysis of Cross-Ply Laminated Cantilever Curved Beam | C.K.Sahoo, Y.Kumar, K. Khan |
| | 205 | A Study on Free Vibration Analysis of Composite Tank Considering Fluid-Wall Interaction | P. Saha, K.K. Mandal |
| | 206 | Design of Single Particle Damper for Variable Frequency Loading | I. Barua, P. Bhattacharya |
| | 207 | An Investigation of Nano Mechanical Properties of Low Viscosity Pmma Bone Cement Using Experimental and Finite Element Analysis | S.P. Chaurasiya, R. Ghosh |

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| | 208 | Biomechanical Analysis of Box® Total Ankle Replacement Design: A Finite Element Study | Minku, R. Ghosh |
| | 211 | Unloading Analysis of Functionally Graded Carbon Nanotubes Reinforced Composite (Fg-Cnt) | R. Bhadra, T. Jana, A. Mitra and P. Sahoo |
| M 4-2 (Prof. Subhash Chandra Panja) | 301 | The Opportunity of Additive Manufacturing, a State of the Art Method and Near-Net-Shape Manufacturing, for the Assembly of Niti Implants: A Review | S. Datta, P. Biswas |
| | 302 | Tool Wear Monitoring By Acoustic Signals and Its Influence On Cutting Forces | A. Das, C. Singh, K. Dey |
| | 303 | Ism Based Hierarchical Framework of Pdp Attributes for Better Product Quality | S. Roy, N. Modak |
| | 304 | Modeling and Simulation of Solidification Time in Casting | S. Chakravarti, S. Sen |
| | 308 | Variation of Friction Stir Processing for Generating Novel Engineering Parts – a Review | A. Datta, N. Mandal, S.S. Chakraborty |
| | 309 | Grey-Based Taguchi Technique for Parametric Optimization of Tig Welded Aisi 304l Austenitic Stainless Steel | A. Roy, N. Ghosh and S. Mondal |
| | 311 | Experimental Investigation Into the Laser Processing of White Pat Silk | E. Myllem, S.N. Joshi |
| M 4-15 (Prof. Himadri Chattopadhyay) | 601 | Potential of Solar-Biomass-Based Hybrid Microgrid System in Indian Context | A. Biswas, A. Ganguly |
| | 603 | Assessment of Melting Performance of a Phase Change Material-Based Energy Storage : Effect of Fins | A. Nandi, N. Biswas and S. Biswas |
| | 605 | Evaluation of Performance and Emission Characteristics of Diesel Engine Using Microalgae Biodiesel With Nanoparticles | N. Upadhyay, R.K. Das, S. Ghosh |
| | 606 | A Comparative Study on Perovskite Solar Cell on the Basis of Electron Transport Layer and Its Thickness Optimization | S. Halder, I. Dutta and R. Mandal |
| | 608 | Techno-Economic and Social Impact of An Ev-Charging Station: Comparison of Different Storages With Decentralized Hybrid Energy System | R. Dutta, S. Pal, S. Das, S. De |
| | 610 | Study of Electrooxidation of Methanol for Low Temperature Fuel Cell: Pd Based Pluri-Metallic Electrocatalysts | S. Singh, S. Mukhejee, A. Dutta, S. Saha, M. Bose, P. Saha, S. Basak |
| M 4-16 (Prof. Goutam Pohit) | 701 | Combustion, Performance and Emission Analysis: Alcohol-Diesel Blends | V.P. Mishra, S. Barman, P. Mondal |
| | 702 | Structural Analysis of a Multi-Purpose Plucking Frame | B. Gayen, N.K. Manna, N. Biswas |
| | 704 | Spontaneous Motion of Isotropic Active Particles in Complex Media | S. Roy, R. Saha, S. Mookherjee, S.K. Acharyya, D. Sanyal |
| | 705 | Design and Numerical Analysis on Scaffold Architecture To Achieve Patient Specific Mechano-Biological Environment | S. Das, S. Mandal |
| | 706 | Modelling of Performance of Electric Three-Wheelers on Indian Roads for Development of Range Extension Strategy | S. Kundu, P. Samanta, N. Mondal |
| | 708 | Implementation of Artificial Neural Network To Forecast Liquid Desiccant Regenerator Performance | R. Das, S.N. Mishra, S. Sarkar, A. Mukhopadhyay |
