9th International & 30th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2023)

December 08-10, 2023

Session A1: Additive Manufacturing

Date: 08.12.2023 **Time:**02:30 pm – 04:30 pm

Session Chairs: Prof. Y Ravi Kumar & Dr. G.M. Karthik **Location:** G4 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Design and Development of a hybrid strut-based lattice structure using Fused Deposition Modelling	Prof. Y Ravi Kumar	02:30 – 03:00
13	Effect of track and layer overlapping on the residual porosity generation in the selective laser melting of AlSi10Mg	Ashish Kumar Mishra	03:00 – 03:10
37	Investigation on Kinematics in Additive Manufacturing	Yash Gopal Mittal	03:10 – 03:20
41	Energy absorption characteristics and Compressive mechanical properties of the Hybrid lattice structure	Uday Kumar Jonnala	03:20 – 03:30
59	Fabrication of tri-material laminate structure using laser powder-bed fusion homemade setup	Manchu Mohan Krishna Sai	03:30 – 03:40
77	Development of Novel Ti64-Fe-Co-based β-Titanium Alloy with Improved Strength and Elongation Properties Using Laser Processing Route	Ipsita Mohanty	03:40 – 03:50
78	Role of Laser Fluence on the Characteristics of AlSi10Mg Track Deposited through DED-L-based Additive Manufacturing Technique	Saurav Misra	03:50 – 04:00
90	Investigating Stringing Defects in 3D Printed PLA Parts: Defect Identification and Optimization Using MobileNetV2 CNN Model	Vivek V Bhandarkar	04:00 – 04:10
101	Deformation behaviour and elastic energy absorption capability of additively manufactured strut-based and Voronoi lattice structures on FDM	Sankineni Rakesh	04:10 – 04:20
440	An investigation on tensile strength of additively manufactured recycled PET material parts	Kapil Kumar Goyal	04:20 – 04:30

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Session B1: Advances in Machining

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Dr. Prasada Raju & Dr. Basil Kuriachen **Location:** G5 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Influence of post processing on the LPBF-AlSi10Mg	Dr. Basil Kuriachen	02:30 – 03:00
17	Face Centered CCD-based RSM Modelling and Optimization of parameters for Milling Electrochemical Spark Micromachining of E-Glass Fiber Composites	Kriti Sahai	03:00 – 03:10
44	Investigations on the effect of hybrid cooling/lubrication strategies on machining characteristics of SS316L	Mayurkumar A Makhesana	03:10 – 03:20
46	Advanced FE-based Hybrid Algorithms to Optimize Uncertain Multi response Process Parameters in Tungsten Heavy Alloy Machining	Sreejith S	03:20 – 03:30
54	Wear of coated carbide tool having different microstructure and composition in wall end-milling of SS304	Ronit Kumar Shah	03:30 – 03:40
67	Experimental Investigation of MHD Convection in ECDM Process for Microchannel Fabrication	Dilip Gehlot	03:40 – 03:50
75	Machinability analysis of AISI 4140: A comparison between dry, flood, and vegetable oil-based EMQL machining performance	Raval Parth Niranjanbhai	03:50 – 04:00
76	Fabrication of Multiple Blind Holes on Glass Using Ultrasonic-Assisted ECDM Process	Anurag Shanu	04:00 – 04:10
23	Modelling of Ultrasonic-Assisted Abrasive Flow Machining using Artificial Neural Network	Dr. Gudipadu Venkatesh	04:10 – 04:20
442	Utilization of agro waste (barley husk) for development of sustainable packaging with improved physicochemical properties	Sangeeta Garg	04:20 – 04:30

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Session C1: Processing of Advanced Materials

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. Rajesh Kumar Verma & Prof. V S Senthilkumar **Location:** G6 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Impact of Alumina ceramic reinforcement on AA6082-T6 aluminium alloy and its corrosion behavior analysis	Prof. V S Senthilkumar	02:30 – 03:00
42	Experimental study on hole quality parameters in drilling of Quartz Polymeric Composite	Dr. N Selvaraj	03:00 – 03:10
47	Experimental Investigation of Strength Properties of Aluminum Wire Reinforced Cement Concrete	Dr. Vinay Pratap Singh	03:10 – 03:20
368	Characterization of Al- 5% TiB2 functionally graded composites developed via Centrifugal Casting Method	Basudeb Rajak	03:20 – 03:30
130	Numerical modelling of cure kinetics of a porous thermoset polymer	Bhishm Dewangan	03:30 – 03:40
165	Fabrication of composite Material for Farm Equipment: A Review	Ekta Sharma	03:40 – 03:50
207	Solid particle erosion behaviour of dolomite dust filled hemp-epoxy composites	Swaraj Maurya	03:50 – 04:00
282	A comparative study of effects of multiple reinforcements incorporated with Al-Si-Mg alloy using friction stir processing	Pratap Singh	04:00 – 04:10
317	Study on the mechanical and wear properties of A 319-SiC composite produced by stir casting process.	Dr. Lakkoju Sankara Rao	04:10 – 04:20
417	Modeling of Thermophysical and Physicochemical Characteristics of SMAW Coating	Alok Gupta	04:20 – 04:30

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Session D1: Advances in Machining

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. S. Bukkapatnam & Dr. M Vashista **Location:** G7 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Performance evaluation of ultrasonic Assisted Abrasive Flow machining	Dr. Venkatesh Gudipadu	02:30 – 03:00
83	Estimating Material Deformation Characteristics During Orthogonal Cutting Using Digital Image Correlation	Dr.Mohit Law	03:00 – 03:10
187	Analysis on Fiber Laser Micro Grooving Characteristics of Ti6Al4V	Mohit Pandey	03:10 – 03:20
85	AHP-TOPSIS Integrated Approach for Parameters Selection in WEDM of Titanium Alloy	Dr. D Devarasiddappa	03:20 – 03:30
92	Predictive Modeling of Surface Roughness Parameters and MRR during Turning of Inconel 625 with Coated Inserts using Artificial Neural Network.	Muzammil Mansoor Tole	03:30 – 03:40
94	The evolution of morphology and chemistry in fused silica surface after medium-pressure plasma processing	Hari Narayan Singh Yadav	03:40 – 03:50
95	Performance evaluation of various tool materials and EDM parameters for fabrication of large-area micro-textured surfaces	Ranajit Mahanti	03:50 – 04:00
96	Effectiveness of fixture design on cooling of viscoelastic soft polymer during cryogenic assisted micro-milling process	Partha Sarathi Mallick	04:00 – 04:10
97	Modelling and Parametric analysis for WEDM during machining of heat treated AZ31 alloy	Prof. Sanjay Mishra	04:10 – 04:20
98	Investigation into WECM of Nitinol SMA using ozonated NaNO3 electrolyte	Naresh Besekar	04:20 – 04:30

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Session E1: Additive Manufacturing

