

5th Indian Conference on Applied Mechanics (INCAM 2022) Session _Paper Details

DAY-1

SOLID MECHANICS-1 (SESSION 1)

Session Chairs: Prof. C. Lakshmana Rao (IIT Madras) and Dr. Shashank Pandey (NIT JSR)

Date: 11th November 2022		Time: 3:00 - 4:15PM		Room No.: DJLHC 103
SI. No.	Paper ID	Title	First Author	
1	INCAM_2022_paper_5	Phase Field Modelling of Brittle Fracture: An Extension to Fracture Surface Topology	R.Paul	
2	INCAM_2022_paper_34	Higher Order Polygonal FEM in Elastic and Elasto-Plastic Analysis	Shalvi Singh	
3	INCAM_2022_paper_184	Improving Residual Life of Technological Structure by Structural Integrity	Debjyoti Dutta	
4	INCAM_2022_paper_157	Investigation on the Nonlinear Energy Transfer Rates for Spline Fitted Wave Spectra with Varied Peakedness	Vaishnavi S	
5	INCAM_2022_paper_25	Compressive Behaviour of Composite Solid Propellant	Rajeev Ranjan	

BIO MECHANICS / BIO MEDICAL ENGG (SESSION 1)

Session Chairs: Dr. S. RadhaKrishnan (IIT Madras)(Retd.) and Dr. Satish Kumar (NIT JSR)

Date: 11th November 2022		Time: 3:00 - 4:15 PM		Room No.: DJLHC 104
SI. No.	Paper ID	Title	First Author	
6	INCAM_2022_paper_9	Effect of Catheterization on Diagnosis of Swallowing Disorder in Human Oesophagus: Two-Layered Mathematical Model	Anupam Kumar Pandey	
7	INCAM_2022_paper_21	Influence of Vasospasm on the Hemodynamics of Intracranial Aneurysms	Chanikya Valeti	
8	INCAM_2022_paper_169	Automated Analysis of Structural Alterations in Microscopic Cellular Images for Identification of Cytotoxicity using Texture Feature Descriptors	Dikshitha Cm	
9	INCAM_2022_paper_46	Prediction of Human Thermoregulatory Mechanisms using a Computational Model	Shaik Gulzar Ahmed	
10	INCAM_2022_paper_175	Influence of the thread length of Cannulated Cancellous Screws (CCS) in Femoral Neck Fracture Fixation	Laureb Rao	
11	INCAM_2022_paper_176	Biomechanical investigation of Pedicle Screw Pullout Strength: A Finite Element Analysis	R. Bhattacharya	

THERMAL & HEAT TRANSFER (SESSION 1)

Session Chairs: Dr. Prasad Patnaik B. S. V (IIT Madras) and Prof. Sanjay (NIT JSR)

Date: 11th November 2022		Time: 3:00 - 4:15 PM		Room No.: DJLHC 105
SI. No.	Paper ID	Title	First Author	
12	INCAM_2022_paper_128	Double Diffusive Natural Convection With Soret And Dufour Effects	Abritti Guha	
13	INCAM_2022_paper_142	Thermal Runaway Analysis of Lithium-ion Battery due Cell-to-cell Heat Propagation	Zainab Momin	
14	INCAM_2022_paper_44	Alidation And Optimization Of Generalized Porous Media Property Relation For Their Use In Volumetric Solar Receiver	Madhukara.S1 , S. Rambabu	
15	INCAM_2022_paper_58	Natural Convection Heat Transfer in a Heat Sink– a review	Akhilesh Kumar	
16	INCAM_2022_paper_66	Thermal Analysis of Laminar Heat Transfer in Double Layer Micro-Channel Heat Sink with Different Cross section	Ravi Ranjan Singh	

COMPOSITE (SESSION 1)

Session Chairs: Dr. Ashutosh Mishra (MNNIT, Allahabad) and Dr. Vasanth Keshav (NIE, Mysore)

Date: 11th November 2022		Time: 3:00 - 4:15 PM		Room No.: DJLHC 106
SI. No.	Paper ID	Title	First Author	
17	INCAM_2022_paper_26	An Extended Finite Element Framework for Free Vibration Analysis of Laminated Composite Plates	Kishan Dwivedi	
18	INCAM_2022_paper_28	Linear Dynamic Analysis of Viscoelastic Laminated Composite Plates	Deepak Kumar	
19	INCAM_2022_paper_29	Elastic Damage-healing Model Coupling Secondary Damage Variable for Self-healing Materials	Harini Subramanian	