| | 711 | Effect of Bed and Nozzle Temperature on the Accuracy of Fdm Parts Printed With Pla Filaments. | A. Ansari, M. Pradhan, R.S. Das |
| M 3-3 (online) (Dr. Biplab Chatterjee, Prof. Abhijit Chanda) | 401 | Study of Structural and Dc Electrical Conductivity Mechanism of V2o5–Nd2o3– ZnO Glass System | S. Khamrai, S.K. Das |
| | 402 | Parametric Analysis on Laser Marking on Pure Aluminium and Optimisation Using Multi-Objective Particle Swarm Optimization Technique. | A. Rakshit, A.S. Das, D. Biswas, D. Roy |
| | 413 | Rheological Characteristics of Al2o3-Tio2 Composite Inks for Direct Ink Writing | S.L. Yolmo, U. Dey and S. Mitra |
| | 427 | Improving Mechanical Properties of Magnesium Matrix Composite Using Reutilization of Ewastes | P. Pal, P. K. Purnapu Rupa |
| | 429 | Ultrasonic Assisted Stir Casting Synthesis and Characterisation of Magnesium Metal Matrix Composites | S. Boopathi |
| | 438 | Three Interval Thixotropy Test (3itt) of Alumina Dispersed in 14 Wt% Pluronic F-127 Hydrogel | V.P. Titarmare, S. Banerjee, P. Sahoo |
| | 441 | Green Nano-Fluid on the Tribological Properties of Aa6082 Alloy | D. Majumder, P. Karuna Purnapu Rupa |
| | 305 | Investigation of Tool Life and Chip Formation During Turning Process of En8 Medium Carbon Steel | S. Boopathi, S.Gobi |
| M 3-9 (online) (Prof. Subrata Kumar Ghosh, Prof. Arunabha Chanda) | 511 | Conceptual Design of a Low Cost Underwater Glider for Educational Purpose | S. Dasgupta |
| | 134 | Bsfc Simulation for Field Test Data Using Vecto Engine-Only Mode | A.M. Dhulekar, F. Sharma, U.S. Dixit |
| | 135 | Electroosmotic Flow in a Nanochannel With Weak Edl Overlapping and the Influence of Magnetic Field With Hall Current Effect | A.Mahanty, R. Roy, P. C. Roy |
| | 138 | Effect of Prandtl Number on the Hydro-Thermal Characteristics in a Triangular Corrugated Duct | D. Banerjee, S. Pati, P. Biswas |
| | 140 | Proper Orthogonal Decomposition of Wall Shear Stress During Head-On Flame Wall Interaction | S. Kumar, K. Chandra, S. Pati, P.R. Randive |
| | 146 | Analysis of Hydrothermal Performance in Backward Facing Step Channel for Fluids With Different Prandtl Number | V. Mohan, U. Ahmed, N. Chakraborty |
| | 151 | Performance of Plate Heat Exchanger With Tapered Channels | S. Kumar, S. Pati |
| | 158 | Usage of Thermal Fluids and Pebbles on the Performance of a Solar Cavity Collector System | R.K. Sarangi, A. Pal, A. Swain, S.P. Kar, P. Chandrasekhar |
| | 612 | Parametric Optimization of Energy Characteristics of Agricultural Waste Briquettes. | B. Lakshmiipathy, M. Senthilkumar, A. Kajavali, N. Vijaya Kumar, E. Elango |
| 616 | Organic Rankine Cycle-Based Biomass Energy Production Using Agricultural Residue in Rural Communities | J. De, S. M. Rahaman, P. Dey, A. Ansari, D. Bal, S. M. Rahaman | |
| 04:30 PM - 04:45PM | TEA BREAK | | |
| 04:45 PM –06:30 PM | TECHNICAL SESSION II | | |
| Venue / Session Chair | Paper ID INCOM - | Title | Authors |
| M 4-1 (Prof. Ranjan Ganguly) | 115 | Thermo-Economic Analysis of Cascade Refrigeration System Using Different Refrigerants | R. N. Biswas, R. Giri, A. Prabhakar, A. Sreemany, R. Roy, B. K. Mandal |
| | 117 | An Experimental Study on Detection and Mitigation of Thermal Runaway | A. Das, S.N. Mishra, S. Sarkar, A. Mukhopadhyay, S. Sen |
| | 118 | Assessment of Leakage Flow of a Variable Displacement Axial Piston Pump: An Experimental Approach | S. Paul, N. Mondal, R. Saha, D. Sanyal |
| | 119 | Numerical Study on Natural Convection Inside Enclosure With Two Conducting Bodies | S.H. Mullick, D. Kushwaha, S. Banerjee, P.K. Kundu, D. DasGupta |
| | 120 | Impact of Magnetic Field on Buoyancy-Driven Heat Transfer and Fluid Flow in An Enclosure Filled With Porous Media | S.H. Mullick, S. Banerjee, A.P. Ghosh, P.K. Kundu, D. DasGupta |