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. N K Jain & Dr. Venkateswara Rao Komma **Location:** G2 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Solid state Additive Manufacturing	Prof. N K Jain	02:30 – 03:00
415	Fabrication Process Development of a Three Dimensionally Rotated FSS Unit Cell for Wide-Angle Microwave Absorbers	Prof. J. Ramkumar	03:00 – 03:10
106	Study on effects of additive manufacturing process conditions on part properties for engineering applications	Abhishek Raj	03:10 – 03:20
119	Mode-I Fracture Behavior of 3D Printed PEEK using Energy-partitioning Technique	Gaurav Sharma	03:20 – 03:30
129	Optimization of Process parameters and Investigations of Bead Geometries of GMAW-Based Wire–Arc Additive Manufactured 316L Stainless Steels	Gaurav Kishor	03:30 – 03:40
133	Statistical investigation on dispersion quantification for H13 steel particle-filled polymer composite 3D printed feature	Tadi Siva Prasad	03:40 – 03:50
136	An Investigation of Threaded Insert Performance in Additively Manufactured Parts.	Dixita Yadav	03:50 – 04:00
137	Effect of layer thickness on tensile properties for alumina particle reinforced polymer composite using 3D-printing	Annada Prasad Moharana	04:00 – 04:10
138	A systematic review on 4-dimensional printing for the exploration of the material structures via stimulus-response	Pankaj Kumar	04:10 – 04:20
144	Unravelling the processing parameters for selective positioning of multi-materials using Laser decal Transfer based μ-3D printing	Arpit Kumar Singh	04:20 – 04:30

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Session F1: Advances in Machining

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. P V Rao & Dr. Joy Prakash Misra **Location:** G3 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Advances in Machining	Prof. P V Rao	02:30 – 03:00
103	Machining of Zirconia Ceramic with a USMM Process Using SiC Abrasives: An Experimental Investigation and Simulation	Debabrata Dhupal	03:00 – 03:10
115	Microstructure alteration and crystallographic texture evolution in NMQL assisted end milling of Incoloy 925	Shravan Kumar Yadav	03:10 – 03:20
120	Meso-level Surface alloying of Hastelloy C 276 using WS2 powder mixed dielectric through μ-EDM setup	Souradeep Dutta	03:20 – 03:30
121	Finite Element Modal Analysis of Axisymmetric Hollow Sonotrode used in USM Machine	Pradeepti Vishwakarma	03:30 – 03:40
123	Electrochemical Micromachining and Potentiodynamic Polarization Analysis of Nitinol Shape Memory Alloy in Ethylene Glycol-based Neutral Solutions	Abhijeet Sethi	03:40 – 03:50
139	Experimental Investigations on Tool Wear Analysis in Dry Machining of KhN67VMTYu Super Alloy	Jayaram C Sasi	03:50 – 04:00
148	Magnetorheological Ultra-Fine Finishing on the 3D Surface of K9 Optical Glass	Ajay Berry	04:00 – 04:10
149	Machinability Analysis in Wire-EDM of Cryogenically Treated Ti6Al4V Alloy	Dr. Mithilesh K Dikshit	04:10 – 04:20
151	Application of Machine Learning Techniques in Ecological Grinding of Inconel 718	Dr. Manoj Kumar Sinha	04:20 – 04:30

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Session G1: Advances in Materials Joining

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. Kripa Shanker & Prof. Biswanath Doloi **Location:** Senate Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Effect of microstructure evolution during plastic deformation on the formability of Advanced High Strength Steels (AHSS)	Dr. Marrapu Bhargava	02:30 – 03:00
21	Numerical Study of the Effect of Tool Rotational Speeds on Material Flow and Strain Rates During Friction Stir Butt Welding of AA2219-T87 Plates	Bagadi Ramana Murthy	03:00 – 03:10
33	Effect of activated flux on SS304 under autogenous ATIG welding on weld geometry, microstructure, and hardness	Anand Baghel	03:10 – 03:20
48	Experimental Investigation of Dissimilar Laser Welding between Maraging Steel and Stainless Steel	Vishal Kumar	03:20 – 03:30
55	Change in Reflectance of Silicon Wafer with Different Micro Patterned Surface Fabricated Using Fiber Laser	Tuhin Kar	03:30 – 03:40
385	Comparative study on induction heating assisted hy-brid friction stir welding with friction stir welding of Nitinol in lap welding configuration	Susmita Datta	03:40 – 03:50
73	The Behaviour of Dissimilar Welded Joint of Alloy 617/P92 Steel at High Temperatures	Amit Kumar	03:50 – 04:00
88	Optimisation and microstructural analysis of wear characteristics on friction stir processed 2024 aluminium alloy	V S Senthil Kumar	04:00 – 04:10
89	Scenario of joining various aluminium and its alloys for automobile applications by using FSW method	Sayon Dey	04:10 – 04:20
91	Comparison of Mechanical Properties and Microstructural Characteristics of Conventional V-Groove and Narrow-Groove TIG-Welded Martensitic P92/304L Austenitic Stainless Steel Dissimilar Welded Joint	Gauravkumar Roshanlal Dak	04:20 – 04:30

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Session H1: Trends in Materials Processing

Date: 08.12.2023 **Time:** 02:30 pm – 04:30 pm

Session Chairs: Prof. U. S. Dixit & Dr. Kaushik Bandyopadhyay **Location:** Seminar Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Recent trends in sheet metal forming	Dr. Kaushik Bandyopadhyay	02:30 – 03:00
14	Simulation of Ultra-Thin Strip Rolling using ABAQUS Explicit	Dantuluri Narendra Varma	03:00 – 03:10
30	Formability of tailor welded blanks and characterization of residual stresses-a review	Amit Kumar	03:10 – 03:20
64	Effect of Process Parameters on Surface Quality during Incremental Forming of Thin Sheets of Inconel 625	Ankit Kumar Gupta	03:20 – 03:30
87	Selective area modification of Al alloy using PM green compacts of micro-nano sized powders in EDM	Bhargab Madhab Barua	03:30 – 03:40
99	Investigation in the effect of texturing on indigenously developed PVD TiN coatings on cutting tool and its effect on the machining of Nimonic 90	Gaurav Kumar	03:40 – 03:50
117	Characterization of TiN coating deposited by cathodic arc evaporation under various process parameter conditions	Arti Sahu	03:50 – 04:00
460	Improvement of weld properties by friction stir processing	Kuldeep Singh Chauhan	04:00 – 04:10
433	Design, Simulation, and Testing of 3D printed auxetic structure for Vibration Isolation	Allada Joshita, Ake Kowsik	04:10 – 04:20
279	Development and quasi-static compressive behaviour of Al-cenosphere composite foam	Ashish Kumar Singh	04:20 – 04:30

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Session A2: Additive Manufacturing

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Prof. P M Pandey & Dr. Pawan Sharma **Location:** G4 Classroom

Paper ID	Paper Title	Presenting Author	Time
155	Mechanical strength and shrinkage investigation of fused filament fabricated H13 die steel	Subham Kumar Pandey	05:45 – 05:55
163	Structural Behaviour of Reinforced Polymer through Fused Filament Fabrication	Akash Jain	05:55 – 06:05
164	Investigating the fatigue behavior of 3D printed continuous carbon fiber reinforced polymer (CFRP) composites	Ankit Dhar Dubey	06:05 – 06:15
176	Experimental Investigation on the End Milling of Wire Arc Additive Manufactured Feature	M Shanmuka Srinivas	06:15 – 06:25
181	Experimental study on 3D printed gripper with nitinol tactile sensor for an improved gripping performance	Kashfull Orra	06:25 – 06:35
185	Porosity control in 4043 aluminium alloy fabricated through wire arc additive manufacturing process	Chanchal Chauhan	06:35 – 06:45

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Session B2: Advances in Machining

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Prof. V. RadhaKrishnan & Dr. Govind Narayan Sahu **Location:** G5 Classroom