20	INCAM_2022_paper_30	Thermoelastic Homogenization of Asymmetric Corrugated Core Sandwich Structures	Nazim Khan
21	INCAM_2022_paper_31	Elasto-Plastic Damage-Healing Model Coupling Secondary Damage Variable for Diffusion-Based Healing in Materials	Harini Subramanian
SOLID MECHANICS (SESSION 2)			
Session Chairs: Prof. Puneet Mahajan (IIT Delhi), Mr. Arun Kumar Mishra (DRDO,Lucknow)			
Date: 11th November 2022		Time: 4:30 - 6:00PM	Room No.: DJLHC 103
SI. No.	Paper ID	Title	First Author
22	INCAM_2022_paper_33	Non-Rectangular Plates with Irregular Initial Imperfection Subjected to Non-Linear Static and Dynamic Loads	V. Keshav
23	INCAM_2022_paper_137	Sommerfeld Number Based Analysis Of Variation In Life Of Power Plant Bearings	Sandeep Singh
24	INCAM_2022_paper_152	Creep and Fatigue Interaction Study of Nickel-Based Superalloy Using unified Mechanics Theory	Saurabh Mangal
25	INCAM_2022_paper_183	Reverse Engineering and Redesigning of Large Size Open Gears for Raw material Handling System	Soumyajit Maiti
26	INCAM_2022_paper_96	Dynamic Characterization and Investigation of Effects of Anisotropic Properties in Willow Wood	Ashish Pandey
27	INCAM_2022_paper_37	Stress Intensity Factor of Brazilian Disc Rotating about Cracked Diameter	Swapnil Singh
BIO MECHANICS / BIO MEDICAL ENGG (SESSION 2)			
Session Chairs: Prof. S Radhakrishnan (IIT Madras)(Retd.) and Dr. Rituraj Singh (NIT JSR)			
Date: 11th November 2022		Time: 4:30 - 6:00PM	Room No.: DJLHC 109
SI. No.	Paper ID	Title	First Author
28	INCAM_2022_paper_47	Modelling of Thermoregulatory Mechanisms of Typical Indian Male and Female Subjects under Hot and Cold Stress	Chithramol M K
29	INCAM_2022_paper_62	Influence of Initial Architecture on the Resulting Optimal Structure of Bone	Aaditya C. Iyer
30	INCAM_2022_paper_63	Numerical Simulation of Flow Developed during Shirodhara Treatment	Rishabh
31	INCAM_2022_paper_72	Water Lifting Posture Study by Using Ergonomics and Biomechanical Assessment	Sagun Murmu
32	INCAM_2022_paper_22	Fluid Structure Interaction Study on a Patient Specific Intracranial Aneurysm	Chanikya Valeti
33	INCAM_2022_paper_168	Dynamic Indentation Based Estimation of Thenar Muscle Stiffness in Dominant and Non-Dominant Hands	Deepa S
34	INCAM_2022_paper_86	Electroencephalogram (EEG) analysis on alpha/beta and theta/beta ratios due to Shirodhara	Smit Bhoir
MATERIAL MODELLING (SESSION 2)			
Session Chairs: Prof Vikas Tomar (Purdue University) and Dr. Arvind Gali (NIT JSR)			
Date: 11th November 2022		Time: 4:30 - 6:00 PM	Room No.: DJLHC 105
SI. No.	Paper ID	Title	First Author
35	INCAM_2022_paper_76	Development of Micromechanics Based Constitutive Model for Ceramic Material Using Unified Mechanics Theory	Brahmadathan V B
36	INCAM_2022_paper_87	A Machine Learning Framework for Nonlinear Material Parameter Identification	B. Radhika
37	INCAM_2022_paper_90	Influence of Poling direction in Magnetoelctroelastic Material using XFEM	J. Jena
38	INCAM_2022_paper_119	Mechanical Characterization and Constitutive Modelling of Armour Grade Steel	Sangeeta Khare
39	INCAM_2022_paper_178	Numerical Modeling of Fracture Propagation in Orthotropic Composite Materials by an Adaptive Phase-Field Method	Ishank Jainí
40	INCAM_2022_paper_147	Simulation Strategy for Discontinuity Stress Estimation with Mismatch and Angular Profile Misalignment in Metallic Shells	Vinod Gopalan
41	INCAM_2022_paper_165	Material Point Method Modeling for Contact and Impact Problems	Saurabh Singh
COMPOSITE (SESSION 2)			
Session Chairs: Dr. Rajnesh Sharma (IIT Mandi) and Ms Juhi Kushwaha (DRDO, Hyderabad)			
Date: 11th November 2022		Time: 4:30 - 6:00 PM	Room No.: DJLHC 106