| | 121 | Numerical Analysis To Study the Curvature Effect on Turbulent Flow in a U-Bend Pipe | I. De, M. Das, N. Mondal |
| | 122 | Enhancing Photovoltaic Cell Efficiency Through a U-Shaped Cooling Channel: A Numerical Study | P.K. Sarkar, H. Chattopadhyay, P. Dutta |
| | 123 | Detached Eddy Simulation of Flow in a Two-Dimensional Linear Aerospike Nozzle | Charana G S, K. Raj, R. Mathpal, L. Prince Raj |
| Audio-Visual (Prof. Gautam | 124 | Flow-Induced Vibrations of An Inclined Elliptic Cylinder | P.K. Yadav, H. Sarkar, S. Sen |
| | 420 | Study of Heat Treated Rha Armor Steel Plate Penetration Using Numerical Modeling | V. Gangwar, M. Jana, S. K. Acharyya, S. Dhar, A. Banerjee |
| | 421 | Effect of Load Ratio on Fcgr Behaviour of Alloy 617m Base | Md. Rakim, S. Choudhury, P. Basu, M. Jana, S. K. Acharyya, A. Moitra |
| | 422 | Fabrication and Characterization of Mg-Zro2 Composites | A. R. Goswami, S. Poria, P. Sahoo |
| 423 | Low Cycle Fatigue Behaviour of Cu-Cr-Zr Alloy in Solution Treated and Aged Conditions | C. Prabhakar, S. Jana, M.K. Patel, R. Kumar, U. Bera, S. Shyamal, P.C. Chakraborti | |

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| Majumdar) | 426 | A Study on Kerf Width of En36b Steel in Wedm | A. Gupta, P. Dhara, J. Das, S. Kundu, D. Pramanik, S. Kundu, B. Panja |
| | 430 | Formability Control Using Forming Limit Curve and Hole Expansion Ratio in Single Point Incremental Forming | D. Mandal and N.K. Singh |
| | 431 | Synthesis and Characterization of Copper and Silver Coated Hydroxyapatite Particles | S. Roy, S. Basu, S. Maity |
| | 433 | Mechanical Characteristics of Glass Fibre Epoxy Resin Woven Matrix Composites | K.A. Jana, V. Gangwar, S.K. Acharyya, N. Modak |
| PG Seminar (Prof. Bijan Kumar Mandal) | 125 | Heat Transfer Characteristics of Hybrid Nanofluids in Rectangular Ducts With Constant Heat Flux: A Numerical Study | A. Ray, S. Banerjee, P.C. Roy |
| | 126 | Magneto-Nanofluidic Convection in a Circular Grooved Cavity With Bottom Heating and An Adiabatic Central Obstruction | T. Rudra, N. Biswas, N.K. Manna, D.K. Mandal |
| | 127 | Cfd Analysis in a Multi-Segmental Heated Porous Square Cavity Filled With Hybrid Nanofluid Induced By Multi-Segmental Magnetic Field | S. Pandit, M.K. Mondal, D. Sanyal, N.K. Manna |
| | 128 | Integration of Trilateral Flash Cycle and Ejector Expansion Refrigeration Cycle for Cooling: A Scheme To Readily Available Recover Low-Grade Geothermal Heat | C. Sahana, S. Banerjee, S. Mondal |
| | 130 | Numerical Investigation of Heat Transfer Enhancement of Impinging Circular Jets Using Al ₂ O ₃ -Water and Cu-Water Nanofluids | T.K. Pal, K.S. Maji, H. Chattopadhyay and A. Das |
| | 131 | A Computational Analysis of Fluid Flow Around Triangular Object | R. C. Sarkar, S. Mondal, S. Dey, N. Mondal |
| | 132 | A Computational Analysis of Fluid Flow Around Square Object | S. Mondal, R. C. Sarkar, S. Dey, N. Mondal |
| | 133 | Visualisation of Laser Melting Using Heatlines | A. Banerjee, A. Mukhopadhyay, S. Ray |
| PG Automobile (Prof. Debasis Datta) | 437 | Multi-Response Optimization Via Taguchi-Based Grey Relational Analysis: A Case Study for Tig Welding on Is 2062a Steel Plate | D. Das, S.C. Saha, B. Saha Roy, S. Khan |
| | 439 | Study of the Electrical Property of Rear Earth Doped Manganites | A. Das, T.K. Pal |
| | 440 | Environmental Influences on Physical and Mechanical Properties of Gudro Species of Domestic Abyssinia Banana (Gsdab) Fiber Epoxy Composite | T.K. Dawud, S.N. Joshi |