Paper ID	Paper Title	Presenting Author	Time
419	An Experimental Investigation on the Behaviour of Voltage and Current in Plasma Electrolytic Polishing	Prof. J. Ramkumar	05:45 – 05:55
160	Study of cutting performance of micro drilling of Ti-6Al-4V under different cutting parameter and MQL flowrates	Ashok Kumar	05:55 – 06:05
161	Modeling Chip Thickness Ratio and Shear Angle using Hybrid Nanofluids while Machining Inconel 718 under Minimum Quantity Lubrication	Mr. Kulkarni Paresh Vijay	06:05 – 06:15
168	Enhancing Low-Frequency Dynamic-Stiffness of Robotic Milling Machine Using Active Damping	Dr. Govind Narayan Sahu	06:15 – 06:25
171	Improvement of electrochemical micromachining by pulse amplitude modulation of step pulse waveform	Himadri Sekhar Panda	06:25 – 06:35
172	On the Electrochemical Discharge Milling of Polycarbonate using Vertically Upward Tool Feeding Technique	Sudip Santra	06:35 – 06:45

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Session C2: Processing of Advanced Materials

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Dr. Tapash Kumar Nandy & Dr. Vinay Pratap Singh **Location:** G6 Classroom

Paper ID	Paper Title	Presenting Author	Time
128	Investigation on Mechanical properties of Bio-polymer nanocomposites for Artificial Bio-Bearing (ABB) applications	Prof. Rajesh Kumar Verma	05:45 – 05:55
154	Analyzing the Influence of Alloying Elements on the TribocorrosionBehavior of AZ91D Magnesium Alloy Fabricated by Stir-Ultrasonication-Squeeze Casting	Dr. A Gnanavelbabu	05:55 – 06:05
328	Effects of hBN/SiO2 Nano-sized Particles on the Performance of ZA-27 Composite	Anuj Kumar	06:05 – 06:15
354	Effect of moisture diffusion on Mode I/II fracture toughness of Banana-sisal fiber reinforced epoxy composites	Suganth V	06:15 – 06:25
425	A State-of-an-art Review of Challenges Associated with Different Drilling Methods in Carbon Fibre Reinforced Polymer and their Solution Techniques	Vaibhav Nitin Pawar	06:25 – 06:35
427	Preparation, Characterization, and Hydrothermal Performance of Carbon Quantum Dots-based Nanofluid for Coolant Application	Kartik Srivastava	06:35 – 06:45

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Session D2: Advances in Machining

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Dr. Manas Das & Dr. Manoj Kumar Sinha **Location:** G7 Classroom

Paper ID	Paper Title	Presenting Author	Time
174	Experimental Investigation into Electrochemical Discharge Turning of Cylindrical Glass	Sudip Santra	05:45 – 05:55
179	Effect of cutting parameters using uncoated and coated carbide tools on cutting force during micro milling of AZ31B magnesium alloy	Kartik Chandra Bhagat	05:55 – 06:05
183	Experimental and Numerical Investigation of Cu-Be Microchannel Heat Sink for Thermal Performance subjected to Pulsed Flow	Dr. Anup Malik	06:05 – 06:15
184	Performance analysis of different tool materials during µ-electrical-discharge milling of NiTi shape memory alloy	Satish Chaurasia	06:15 – 06:25
100	A Comparative Performance Study of Die Sink EDM and Near Dry EDM Processes in Machining of NIMONIC-90	Gangadharudu Talla	06:25 – 06:35
186	Experimental Investigations into Fiber Laser Marking on PMMA	Mohit Pandey	06:35 – 06:45

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Session E2: Additive Manufacturing

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Prof. Santosh Kumar & Dr. J V Tirkey **Location:** G2 Classroom

Paper ID	Paper Title	Presenting Author	Time
199	Investigations of impact and hardness property of the 3D printed PLA bio-composites	Neha Choudhary	05:45 – 05:55
200	Machine learning service optimization for a cloud-based additive manufacturing process in neutrosophic environment	Samriddhya Ray Chowdhury	05:55 – 06:05
210	Numerical assessment of thermo-mechanical behavior of a multi-layer additive manufacturing process	Prameet Vats	06:05 – 06:15
217	Numerical Modelling of Temperature Development in Laser Powder Bed Fusion of Stainless Steel 316L	Vishnu S	06:15 – 06:25
223	Experimental investigation on Laser Direct Energy Deposition of Inconel 625 under the Application of Ultrasonic Vibration and Inter-pass laser Remelting	Prabhat Kumar	06:25 – 06:35
229	Meniscus Guided Electrochemical Additive Manufacturing	D Sri Satya Omkar	06:35 – 06:45

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Session F2: Advances in Machining

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Prof. Jose Mathew & Dr. Vivek Vajpai **Location:** G3 Classroom

Paper ID	Paper Title	Presenting Author	Time
188	Analysis on Grooving Characteristics of Al5052 Alloy Using Fiber Diode Laser	Mohit Pandey	05:45 – 05:55
189	The effect of dressing methods on the form accuracy of sintered PCD micro-grinding tools	Anang Katyayan	05:55 – 06:05
191	Effect of channel characteristics machined using μ-EDM on flow study	Aruna Kotlapati	06:05 – 06:15
195	Micro Ultrasonic Machining (Micro-USM) of Ti6Al4V Utilizing Multi Tip Micro Tools	Santosh Kumar	06:15 – 06:25
204	A Novel Approach Based on Reliability Concepts to Reduce Part Errors by Considering Thermal Errors of Machine Tools	Shashi Bhushan Gunjan	06:25 – 06:35
318	Electrochemical machining with identical polarity of tool and workpiece: A feasibility study	Maran R	06:35 – 06:45

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Session G2: Processing of Advanced Materials

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Dr. Deepak Deelip Patil & Dr. Akhilendra Pratap Singh **Location:** Senate Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
27	Effect of Unidirectional and Bidirectional cold-rolling on Magnetic properties of High entropy alloy	Rajnish Prakash Modanwal	05:45 – 05:55
62	Effects of quenching & partitioning treatment on microstructure and mechanical integrity of hot rolled microalloyed steel	Anup Kumar Maurya	05:55 – 06:05
82	Hydrogen Embrittlement and its prevention in high strength steel material	Vijay Katare	06:05 – 06:15
109	High velocity impact behavior of co-continuous ceramic composite with different volume fractions	Dr. V Krishnaraj	06:15 – 06:25
125	Experimental Studies on AA7475 Composites	Dr. A. Sreenivasulu Reddy	06:25 – 06:35
150	Influence of Retrogression and Reaging Treatments on the Electrochemical Corrosion Behavior of AA2014/Al2O3 Nanocomposites	Dr. A Gnanavelbabu	06:35 – 06:45

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Session H2:Advances in Materials Joining

Date: 08.12.2023 **Time:** 05:45 pm – 06:45 pm

Session Chairs: Dr. M Z Khan & Dr. Marrapu Bhargava **Location:** Seminar Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
110	Direct bonding of Cu to Cu for high-technology applications	Dipin Kumar R	05:45 – 05:55
111	Laser Welding of Two Transparent Plastics without Any Filler Materials	Nitesh Kumar	05:55 – 06:05
113	A Numerical Analysis of Self-Piercing Riveting of Aluminium alloys using Aluminium rivets	Swaraj Pritam Swain	06:05 – 06:15
234	Analyzing Online Thermal Signature for Bead Geometry and Microstructure in Laser Material Deposition (LMD) of NiCoCrAlYHfSi for Gas-Turbine Components	Saikat Nandi	06:15 – 06:25
275	Joining of dissimilar AA6063-T6 and CRCA/IS-513 alloys by FSSW-C and conventional FSSW: A comparative study through modelling and simulations	Sukanta Das	06:25 – 06:35
444	Effect of porosity and inter-metallics on the Microstructure based finite element analysis of Al-Si alloy	Gangarapu Akhila	06:35 – 06:45