SI. No.	Paper ID	Title	First Author
42	INCAM_2022_paper_177	Effect of Porosity on the Free Vibration Analysis of a Rotating Pretwisted Sandwich Blade with a Functionally Graded Core in the Thermal Environment	Shashank Pandey
43	INCAM_2022_paper_75	Improvement Of Corrosion Property of a Steel Rebar using Nanocomposite: A Review	Rabindra Kumar
44	INCAM_2022_paper_83	Development of Shape memory alloy-based Inchworm for MEMS applications	Roshani Dinesh Pal
45	INCAM_2022_paper_179	Free Vibration Analysis of Porous Functionally Graded Material Sandwich Folded Plates	Shashank Pandey
46	INCAM_2022_paper_97	Effect of Shear Correction Factor on Free Vibration Analysis of Symmetric and Antisymmetric Sandwich Plates	Ankit Kumar
47	INCAM_2022_paper_159	High Strain Rate Modeling of CFRP Composite under Compressive Loading	Bipin Chaurasia

DAY-2**SOLID MECHANICS (SESSION 3)****Session Chairs: Dr. Aushutosh Upadhayay (MNNIT, Allahabad) and Dr. Shashank Pandey (NIT JSR)**

Date: 12th November 2022		Time: 9:15-10:45 AM	Room No.: DJLHC 103
SI. No.	Paper ID	Title	First Author
48	INCAM_2022_paper_49	Fast Simulations of Problems with Contact Nonlinearity using Hyper-reduction	Ganesh S. Pawar
49	INCAM_2022_paper_74	Buckling Analysis of a Simply Supported Beam Subjected to Thermal Loading Based on the Strain Gradient Theory	Boyina Kalyan
50	INCAM_2022_paper_92	A Numerical Investigation on Thermo-Mechanical Behavior of Geothermal Energy Pile in Dry Sand	Md Azhar
51	INCAM_2022_paper_153	Mechanics of Highly Cross-linked Polymer Network	Manjesh Singh
52	INCAM_2022_paper_108	Membrane Solutions for Metallic Toroidal Pressure Vessels	Mohan Krishna Paleti
53	INCAM_2022_paper_84	Parametric Study on Straight PSC Box Girder Bridges	Shubhi Ojha

DYNAMICS (SESSION 3)**Session Chairs: Dr. Souvik Chakraborty (IIT Delhi) and Dr. Shri A. Nagendranath (ASL, DRDO)**

Date: 12th November 2022		Time: 9:15-10:45 AM	Room No.: DJLHC 104
SI. No.	Paper ID	Title	First Author
54	INCAM_2022_paper_14	Dynamics of Thin-Walled Metamaterial Beam with Local Resonators	Sunny
55	INCAM_2022_paper_35	Numerical Investigation of Axial Flow Induced Vibration in a Fuel Rod Bundle	Nikhil Chitnavis
56	INCAM_2022_paper_42	Attenuation of the Vibration Amplitude of the Crew Seat Suspension System	Atanu Chowdhury
57	INCAM_2022_paper_181	Reliability Improvement of Girth Gears of Rotary Dryer 1 & 2 at Pellet Plant	Ankush Sharma
58	INCAM_2022_paper_185	Unplanned Outage Avoided by Vibration Time Waveform Analysis & High Frequency Enveloping at rolling Mill Drive Gearbox	Sudip Kumar Mukherjee
59	INCAM_2022_paper_127	Study on Response Characteristics of a Quadcopter for Propeller Configurations	Ashwin J C
60	INCAM_2022_paper_138	Dynamic Characteristic Analysis of Functionally Graded Beams	Chaithanya Krishna Rao

THERMAL & HEAT TRANSFER (SESSION 3)**Session Chairs: Prof. R. V. Sharma (NIT JSR) and Dr. Arvind Patel (NIT, JSR)**

Date: 12th November 2022		Time: 9:15-10:45 AM	Room No.: DJLHC 105
SI. No.	Paper ID	Title	First Author
61	INCAM_2022_paper_4	Mechanics of Heat Transfer Through Twisted Tape Fitted in Heat Exchanger Tube in Turbulent Regime	Rahul Raj
62	INCAM_2022_paper_48	An experimental Investigation on Thermal performance of MWCNT/water Nanofluid in a Flat Plate Solar Collector	Rishikesh Kumar
63	INCAM_2022_paper_117	Variation of Heat Flow Rate of Horizontally Arranged Plumbene Sheets with Number of Layers and Sample Size	Dhiman Kumar Das
64	INCAM_2022_paper_99	Numerical and Experimental Analysis of Different Parameters on Diesel Engine	Bhushan Subhash Shinde
65	INCAM_2022_paper_68	Transient Heat Transfer Analysis of Porous Nonhomogeneous Material Structure	Samarjeet Kumar
66	INCAM_2022_paper_182	A Study on Sinter Cooler Fan Operating Reliability at Sinter Plant 1, TSK	Aditya Jain