| | 442 | Scratch Resistance Behavior of Al-Wc Nanocomposites | R.K. Das, S. Poria, P. Sahoo |
| | 446 | Microstructure-Property Relations in a Hydraulically Pressed and Machined Medium Carbon Low Alloy Qp Steel | R.K. Verma, C. Ghosh, R. Ranjan, and M. Dutta |
| | 452 | Development and Testing of Mechanical Properties of Particle Reinforced Rubber Composite | S.K. Barman, D.K. Mandal, N. Modak |
| | 319 | Wire Arc Additive Remanufacturing of Mild Steel Components | K. Kanishka, B. Acherjee, C. Rahul, P. Anand |
| M 4-2 (Prof. Dipak Laha) | 312 | Prediction of Kerf Qualities for Al 7075 Aluminium Alloy on Laser Micro-Machining Using Artificial Neural Network | K.K. Mandal |
| | 313 | Improvement of Machinability in Dry Turning of En8 Steel Using Taguchi Technique | S. Roy, S. Banerjee, P. Sahoo |
| | 314 | Application of Blockchain for Effective Resource Utilisation in Collaborative Distributed Manufacturing System | R. Chakraborty, P. Haldar, N. Modak |
| | 318 | Cutting Speed Variation for Wedm Machining of Al-Tib2 Composites | S.A. Khan, S. Poria, P. Sahoo |
| | 320 | Modelling and Analysis of Fiber Laser Micro-Channelling on Copper | K. Dutta, S. Biswas, R. Biswas, A.S. Kuar |
| | 322 | Effect of Pin Geometries for Joining Dissimilar Metals During Fsw | A. Mandal, J. Deb Barma, G. Majumdar |
| | 323 | Characterization of Wire Arc Additively Manufactured Ss308L: Study of Microstructure and Mechanical Properties | R. Barkey, S. Anand, N. Haldar, S. Datta, S.K. Karak, A. Das |
| M 4-15 (Prof. Sudip Ghosh) | 324 | Successful Application of Artificial Neural Network for Prediction of Bead Width and Depth of Penetration in Atig Welding | S. Acharya, S. Ghara, S. Das |
| | 325 | Reduction of Drilling Burr By Employing a Step Drill Over Using a Twist Drill | D. Misra, S. Das and P.P. Saha |
| | 614 | Vehicle Mounted Solar and Wind Power Energy System | A. Dey, N. Modak |
| | 615 | Performance Analysis of Pressurized Sofc-Based Generation System From An Energy, Exergy, and Economic Viewpoint | S. Pramanik, A. Ganguly |
| | 617 | Investigation and Improvement of Performances of a Two-Stage Thermoelectric Generator | S. Bhakta, B. Kundu |
| | 621 | Mathematical Modelling of Wave Generated by Sluice Gate Closure in a Trapezoidal Non-Prismatic Open Channel | B. Majumdar, P. Sen, S. Das, A. Mazumdar |
| | 622 | Effect of Irradiance and Temperature on Performance of a Solar Photovoltaic (Pv) Power Plant in India | S. Dey, V. Lakshmana Rao |
| M 4-16 (Prof. Sanjib Kumar Acharyya) | 624 | Mechanical Vibrational Effect on Melting of Phase Change Material Applicable To Thermal Energy Storage | A. K. Ghosh, P. Halder |
| | 627 | Unlocking the Potential of Constructed Wetlands for Sustainable Development: Some Case Studies Focussing on Sustainable Development Goals (Sdgs) | S. Saha, R. Mandal, P.K.Roy and M.B. Roy |
| | 712 | Impact of Mechanical Stimuli on Cellular Response: A Computational Study | P. Samanta, S. Kundu, A. Gupta, N. Mondal |
| | 713 | Numerical Assessment of Electroosmotic Micromixer With Time-Varying Electric Potential | A. Kumar, N. K. Manna, S. Sarkar |
| | 714 | Comparison of Linear Kinematic Parameters for Overground and Treadmill Walking | S. Murmu, A. Chanda, S. Patra |
| | 715 | Analysis of European Systems for Checking and Monitoring of Pantographs for Railway Transport Through 3d Laser Scanning | A. Das, O. Fomin, O. Kozyanka, A. Karmakar, A. Das |
| | 716 | Fracture Characteristics of Peek Biomaterial Plate With Circular Discontinuities Using Phase-Field Method | S. Prasad, R. Ghosh, H. Pathak |
| | 717 | Alkali Activated Composite Using Tannery Sludge and Ggbs As An Alternative of Portland Cement for Sustainable Development | A.K. Mondal and A. Shiuly |