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Session A3: Additive Manufacturing

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Ramesh Babu & Prof. J. Ramkumar **Location:** G4 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Revolutionizing material processing through Electrochemical Dissolution based processes	Prof. J. Ramkumar	09:00 – 09:30
230	Effect of Loading Orientation on Compressive Strength of Owl Feather-Inspired Cellular Structure: Experimental Investigation	Rakesh Kumar Sharma	09:30 – 09:40
243	Assessment of microwave heat treatment on mechanical and microstructural behavior of Co-Cr alloy dental parts fabricated through selective laser melting	Mohit Kumar	09:40 – 09:50
246	Material Utilization Efficiency-Guided Laser-Direct Energy Deposition of Inconel 718 Alloy Powder for Aeroengine Components	Prasenjit Patra	09:50 – 10:00
271	3D printed graded metamaterial for acoustic applications	Prof. J. Ramkumar	10:00 – 10:10
274	Functionalization of Additively Manufactured Ti alloy using Grinding Process: Achieving Uniform Surface Roughness	Mehsana Ahmed	10:10 – 10:20
281	Unleashing the Mechanical Characteristics of PLA-MWCNTs for Medical Advancements	Bobby Tyagi	10:20 – 10:30
283	Evaluating the influence of infill density for impact behaviour of virgin PLA and its composites	Tapish Raj	10:30 – 10:40
293	A Review on Additively Manufactured Prosthetic devices	Ajeet Manna	10:40 – 10:50
297	Tensile properties of polyether ether ketone printed by fused deposition modelling	Anilbabu Puli	10:50 – 11:00

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Session B3: Advances in Machining

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Anant Kumar Singh & Dr. Raju Shrihari Pawade **Location:** G5 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Impactful Surface Finishing Techniques for Industry 4.0	Dr. Anant Kumar Singh	09:00 – 09:30
214	Experimental Comparative Analysis of Conventional and EDM Micro-drilling Process on SLM Produced Marag-ing Steel	Jino Joshy	09:30 – 09:40
220	Influence of laser annealing of Kapton polyimide substrate on non-contact-based actuation of NiTi Shape Memory Alloy bimorph based smart actuator	Kaushal Gangwar	09:40 – 09:50
221	Exploring the potential of Laser-Assisted Machining on Ti6Al4V: A numerical and experimental study	Muruga Prabu U	09:50 – 10:00
226	Comparative Study of Different Flank Face Textures on Coated Carbide Tool during Machining of Hardened H13 Steel	Arunabh Choudhury	10:00 – 10:10
227	Fabrication of Titanium Nanotubes for Anti-fogging Application	Ratan Ahuja	10:10 – 10:20
233	Stability enhancement of the boring bar by implementing a particle damping approach	Ganesan Ramu	10:20 – 10:30
236	A New Mechanistic Approach for Selection of Machining Parameters in Micro Milling for Mitigating Size Effects and Chatter	Vishnu Kumar Singh	10:30 – 10:40
238	Improving Grindability of Stainless-Steel Clad Surface Using SiC Wheel	Sudipta Ghosh	10:40 – 10:50
157	Design and Analysis of a New Magnetorheological Worm Gear type Finishing Process for Improved Productivity	Shubham Khatri	10:50 – 11:00

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Session C3: Digital Manufacturing

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Satyandra Kumar Gupta & Dr. Mohit Law **Location:** G6 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Vision-based modal analysis of machine tool systems	Dr. Mohit Law	09:00 – 09:30
25	Design and In-House Development of Automatic Tube Filling Machine	Rahul Kumar	09:30 – 09:40
36	Quality Assessment of Ultrasonic Welded Joints Using Image Processing Technique	Sandeep Bose	09:40 – 09:50
66	Unsupervised weld defect classification through local deep image representative features	Satish Sonwane	09:50 – 10:00
71	An experimental study to predict conveying velocity of a vibratory conveyor feeder using Machine Learning	Ganesh Kumar Nithyanandam	10:00 – 10:10
135	Modelling of cranial implant and its prototype development using head CT scan data	Deepak Kumar	10:10 – 10:20
203	RAM Analysis of the A-Pan Boiling System in the Sugar Industry	Suyash Singh	10:20 – 10:30
206	The automatic classification of SS304 TIG welding defects uses visible-spectrum camera images and machine-learning technology	Aman Nohwal	10:30 – 10:40
211	Ball bearing fault identification using K-nearest neighbour classifier	Samrat Mandal	10:40 – 10:50
147	Vision-based Runout Measurement Method for End Mills	Dr. Mohit Law	10:50 – 11:00

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Session D3: Advances in Machining

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. P. Hariharan & Dr. Anirban Naskar **Location:** G7 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Measurement of grinding-induced deformation-depth using grazing incidence X-ray diffraction technique	Dr. Anirban Naskar	09:00 – 09:30
239	Micro-Channel Fabrication in Glass Using Nickel Coated Copper Tool in ECDM Machining and Optimization of Process Parameters	Akhilesh Kumar Tiwari	09:30 – 09:40
245	Experimental investigation and hybrid metaheuristic optimization using ANN-MOJAYA on corner accuracy during WEDM for Ti-3Al-2.5V	Vivekananda Kukkala	09:40 – 09:50
254	Investigation of Variant Electrodes in Electrochemical Micromachining of Stainless Steel 904L	E Rajkeerthi	09:50 – 10:00
255	Temporal Feature Analysis of Audio Signal for Instabil-ity Identification in High-speed Micromilling of Thin-walled Ti6Al4V	Gururaja S	10:00 – 10:10
257	Micro machinability evaluation of bottom pouring stir cast Al6061/GNPs nanocomposites	Sunil Rawal	10:10 – 10:20
259	Influence of Voltage and Scanning Rate on Surface Finish in Electrochemical Jet Machining (EJM) of Ti6Al4V	Arindam Maity	10:20 – 10:30
273	Inclusive application of polymer 3D printing and metal additive manufacturing for the development of modular-insert type wheels for green grinding	Sarath Babu Thekkoot Surendran	10:30 – 10:40
277	A comparative study on surface roughness analysis during turning of additively manufactured and wrought Inconel-718	Dr. Kamlesh Joshi	10:40 – 10:50
285	Optimization of Abrasive Jet Drilling on Alumina Plate using Silicon Carbide Abrasive	Deb Kumar Adak	10:50 – 11:00

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Session E3: Additive Manufacturing

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Debajyoti Bhaduri & Dr. Abhishek Das **Location:** G2 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Understanding the current and emerging joining technologies for electric vehicle battery pack manufacturing	Dr. Abhishek Das	09:00 – 09:30
299	Geometrical analysis of bead in Direct Current Electrode Positive-based Submerged Arc Additive Manufacturing (SAAM)	Suraj Goala	09:30 – 09:40
302	Numerical study on critical wire size for titanium melting through high-frequency induction heating for additive manufacturing process	Avadh Kishore Prasad	09:40 – 09:50
307	Selective Laser Sintering of CNTs-PA12 Polymer Nanocomposites	Jairam Raigar	09:50 – 10:00
310	Predictive Model for Deposition Success in Wire Laser Additive Manufacturing	Anas Ullah Khan	10:00 – 10:10
313	Feasibility Study on Additive Manufacturing of Inconel 625 and Aluminum Bimetallic Parts	Manjunath Bn	10:10 – 10:20
323	Development of CNN Framework for Surface Defect Analysis in WAAM of Bio-Compatible Ti6Al4V	Alok Kumar	10:20 – 10:30
335	Study of Aspect Ratio of Laser Directed Energy Deposition of Inconel 718 Alloy	Ajay Kumar Maurya	10:30 – 10:40
336	Analysis and Fabrication of Functionally Graded Prosthetic Socket using Fused Filament Fabrication	Mohit Teacher	10:40 – 10:50
343	3D- Printed Graphene Supercapacitors for Flexible and Wearable Electronics	Sudhansu Sekhar Nath	10:50 – 11:00

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Session F3: Advances in Machining

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Ajay M. Sidpara & Prof. Santanu Das **Location:** G3 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Effect of Beveled Exit Edge on Burr Formation in Drilling	Prof. Santanu Das	09:00 – 09:30
287	Influence of Microtool's Shape and Size on Microchannel Fabrication through Micro-EDM	Abhijeet Sethi	09:30 – 09:40
290	Low-cost fabric-based wearable energy storage device	Soumili Sahoo	09:40 – 09:50
298	Surface topographical characterization of ZnO nanostructured CFRP composite in high speed micro drilling	Arnab Das	09:50 – 10:00
300	A Comparative Study of Die-sinking EDM and Electrical Discharge Drilling (EDD) Process for making small holes in Cemented Carbide	Prof. S K S Yadav	10:00 – 10:10
305	Tool Condition Monitoring Techniques in Micromilling: A Review	Avinash Harischandra Kamble	10:10 – 10:20
311	High-Infeed Grinding of Aluminium Composite by Patterned Diamond Tool	Trilochan Prasad Nanda	10:20 – 10:30
312	Laser-based drilling of Granite: morphological and microstructural studies	Antash Kishore Sinha	10:30 – 10:40
315	Dry and near dry grinding with patterned brazed CBN wheel	Bandana Priyadarshini	10:40 – 10:50
272	A Comparative Thermal Analysis of Aluminum Welding using Friction Stir Welding (FSW), Plasma-FSW, and Tungsten Inert Gas (TIG)-FSW	Deepak Kumar Yaduwanshi	10:50 – 11:00

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Session G3: Advances in Materials Joining

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Jeevan Jaidi & Dr. Lakshay **Location:** Senate Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	FSW Tool-pin Profile Effects on Material Flow Mixing and Weld Geometry: A numerical study using different approaches and their limitations	Prof. Jeevan Jaidi	09:00 – 09:30
278	Thermomechanical Modeling and Analysis of Friction Stir Butt Welding of Aerospace Grade Aluminium-alloy (2219-T87) Plates	Bagadi Ramana Murthy	09:30 – 09:40
286	Experimental Investigations and Development of a Welding Fixture for Friction Stir Welding of Titanium Alloys	Ramprasad G	09:40 – 09:50
322	Design and Development of FSW Tool for Carbon-Manganese Steel	Sanjay Raj	09:50 – 10:00
341	Multipass Friction Stir Welding of Age Harden Aluminum alloy	Sunil Kumar Yadav	10:00 – 10:10
351	High Strain Rate Electromagnetic Crimping on a Variation of Impact Target Geometry	Ummed Singh	10:10 – 10:20
357	Influence of ALCLAD layer on the process responses during dissimilar micro-friction stir welding (μFSW) of aluminum alloy sheets	Mayank Verma	10:20 – 10:30
384	Predicting weld interface profile of laser wobble welding using an analytical approach at early design stage	Indranil Manna	10:30 – 10:40
70	Laser overlap welding of tab-to-terminal electrical interconnects for electric vehicle battery pack	Nikhil Kumar	10:40 – 10:50
405	Quality Assessment of fabricated micro-holes on microsliced Ti-6Al-4V alloy sheet using Maglev EDM	Prof Nirmal Kumar Singh	10:50 – 11:00

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Session H3: Trends in Materials Processing

Date: 09.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Kishor Kumar Gajrani & Dr. Venkatesh Gudipadu **Location:** Seminar Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Hybrid Metal Additive Manufacturing	Dr. Kishor Kumar Gajrani	09:00 – 09:30
142	An experimental effort implemented over CVD TiSiN thin film coating to improve mechanical and corrosion properties by annealing	Dr. Spandan Guha	09:30 – 09:40
143	Cyclic oxidation behavior of free-standing plasma sprayed Al_2O_3 - Cr_2O_3 coatings at 1000 °C temperature	Setu Suman	09:40 – 09:50
156	Single point incremental forming of CRCA-Tailor welded sheets	Yogesh Kumar Dewangan	09:50 – 10:00
158	Prediction of Bending Angle of Ti6Al4V Alloy Sheets Formed Multiple Laser Irradiations	Sujit Murlidhar Mulay	10:00 – 10:10
231	Synthesis and Characterization of Electroless Ni-P-Al_2O_3 Composite Coating on Aerospace-grade Mg Alloy for Improving Wear Resistance	Dr. Tushar Banerjee	10:10 – 10:20
247	Prediction of Cup Height using Non-Associated Flow Rule during Square Deep Drawing of Anisotropic Sheets	Amit Kumar	10:20 – 10:30
252	AFM Surface Morphology Investigation of Micro Holes on AISI 316 Stainless Steel by EDM Drilling	Dr. U Ashok Kumar	10:30 – 10:40
258	Effect of weld zone and forming histories on crushing behaviour of stretch-formed domes of laser welded blanks	Bhupesh Singh Katiyar	10:40 – 10:50
441	Impact of lean management in automotive industry: A case study	Rakesh Kumar	10:50 – 11:00

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Session A4: Additive Manufacturing

Date: 09.12.23 **Time**: 03:30 pm – 05:00 pm

Session Chairs: Prof. Murali Sundaram & Dr. Kapil Kumar **Location:** G4 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Nature Inspired Optimization Algorithm	Dr. Kapil Kumar	03:30 – 04:00
348	Staircase effect in Laser decal transfer based μ-3D printing for curved structure.	Anshu Sahu	04:00 – 04:10
349	Printability of AlSi10Mg and Ti6Al4V in LPBF using Machine Learning	Md Tabraiz Imam	04:10 – 04:20
355	A New Method for Part Consolidation and Functional Integration	Senthilkumaran K.	04:20 – 04:30
356	Microstructural characterization of AZ31B deposit made by novel PBFS process	Prabhakar Kumar Singh	04:30 – 04:40
360	Computational analysis of additively-manufactured tablets with hybrid infill pattern	R Durga Prasad Reddy	04:40 – 04:50
370	Laser Polishing of Additive manufactured Cobalt Chrome Alloy by Continuous Wave Line Focused Beam: A Response Surface Methodology based approach for improving Surface finish	Abhishek Kumar	04:50 – 05:00

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Session B4: Advances in Machining

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. S. S. Joshi & Dr. Dasarath Ram Yadav **Location:** G5 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Digital Twins in the field of Prognostics and Condition monitoring	Dr. Sabareesh G Rajasekharan	03:30 – 04:00
316	Artificial Neural Network-Based Prediction of Wire EDM Performance Characteristics during Machining of Ni50.3-Ti29.7-Hf20 SMA	Balaji V	04:00 – 04:10
320	Deep Learning-based Neural Network for flank wear prediction using Acoustic Emission signals on Inconel 617 alloy	Pramod A	04:10 – 04:20
321	An Experimental Analysis on Vertical Milling of Ti-6Al-4V under SQL based DBD Technique	Dr. Pranab Kumar Kundu	04:20 – 04:30
325	Fabrication of Tungsten carbide tool for micro-ECDM process through ECM using different electrolytes: a comparative study	Monika Singh	04:30 – 04:40
18	Neural Network Based Modelling for the comparative prediction of Material Removal Rate and Surface Roughness in fabricating channels on glass and silicon surface through the M-ECSMM process	Kriti Sahai	04:40 – 04:50
378	Grinding of Titanium Grade 5: A Review	Dr. Pranab Kumar Kundu	04:50 – 05:00