| | 722 | Multi-Criteria Decision-Making for Laser Metal-Polymer Welding: A Macont Approach | A.Sen, N. Banerjee, A. Samanta, N. Roy, D. Pramanik, S. Biswas |
| | 723 | Effect of Surface Wave on Infinite Reservoir Subjected To Dynamic Excitation | S.K. Das, K.K. Mandal |
| M 3-3 (online) (Dr. Pujan Sarkar, Prof. Susenjit Sarkar, Prof. Arghya Nandi) | 727 | Genetic Algorithm-Based Cable Mode Deployment Strategy For Tensegrity Utility Bridge | S. Kumar, S. Sen |
| | 728 | Assessing Flow Induced Maximum Scour Depth in Clear Water Conditions Using Xgboost and Random Forest | B. Nandi, S. Das and S. Paul |
| | 447 | Evaluation of Strength and Durability Parameters of Geopolymer Concrete | Navyatha Ch., Sabitha D., N.P. Rajamane, N.R. Iyer, Packialakshmi S. |
| | 448 | Numerical Analysis of Coir Filler Based Polymeric Composites for Evaluating the Flexural Performance | A. Kalita, V.K. Mahakur, S. Bhowmik |
| | 449 | Corrosion Performance of Banana Peel Based Epoxy Polymer Composite | A. Kumar, D. Kumar, S. Kumar, S. Bhowmik |
| | 450 | A Comparative Analysis of Mechanical Properties in Fdm-Printed Pla and Cfpla Components Under Different Printing Parameter Variations | F. Mayesha, S. Chowdhury, A. Ahmed |
| | 451 | Effect of Deep Cryogenic Treatment With Post Tempering on Hardness of Nimonic-90 | G. Singh, K.N. Pandey |
| | 456 | Neural Network Modeling of Dual Phase Steel Coiling Temperature | H. Panjjar, M. Muruganath |
| | 459 | Characterization Andtribological Behaviour of Duplex Electroless Ni-W-P/Ni-P Coating | P. Biswas, S.K. Das, and P. Sahoo |
| | 310 | Sustainability in Supply Chain of Packaged Marine Products: An Investigation on Challenges | S. Majumdar, D. Singhal, S. Tripathy |
| 203 | Influence of Structural Tailoring on the Dynamics of a Tapered Anisotropic Box Beam | G. Deepak Kumar, B. Panigrahi | |
| 729 | Additive Manufacturing of Polylactic Acid (Pla) Based Biopolymer Using Inhouse Fabricated Filament and Its Characterization for Bio-Medical Application | K. Kumar, V. K. Balla, A. Chanda, S. Bodhak | |
| 619 | Microstructural Investigation of Laser Engraving of Jalore Pink Granite | A.K. Sinha, S.N. Joshi | |
| 220 | Design and Analysis of Rigid Overhead Catenary System | J. Dhar, L. Sarkar, P. Mondal, A. Das | |

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| M 3-9 (online) (Prof. Somnath Roy, Prof. Koushik Ghosh, Prof. Samar Chandra Mandal) | 703 | Mixed Ionic-Electronic Conductivity and Dielectric Relaxation of Na ₂ O Doped ZnO-P ₂ O ₅ -V ₂ O ₅ Quaternary Glass System | S.B. Hota, D. Biswas, R. Mondal, D. Roy |
| | 718 | Experimental Study on Micro-Milling of Bulk Metallic Glass | D. Ray, A. B. Puri |
| | 726 | Pinns To Detect and Quantify Damage in Dynamical Systems | N. Mahar, S. Sen, L. Mevel |
| | 730 | Thermal Challenges With Next Generation Computer Chips And Proposed Mitigations | S. Basak |
| | 735 | AI & ML in Manufacturing Sectors in An Industry 4.0 Revolution | Mad T. Ahmed, Angelina, S. Tripathy, D. Singhal |
| | 620 | A Detailed Review of the Combustion and Emission Characteristics of a CI Engine Using Nano-Particle Additives and Biodiesel and Diesel Blended Fuel | S. Panda, A. K. Rout |
| | 630 | Biomass Regenerated Two-Stage Desiccant Cooling (TsdC) System Used for Greenhouse Farming in Hot and Humid Regions: A Seasonal Performance Study | C. Mandal, A. Ganguly |
| | 631 | Mathematical Modelling and Numerical Simulation for Studying the Trajectory of Dust Particle Approaching Solar Photovoltaic Panel | Vandana, S. Ghosh, S. Das, J.D. Mondol |