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Session C4: Modelling & Simulation in Manufacturing

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. G L Samuel & Prof. S.K. Panda **Location:** G6 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Modeling, Simulation and verification of femto second laser micro machining process	Prof. G L Samuel	03:30 – 04:00
63	Modeling and Prediction of Thermal Properties of Formulated SMAW Coating Flux Using ANFIS Model	Aditya Kumar	04:00 – 04:10
69	Influence of geometric error of a five-axis CNC milling machine on the accuracy of face gear tooth surface	Prasmit Kumar Nayak	04:10 – 04:20
74	Investigating the Effect of Mesh Parameters in Finite Element Simulation of Single Point Incremental Forming Process	Kirtan Paritoshkumar Lad	04:20 – 04:30
93	Investigation of Surface Roughness Parameters under Dry End Milling of Inconel 625 with Coated Tool	Dr. Ramesh Rajguru	04:30 – 04:40
102	Comparative Study of Multi-response Parametric Optimization of EDM Processes using Preying Behaviour Metaheuristic Algorithms	Devendra Pendokhare	04:40 – 04:50
413	Effect of Electrode Load Schedules on Nugget Size and Residual Stresses in Resistance Spot Welding of Mg-alloy/Steel Sheets: A numerical study	G Prashanth Kumar Reddy	04:50 – 05:00

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Session D4: Advances in Machining

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Dr. D Samuel Raj & Prof. Promod Kumar Patowari **Location:** G7 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Trends in tool wear measurement during machining of difficult-to-cut materials	Dr. D Samuel Raj	03:30 – 04:00
407	Fabrication of Low Friction Al-Based Metal Matrix Composites and its Machinability Study	Prof. Promod Kumar Patowari	04:00 – 04:10
334	Exploring Machining Capabilities of Al-Mg2Si-Si Rod with Coated Carbide Insert	Dipanwita Biswas	04:10 – 04:20
337	Influence of surface textures and tribological process parameters on frictional characteristics of Al alloy	Vikas Kumar Sahu	04:20 – 04:30
338	Influence of Grain-Size on Formability in Micro-Incremental Sheet Forming of Ultra-Thin Titanium Grade 2 Foils	Mainak Pal	04:30 – 04:40
358	Pair-wise Comparison of Crucial Barriers to Circular Supply Chain Adoption towards Sustainable Manufacturing Prospects: An ISM-based Approach	Rita Nagwal	04:40 – 04:50

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Session E4: Additive Manufacturing

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. N V Reddy & Dr. M Duraiselvam **Location:** G2 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Additive Manufacturing in Aerospace Industries	Dr. M Duraiselvam	03:30 – 04:00
374	Sustainable Manufacturing of Metal Additive Powders from Machining Scrap	Karan Baramate	04:00 – 04:10
376	Investigation on Influence of Various Operating Parameters in Wire Arc Additive Manufacturing using ER4043 Aluminium Alloy	Kayyala.Venkateswarlu	04:10 – 04:20
381	Microstructural and Mechanical Studies of Maraging Steel Fabricated by Laser-Powder Bed Fusion and Conventional Processes: A Comparative Study	Manoj Kumar	04:20 – 04:30
382	Numerical and Experimental Investigation of Freeform Fabricated Auxetic Structure-based Planar Mechanical Metamaterial	Shubhangee Singhal	04:30 – 04:40
383	Prediction of Tensile strength of Additively Manufactured Continuous Carbon Fiber Reinforced Polymer Composites through Machine Learning approach	Dr. M Duraiselvam	04:40 – 04:50
392	Effect of Inter-track Offset on the Dimensional Accuracy of Thick Wall Produced by Wire Arc Additive Manufacturing Process	Soumyadip Das	04:50 – 05:00

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Session F4: Advances in Machining

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. B. B. Ahuja & Dr. Amit Tyagi **Location:** G3 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Post-Processing of the Additively Manufactured Biomedical Implants through Hybrid Electrochemical Magnetorheological Finishing Process	Dr. Manas Das	03:30 – 04:00
372	Experimental Investigations on Plasma Cutting of Medium Carbon Steel	Dr Anand Petare	04:00 – 04:10
212	Modelling of microchannel cross-sectional profile generated on Ti-6Al-4V alloy by micro-abrasive waterjet	T N Deepu Kumar	04:10 – 04:20
379	A new way of estimation of feedrate in centreless grinding process using video analysis.	Amal Dev B S	04:20 – 04:30
393	A comparative assessment to evaluate force and stress of Nimonic 80A for different grinding schemes	Aswani Kumar Singh	04:30 – 04:40
397	Effectiveness of near-dry milling of austenitic stainless steel using HiPIMS deposited TiAlSiN nanocomposite with variable Ti and Si content	Chayan Ranjan Das	04:40 – 04:50
371	Modification of surface topography of Inconel 625 by fabricating ordered micro-textures using micro milling	Surya Prakash Singh	04:50 – 05:00

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Session G4: Processing of Advanced Materials

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. R.K. Gautam & Dr. Spandan Guha **Location:** Senate Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Impact of post heat treatment over coating materials.	Dr. Spandan Guha	03:30 – 04:00
24	Effect of Heat Treatment on the Properties and Microscopic Characteristics of Different Alloys Used in Gas Turbine Engines	Geetika Kumari Salwan	04:00 – 04:10
153	The Impact of Inorganic Fillers on the Static and Dynamic Mechanical Properties of Polyester Resin composites	Prof. J. Ramkumar	04:10 – 04:20
241	Effect of strain rate on high temperature deformation behavior of low carbon Steel	Praveen Gagrai	04:20 – 04:30
359	CO2 Laser Surface Modification of Green Si3N4 - SiO2 Ceramic for Enhanced Texture and Quality	Rajaram Kumar Gupta	04:30 – 04:40
363	Preliminary investigation of development and tribological behavior of bilayer electroless Ni – B coating with copper inclusion tin stabilized bath	Abhinandan Kumar	04:40 – 04:50
173	Finishing of Bioresorbable Magnesium Alloy by Viscoe-lastic Polymer Blended Minimal Geometrically Deformable Abrasive Tool	Shanmuka Srinivas M	04:50 – 05:00

Session H4: Advances in Materials Joining

Date: 09.12.23 **Time**: 03:30 pm –05:00 pm

Session Chairs: Prof. Prabu Raja & Dr. Saurabh Pratap **Location:** Seminar Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Structural integrity assessment of welded structures - a case study	Prof. Prabu Raja	03:30 – 04:00
387	Quantifying energy vs time mode variations obtained from ultrasonic metal welded busbar-to-busbar joints	Vijay Sharma	04:00 – 04:10
388	Numerical and Experimental Analysis of the Effect of Sheet Thickness Ratio on Clinching of AA6061-T6 Sheets	Priyabrata Nath	04:10 – 04:20
389	Optimisation of process parameters to fabricate tubular components of AA5083-O alloy using friction stir welding for crashworthiness applications	Debolina Sen	04:20 – 04:30
398	Influence of Selective Microwave Hybrid Heating Process Parameters on Mechanical Characteristics of Inconel 625/SS 304 Dissimilar Weldment	Devendra Laxman Kamble	04:30 – 04:40
406	A State-of-the-Art Review on Laser Welding of Polymers- Recent Progress, Limitations and Research Gap	Dr. Abhishek Sen	04:40 – 04:50
432	Activated Tungsten Inert Gas Welding Process: A Review	Manish Kumar Jindal	04:50 – 05:00

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Session A5: Additive Manufacturing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Neeraj Sinha & Prof. Rajnesh Tyagi **Location:** G4 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Fruit Waste Based Polymer Composites: Processing, Characterization and Applications	Dr. Hitesh Sharma	09:00 – 09:30
394	Effect of print direction on tribological behavior of DMLS manufactured Ti6Al4V alloy for knee implant application	Vipin Goyal	09:30 – 09:40
411	Investigation on Mechanical and Metallurgical Properties of CMT- WAAM of Copper Coated Mn-Si Alloy Steel	Ch R Vikram Kumar	09:40 – 09:50
105	Fabrication of porous Aluminum structures using Laser Powder Bed Fusion for electronic applications	Nobel Karmakar	09:50 – 10:00
422	Effect of build direction planes on microstructure, corrosion and wear of selective laser melted components	Tharra Bhavani	10:00 – 10:10
426	A Numerical Simulation of Ceramic Powder Particles Interaction with Laser Powder Feed Additive Manufacturing	Amit Kumar	10:10 – 10:20
428	Powder layer preparation by novel gravity-based powder spreading system for additive manufacturing	Aakash Tyagi	10:20 – 10:30
429	A novel 5 axis hybrid scissor-based machine tool for additive manufacturing	Kanak Jindal	10:30 – 10:40
443	Additive manufacturing of Stainless steel 316L by Fused deposition modeling	Sankata Tiwari	10:40 – 10:50
461	Surface topography of additively manufactured carbonfiber reinforced polymer composites	Anand Sankar M	10:50 – 11:00

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Session B5: Advances in Machining

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. C. Samuel & Dr. U. S. Rao **Location:** G5 Classroom

Paper ID	Paper Title	Presenting Author	Time
409	Experimental investigation of material removal mechanism and residual stress in grinding of HVOF sprayed conventional and nano-structured WC-Co coating	Puneet Nasna	09:00 – 09:10
414	Numerical Investigation of Laser Micromachining of Al-SiC Composite	Simson D	09:10 – 09:20
159	The evaluation of mechanical and magnetic properties of hot die steel after sustainable grinding using Barkhausen emission technique	Dr. Akash Subhash Awale	09:20 – 09:30
430	Simultaneous Electric Discharge and Electrochemical Polishing of Metal Additive Manufactured Components	Tejas Petkar	09:30 – 09:40
439	Investigation on the mixing behavior in microfluidic channels with varying cross sections	Deepak Singh D	09:40 – 09:50
448	Finite Element-Based Simulation of Thermal Stresses Developed during Micro-Electric Discharge Machining (μEDM) of AISI 1080 Stainless Steel	Rajiv Kumar	09:50 – 10:00
450	Quality evaluation of precision-shaped film cooling holes machined on aerospace nickel-based superalloy using femtosecond laser trepan drilling technique	Sunil Kumar	10:00 – 10:10
451	A Comparative Analysis of Finishing Performance of Abrasive Flow Machining (AFM) Variants	Nitin Dixit	10:10 – 10:20
237	Current maturity level assessment of Indian MSMEs on the Net Zero transition journey	Gaurav Upadhyay	10:20 – 10:30
331	Experimental Investigation on Abrasive Flow Machining of Spiral Bevel Gears	Dr Anand Petare	10:30 – 10:40
435	Fracture Modes During Quasi-Static and Shock Tube Impact Testing of Friction Stir Extrusion Joined Metallic Structures	Saurav	10:40 – 10:50

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Session C5: Digital Manufacturing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. P. Bharadwaj & Dr. P.C. Mani **Location:** G6 Classroom

Paper ID	Paper Title	Presenting Author	Time
224	EEG-based Color Classification for Industry 4.0 Applications	Mayukh Mondal	09:00 – 09:10
284	Integrating machine vision with machine learning for predicting surface quality of abrasive waterjet milled parts	Chinmoyee Datta	09:10 – 09:20
324	An IoT-embedded smart sustainable reverse logistics system towards the circular economy	Dr. Dhirendra Prajapati	09:20 – 09:30
329	Assembly Sequence Planning by a Modified Particle Swarm Optimisation Algorithm	Gobinda Chandra Behera	09:30 – 09:40
339	Stacked ensemble learning based bearing fault diagnosis	Subhendu Ghorai	09:40 – 09:50
342	Optimizing Machining Processes with Digital Twin Technology: A Review of Recent Developments	Rajat Jain	09:50 – 10:00
352	Remaining Useful Life Prediction using Physics-Based Approach and Machine Learning Techniques	Dr. Sudha Radhika	10:00 – 10:10
362	Development of tool wear monitoring system using data-driven approach	Sabareesh G Rajasekharan	10:10 – 10:20
431	Non-Invasive Digital Twin for Pedagogical Purposes in Digital Manufacturing	Dr. Prakruthi Hareesh	10:20 – 10:30
152	Investigation of Fabricating Stainless Steel 304L Thin Wall Structure using Laser Marking Assisted Wire Arc Additive Manufacturing Process	Krishnpal Singh Tomar	10:30 – 10:40
20	Topology Optimization and Modal Analysis of Engine Bracket Arm Using Additive Manufacturing	Saurabh Srivastava	10:40 – 10:50
175	Analysis of the Functional Effectiveness of Magnetorheological Polished Polymer Gears	Anant Kumar Singh	10:50 – 11:00

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Session D5: Modelling & Simulation in Manufacturing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. B Bhatacharya & Dr. Debasish Khan **Location:** G7 Classroom

Paper ID	Paper Title	Presenting Author	Time
104	Prediction of Thermophysical Behaviour of Laboratory-Developed SMAW Coatings of Electrode for Marine Applications	Sudish Mishra	09:00 – 09:10
418	Application of Design Thinking Attributes for Product Innovation in Manufacturing Sector: ISM based Framework	Dr. Sudeshna Roy	09:10 – 09:20
421	Novel Johnson-Cook Constitutive Model for Hot Tensile Response Prediction of AZ31B alloy	Aarjoo Jaimin	09:20 – 09:30
166	Metallurgical characterization of friction stir welded marine grade aluminum alloy: Experimental investigation and ALE FE approach	Rituraj Bhattacharjee	09:30 – 09:40
449	Multi-objective optimization-based design of high-speed machine tool spindle considering thermo-mechanical behavior	Anirban Tudu	09:40 – 09:50
452	Optimization of Die Design Parameters for Connecting Rod using FEM and Taguchi Methodology	Siddharth Yadav	09:50 – 10:00
434	Quantitative Phase Analysis and Image Processing Using MATLAB	Porika Abidsinghrajput	10:00 – 10:10
423	Application of Value Engineering Function Analysis on FDM 3D Printer Development	Prof. J. Ramkumar	10:10 – 10:20
295	Developed a Mathematical model for Sustainable Flow Shop Scheduling Problem	Suneet Singh	10:20 – 10:30
326	Simulation of Magnetic Field and Force with Varying Shapes of an Electromagnetic Forming Coil for the development of the Wheelchair Structure using FEA	Tushar Tiwari	10:30 – 10:40
424	Formability analysis of an automotive sheet metal component	Ravinder Kumar	10:40 – 10:50
26	Effect of SiC and B4C Addition on The Properties of Aluminium Metal Matrix Hybrid Composites	Mohammad Umair Zaki	10:50 – 11:00