| 635 | Evaluation and Multi-Objective Optimization of a Two-Stage Desiccant Cooling (TsdC) System Integrated With Biomass-Based Regeneration Unit for Sub-Tropical Greenhouse Cooling | C. Mandal, A. Ganguly | |
| 637 | A Hybrid Ptc-Dish Based Concentrated Solar Power Steam Generator: Design and Analysis | T Bag, a Kumari, G Dabi, M Singh, S Ghosh | |
| 06:30PM - 07:00PM | PRESENTATION BY INDUSTRY (Chair - Prof. Debabrata Nag) (RSB Global, BTL EPC Ltd., Shree Rapid Technologies, Jupiter Wagons Ltd. & others) Venue: Seminar Room, Mechanical Engineering Department | | |
| 07:00PM - 07:15PM | KEY NOTE SESSION II (ONLINE) (Chair- Prof. Amit Karmakar) Venue: Seminar Room, Mechanical Engineering Department Dr. Oleksij Fomin, Professor, State University of IT, Ukraine. | | |
| 07:15PM - 09:00PM | CONFERENCE DINNER | | |
| INCOM 2024 Program Schedule (DAY 02 - JAN 6, 2024) | | | |
| 09:00 AM - 10:30AM | PLENARY SESSION II (ONLINE) (Chair - Prof. Dipankar Sanyal) Venue: Seminar Room, Mechanical Engineering Department | | |
| 09:00 AM - 09:45AM | Dr. Partha P. Mukherjee , Professor & University Faculty Scholar, School of Mechanical Engineering, Purdue University, USA <i>"Mechanistic Interrogation of Thermal Stability in Energy Storage"</i> | | |
| 09:45AM - 10:30AM | Dr. Bibek Bandyopadhyay , Senior Adviser, EY New Delhi, Former Director, Solar Energy Centre, and Former Adviser, Ministry of New and Renewable Energy, Gol <i>"The Future of Solar Energy: exploring sustainable pathways"</i> | | |
| 10:30 AM -11:00 AM | HIGH TEA | | |
| 11:00AM -12:30 PM | KEY NOTE SESSION III (Chair - Prof. Goutam Sutradhar) Venue: Seminar Room, Mechanical Engineering | | |
| 11:00AM-11:30 AM | Mr. Rambabu Ch. , Chief Executive Officer, AI Airport Services Ltd., India <i>"Challenges and Prospects of Aviation Industry in India: A Road Map"</i> | | |
| 11:30 AM-12.00 PM | Dr. Vikas Singh , RD&T Division, Tata Steel Ltd. <i>"Science & Engineering fleet: Propelling the Steel Industry"</i> | | |
| 12:00 PM-12.30 PM | Dr. Ashoke De , Air-force Chair Professor, Dept. of Aerospace Engg. & Dept. of Sustainable Energy Engg., IIT Kanpur, India <i>"Modeling of Two-phase systems: Atomization to Reacting sprays"</i> | | |
| 12:30 PM -02:00 PM | TECHNICAL SESSION III | | |
| Venue/Session Chair | Paper ID | Title | Authors |
| Seminar Room (Prof. Dipten Misra) | 137 | Impact of Central Conduction Body and Cavity Inclination on Heat Transport in Presence of Magnetic Fields | A. Raj, A. Kabiraj, N.K. Manna, N. Biswas, D.K. Mandal |
| | 139 | Turbulent Flow in Presence of a Slender Bluff Body | S. Bit, S.C. Murmu, H. Chattopadhyay |
| | 142 | Improvement in the Convective Heat Transfer in Laminar Pipe Flow By Inserting Twisted Tape | K. Paul, A. Pal, K. Pradhan, B. K. Mandal |
| | 143 | Numerical Analysis of Melt Pool Behavior During Pulse Laser Based Micro Drilling of Ss-304 Alloy | B.K. Singh, S. Kapil and S.N. Joshi |
| | 144 | Performance Analysis of Sudden Expansion and Dump Diffuser Geometries Across Three Reynolds Number Regimes | Prajina V P, N.K. Manna, U. Rana, A. Guha |
| | 145 | Velocity Profile Analysis of Three Inline Eccentrically Arranged Submerged Vanes: A Step To Understand Sediment Control Structure | B. Nandi, R. Das, S. Chowdhury, S. Das |
| | 147 | Fluid-Structure Interaction of Twin Flexible Baffles Enhancing Mixed Convection in a Semicircular Channel | A. Halder, A. Bhattacharya, S. Sarkar, N.K. Manna, N. Biswas, D.K. Mandal |
| Audio Visual (Prof. Prasanta Sahoo) | 409 | Effect of Temperature and Strain Rate on Tensile Flow Behaviour of 316 Ln Steel | M.K. Patel, S. Jana, C. Prabhakar, R. Kumar, S. Shyamal, U. Bera, P.C. Chakraborti |
| | 419 | Predicting An Optimal Electroless Ni-B Coating Bath Composition for Higher Thickness Using Ann-Ga Technique | S. Kumar, A. Kumar, V. Srikanth, B. Singh, A. Raj, A. Nag, A. Mukhopadhyay |
| | 434 | Grey Taguchi Based Parametric Optimization Studies on Machinability of Cupola Slag Reinforced Lm11 Matrix Composites | S. Chakravarty, P. Haldar, T. Nandi, G. Sutyadhar |
| | 435 | Utilization of Cupola Slag As Fine Aggregates in Green Concrete | R. Sikder, S. Chakravarty, D. Sau, P. Haldar, S. Mandal, T. Nandi, G. Sutradhar |
| | 453 | Microstructural and Tribological Characteristics Study of Ti ₂ O ₃ Reinforced Ni-P-Mo Alloy Coatings | S. Sarkar, S. Roy, C.K. Sahoo, S.R. Maity |
| | 457 | Minimization of Friction Coefficient of Electroless Ni-B Coatings Using Particle Swarm Optimization (Pso) | A. Raj, K. Rajak, M. Barman, T.K. Barman, P. Sahoo |
| PG Seminar (Prof. Balaram Kundu) | 458 | Effect of Microstructure on Fatigue Crack Growth Rate of Ti-6Al-4v Alloy | S. Sarkar, A. Ranjan, S. K. Mishra |
| | 148 | Applicability of Energy Transport Models in Modeling Mixed Convection in a Vented Enclosure With a Heat-Generating Porous Body | A. Chakravarty, K. Ghosh, A. Mukhopadhyay, S. Sen |
| | 149 | Analytical Solution for Purely Electrically Actuated Time-Dependent Rotational Flows in Microchannel | A. Sengupta, G.C. Shit |
| | 150 | Natural Convection in a Semicircular Channel in Presence of Elastic Thin Baffles | A. Bhunia, S. Samanta, S. Maity, S. Sarkar, N. K. Manna, N. Biswas, D.K. Mandal |
| | 153 | Improving Aeration Efficiency in Hydraulic Jump: An Approach To Improve Water Quality | S. Mondal, S. Das, R. Das, and S. Mukherjee |
| | 155 | An Approximate Model for Increase in Temperature of Heat Transfer Fluid Passing Through a Parabolic Trough Solar Collector | N. Barman, S. Simlandi, S. Mandal |
| | 156 | Measurement of the Thermal Diffusivities of the Insulating Panel Using Boiling Water | S. Rout, R.K. Sahoo, K. Chaudhury |
| PG Automobile | 157 | Artificial Neural Network Code for Prediction of Friction Factor | A. Vasa, K. Chaudhury |
| | 501 | Characteristics Study of Load-Sensing Hydraulic System | S. Paul, R. Saha, D. Sanyal |
| | 505 | Yaw Motion Control Strategy for Autonomous Underwater Vehicles (Auvs) | P. Ghosh, P. Mandal |
| | 507 | Pid Controlled Linear Motion of Low Cost Electric Actuator | M. Ghosh, S. Dasmahapatra, A. Karar, P.J. Roy |

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| (Prof. Saikat Mookherjee) | 508 | Position Control of Hydraulic Actuator of Electrohydraulic Positioning System Using Pid and Fuzzy-Pid Controller | G. Kumar, N.P. Mandal |
| | 510 | Development of IoT Based Device for Monitoring and Control of Lean Blowout in Model Gas Turbine Combustors Using Open Source Software and Hardware | M.K. Manna, S. Dutta, S. De, S. Sarkar, A. Mukhopadhyay, S. Sen |
| M-4-1 (Prof. Partha Bhattacharya) | 209 | Nonlinear First Ply Failure Characteristics of Composite Cylindrical Panels Under Non Uniform Load | S. Choudhury, A. Ghosh, D. Chakravorty |
| | 210 | Study of Geometric Nonlinear Free Vibration of AFG Microbeam Embedded on Variable Winkler Foundation | H. Lohar, A. Mitra |
| | 212 | Non-Linear Elastic Property Tailoring in Large Deforming Anti-Curvature Honeycomb Lattices | S. Ghuku, T. Mukhopadhyay |
| | 213 | An Approach To Reduce Crack Propagation in An Arc-Shaped Cracked Specimen Via Piezoelectric Patch | S. Pattanayak, G. Pohit |
| | 214 | Free Vibration Analysis of Variable Thickness BFGM Rotating Micro-Disks Using Modified Couple Stress Theory | S. Pal, D. Das |