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Session E5: Processing of Advanced Materials

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Geeta S. Lathkar & Prof. R Ganesh Narayanan **Location:** G2 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Mechanical joining of sheets & Joining by Forming	Prof. R Ganesh Narayanan	09:00 – 09:30
193	Mechanical Strength Analysis of Adhesive films for Microwave Metamaterial Absorbers	Prof. J. Ramkumar	09:30 – 09:40
52	Analysis of bending angle in laser forming of thin Al 6061-T6 sheets	Dr. Vinod Yadav	09:40 – 09:50
390	Laser Micromachining of PDMS-Water based Transparent Microwave Metamaterial Absorber	Prof. J. Ramkumar	09:50 – 10:00
377	Characterization of Poly (Methyl Methacrylate)/ Silver-Doped Hydroxyapatite Dip Coating on Ti6Al4V	Gagan Bansal	10:00 – 10:10
446	Investigation of Micromilling of Copper Oxide Nanostructured CFRP Composites	Abhipsa Kar	10:10 – 10:20
447	Direct Ink Writing of Medical Grade Silicon Nitride: A review of material, method, applications and challenges	Govind Kumar Verma	10:20 – 10:30
68	Analysis of temperature and microstructure evolution during laser line heating of Titanium metal sheets	Dr. Vinod Yadav	10:30 – 10:40
367	Effect of Carbon-Vacancy on Microwave Heating Characteristics of 3C-SiC	T L Dora	10:40 – 10:50
464	Experimental Investigation on Face Turning of IN-100 Superalloy under Environment-Friendly Vegetable Oils	D Saiteja	10:50 – 11:00

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December 08-10, 2023

Session F5: Modelling & Simulation in Manufacturing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Soumya Gangopadhyay & Dr. Harlal Singh Mali **Location:** G3 Classroom

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Smart Manufacturing: Research and Challenges	Dr. Govind Narayan Sahu	09:00 – 09:30
404	Finite element simulation of chip formation and experimental characterization during dry machining of Inconel 617	Soumya Gangopadhyay	09:30 – 09:40
178	Kinematic Simulation of 6-DOF CTEV (Clubfoot) Corrective Orthosis for its Automation Feasibilities during its Integrated Manufacturing	Dr Harlal Singh Mali	09:40 – 09:50
190	Influence of Welding Sequence on Residual Stresses and Distortions in AA6061-T6 Pipe-to-Plate Joints	Tapas Bajpai	09:50 – 10:00
192	Experimental evaluation, modelling and sensitivity analysis of temperature in bone milling using Elastic-net regression	Jaseem Sajidh N A	10:00 – 10:10
222	Optimization of the tuned mass damper cavity geometry and its location of the passive damped boring bar	Mariselvan P	10:10 – 10:20
225	Multi Objective Optimization of RMS configuration with hybrid approach of NSGA II and TOPSIS	Harshita Gupta	10:20 – 10:30
228	A numerical technique of analyzing temperature distribution in friction stir lap welding of Al-Mg-Si alloys under different process parameters	Ankan Das	10:30 – 10:40
240	Fracture Identification during Incremental Forming Process using Calibrated Damage Models with Optimized Sample Geometries	Abdul Samad	10:40 – 10:50
333	Controlled environment sintering of Si3N4-SiO2-BN system and calculations of density and porosity	Prosenjit Dutta	10:50 – 11:00

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December 08-10, 2023

Session G5: Modelling & Simulation in Manufacturing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Dr. Srihari Dodla & Dr. Anubav Sinha **Location:** Senate Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
462	Effects of lamellar thickness on the deformation behavior in Cu/Ag bicrystals - An Atomic Simulation Study	Dr. Srihari Dodla	09:00 – 09:10
253	Numerical Investigations of Cold Extrusion Parameters on AA 2024 alloy	K Anupama Francy	09:10 – 09:20
260	A method to control an in-situ temperature in micro end milling of Ti6Al-4V	Syed Naveed UlMeiraj	09:20 – 09:30
280	A Numerical Study on KrF Excimer Laser Ablation of Unidirectional CFRP Using Simplified Geometric Models with Two Separate Strategies	Joydeep Kundu	09:30 – 09:40
292	Finite-Element Simulation Study of Electrode Configurations on Weld Quality Parameters of Resistance Spot Welding of Aluminium-alloy/Steel Sheets	G Prashanth Kumar Reddy	09:40 – 09:50
347	Process modeling of additive friction stir deposition	Ram Rapaka	09:50 – 10:00
391	Extrusion of Non-Symmetric shapes: Simulation and Experiment	Pratik Kumar Singh	10:00 – 10:10
401	Thermal Error Compensation for CNC Turning Machine Using Regression Analysis.	Aslam Taj Pasha	10:10 – 10:20
126	Experimental and computational investigation of J-integral Al-7075	Vineet Kumar	10:20 – 10:30
408	Estimation of critical heat sources for high-speed motorized spindle using inverse optimization method	Amal Prasad	10:30 – 10:40
251	Finite Element Analysis to Predict Post Pelvic Stability Subjected With Triangular and Circular Pattern of Bone Harvesting in Bone Autograft Surgery	Syed Naveed UlMeiraj	10:40 – 10:50
296	Prediction of wettability characteristics of SMAW electrode coatings using neural network modelling for power plant welds	Vijay Kumar	10:50 – 11:00

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December 08-10, 2023

Session H5: Trends in Materials Processing

Date: 10.12.23 **Time**: 09:00 am – 11:00 am

Session Chairs: Prof. Partha Saha & Dr. Naveen Kumar **Location:** Seminar Hall (Swatantrata Bhawan)

Paper ID	Paper Title	Presenting Author	Time
Invited Talk	Erosion behavior of Nitrogen Containing Steels and bead-on-plate Welds	Dr. Naveen Kumar	09:00 – 09:20
262	Deformation behaviour of friction stir welded Cu-Cr-Zr-Ti alloy sheet during single point incremental forming	Dibya Ranjan Behera	09:20 – 09:30
303	Influence of Laser Texturing on Contact Separation and Sliding Mode Triboelectric Nanogenerator for Vibration Sensing	Diksha Jaurker	09:30 – 09:40
380	Development of Electroless Ni-B Coating with Enhanced Hardness using ANN-GA Methodology	Subhash Kumar	09:40 – 09:50
396	Evaluation of microstructural, mechanical, and tribological properties of laser-treated electroless Ni-B coatings	Vaibhav Nemane	09:50 – 10:00
420	Effect of addition of CNT in mitigating dissociation of B4C and in situ formation of TiC on Ti64 substrate during Laser Cladding process to achieve hard condensed coating	Prasenjit Patra	10:00 – 10:10
445	3D printing of Clay ceramics using Direct Ink Writing (DIW) technique	Pankaj Bothra	10:10 – 10:20
162	Development of micro-featured anti-wetting surfaces from Al-RGO dispersed polymer composite	Purnendu Das	10:20 – 10:30
399	Consequences of addition of nanoparticles on tribological behaviour of coconut oil grease	Tanmoy Medhi	10:30 – 10:40
463	Enhancing Surface-Mount Technology: DefectDetection and Inclusive Visual Monitoring	Raju Prasad Mahto	10:40 – 10:50
353	Process Monitoring and Numerical Analysis of Mechanism of Laser Forming in Open-Cell Aluminium Foam	Prof. Partha Saha	10:50 – 11:00