| | 215 | Contact Analysis of Truncated Cylindrical Asperities | T. Jana, A. Mitra, P. Sahoo |
| M-4-2 (Prof. Sumanta Neogy) | 216 | Numerical Study on Layer Thickness and Nozzle Size Interdependency on Elasticity of FDM Part | A.K. Shah, A. Jain |
| | 217 | Design, Synthesis & Optimization of Latch Mechanism Using Mathematical Model for Closing Doors in Aerospace Vehicles | M.H. Naidu, A. Beohar, S.G. Thomas, U.A. Subramanian |
| | 221 | Non-Linear Static Deflection Analysis of a Functionally Graded Micro-Beam Based on Modified Couple Stress Theory | Samrat, D. Das |
| | 222 | Free Vibration Analysis of Rotating Porous Power-Law Functionally Graded Conical Shell in Thermal Environment | S. Pal, M. Rout |
| M-4-15 (Prof. Snehamoy Majumder) | 223 | Stress Analysis of Tapered Laminated Composite Beam Under Hygrothermal Environment | D. Gayen, R.K.Mitra, S. Swar, D. Ghosh, N. Dey |
| | 417 | Free Vibration of Sandwich Cantilever-Folded Plate With a Homogeneous Core | D. Basu Dutta, S. Das Pal |
| | 609 | Performance Study of a CI Engine Using Emulsified Diesel As Fuel | P.K. Mondal, B.K. Mandal |
| | 628 | Numerical Analysis of Entropy Generation in Solar Parabolic Trough Collector Using Water (H ₂ O) As Heat Transfer Fluid | B. Paul, A. Rai, V. Kumar |
| | 632 | Understanding Sustainability of Agrarian Practices in Western Basins of South 24 Parganas | P. Mukherjee, S. Das, A. Mazumdar |
| | 633 | Review of Different Catalytic Pyrolysis of Biomass | S.K. Das, P.C. Roy, R. Chakravorty, S.K. Ghosh |
| | 634 | Energetic and Exergetic Analysis of Basic and Regenerative Organic Rankine Cycle for Waste Heat Recovery System | S. Sardar, P.C. Roy |
| M-4-16 (Prof. Rana Saha) | 638 | Biomethane Polygeneration in India | A. Bose, N. Das |
| | 639 | Process Modelling and Analysis of Producer Gas Reactors for Biomass-Derived Gas Quality Enhancement | K. Gautam, D. Verma, S. Ghosh |
| | 731 | Modeling of Blood Flow Through a Deformable Artery | B. Mandal, G. C. Shit |
| | 732 | Energy Amplification Approach for Analyzing Linear Stability of Rotating Microchannel Flows | S. Bera, G. C. Shit, M. Reza |
| | 733 | Development and Characterization of a Low-Cost Hemostatic Film With Marine Shell Waste | P.K. Sasmal, P. Datta, A. Chanda |
| | 739 | Lithium-Ion Battery Thermal Management Using Phase Change Materials | A. Nandji, R. Jana, K. Chakravorty, D. Biswas, R. Roy, N. Biswas |
| | 740 | Predicting Heat Transfer Coefficient Using Bidirectional Long Shortterm Memory | A. Basu, A. Saha, S. Banerjee |
| | 741 | Optimizing Thermal Fluids: The Role of Machine Learning in Predicting Nanofluid Heat Capacity | A. Saha, A. Basu, S. Banerjee |
| 02:00PM - 03:00PM | | | |
| CONFERENCE LUNCH | | | |
| PANEL DISCUSSION (INDUSTRY AND ACADEMIA) | | | |
| Venue: Seminar Room, Mechanical Engineering Department | | | |
| "Current Trends of Mechanical Engineering Education: Academia Industry Needs" | | | |
| Theme Talk by Dr. Amitabha Ghosh , Former Director, IIT Kharagpur and Ex. Professor, IIT Kanpur. | | | |
| Dr. Suman Chakravorty , Professor, Dept. of Mechanical Engg. & Sir J. C. Bose National Fellow, Indian Institute of Technology Kharagpur | | | |
| Mr. Sujit Guha , Head, TCS COIN – Academic Research & Innovation, Tata Consultancy Services, Kolkata | | | |
| Dr. Naresh Chandra Murmu , Director, CSIR-CMERI, Durgapur | | | |
| Mr. Sudipta Kumar Mukherjee , Chief Advisor (Generation) CESC Ltd., Kolkata | | | |
| Session Moderator: Dr. Sudipta De , Professor, Dept. of Mechanical Engg., Jadavpur University | | | |
| 04:30 PM - 04:45 PM | | | |
| TEA BREAK | | | |
| 04:45 PM - 05:15 PM | | | |
| VALEDICTORY SESSION | | | |