FLUID MECHANICS (SESSION 3)**Session Chairs: Prof. Abhijit Deshpandey (IIT Madras) and Dr. M. A. Hassan (NIT JSR)**

Date: 12th November 2022		Time: 9:15-10:45 AM	Room No.: DJLHC 106
SI. No.	Paper ID	Title	First Author

67	INCAM_2022_paper_10	Effect of Alignment Angle with Two Embolization Coils on Inflow Velocity of a Aneurysm Model	Nisanth Kumar P
68	INCAM_2022_paper_16	Resulting Deposition Patterns in Various Sessile Droplets Undergoing Evaporation	Shivani Chauhan
69	INCAM_2022_paper_7	Capillary Penetration of Highly Volatile Liquids in a Paper Strip: An Experimental Study on Wicking, Evaporation, and Condensation	Rampally Srirama Chandra Murthy
70	INCAM_2022_paper_8	Predictive ANN modelling of Thermorheological Properties of Iron-Oxide Yield Stress Nanofluid	Suraj Narayan Dhar
71	INCAM_2022_paper_13	Validation of Local Thermal Equilibrium (LTE) in Porous Media for Variation in Flow rate and Permeability: Transient Analysis	Gudekota Rudresh
BIO MECHANICS / BIO MEDICAL ENGG(SESSION 4)			
Session Chairs: Dr. Madhusudan Pal (DRDO) and Dr. Dulari Hansdah (NIT JSR)			
Date: 12th November 2022		Time: 11:00 - 12:00 PM	Room No.: DJLHC 103
SI. No.	Paper ID	Title	First Author
72	INCAM_2022_paper_173	Analysis of Dynamic Contractions of Biceps Brachii Muscle using Dispersion Entropy Measures of Surface Electromyography Signals	Sowmya S
73	INCAM_2022_paper_186	Condition Monitoring of Equipment Health by Analytical Approach	Ajit Kumar Verma
74	INCAM_2022_paper_124	Effect of Different Biomaterials on Maximum Contact Stress in Total Hip Arthroplasty	Aviral Mishra
75	INCAM_2022_paper_161	Comparison of Complexity Analysis techniques on surface Electromyography Signals	Divya Sasidharan
76	INCAM_2022_paper_172	An Intelligent Approach to Analyze Fluid Biomarkers in the Identification of Diabetic Conditions	Priyanka Jadhav
77	INCAM_2022_paper_41	Prediction of Cortical Bone Adaptation using Micro-finite Element Model	Ratnesh Ranjan Srivastava
MATERIAL MODELLING (SESSION 4)			
Session Chairs: Dr. Ajitendra Singh Parihar (DRDO Lucknow) and Dr. Bharat Bhusan Jha (NIT JSR)			
Date: 12th November 2022		Time: 11:00 - 12:00 PM	Room No.: DJLHC 109
SI. No.	Paper ID	Title	First Author
78	INCAM_2022_paper_122	Study of Cubical and Spherical Representative Volume Elements in Terms of Optimization, Convergence, and Texture Evolution	Srihari Dodla
79	INCAM_2022_paper_125	Simulation Study on Material Gradation of Functionally Graded Beams	Chaithanya Krishna Rao
80	INCAM_2022_paper_126	Systematic Procedure for Selection of Candidate Materials for Microspines	Aditya Mehta
81	INCAM_2022_paper_156	Development of 13-5K T 82 BOP with Shear & Seal Functionality	Swathika Meenraj
DYNAMICS (SESSION 4)			
Session Chairs :Dr. Manjesh Kumar Singh (IIT Kanpur) and Dr. Shankar Kumar Ray (NIT JSR)			
Date: 12th November 2022		Time: 11:00 - 12:00 PM	Room No.: DJLHC 105
SI. No.	Paper ID	Title	First Author
82	INCAM_2022_paper_150	Force Vibration Response of 3D Braided Spherical Shell using 3D Finite Element Methods	Pabitra Majhi
83	INCAM_2022_paper_174	Response of a Stretched String Subjected to a Moving Mass	Kush Kumar
84	INCAM_2022_paper_23	Analysis And Control Of Systems With Friction	Sree Kuttan S
85	INCAM_2022_paper_32	New Approach For Dynamic Analysis of Ultra Thin Membrane Structures using Finite Element Approach For Special Condition	ANMOL YADAV
COMPOSITE (SESSION 4)			
Session Chairs: Prof. B.N Singh (IIT KGP) and Dr. Vishesh Ranjan Kar (NIT JSR)			
Date: 12th November 2022		Time: 11:00 - 12:00 PM	Room No.: DJLHC 106
SI. No.	Paper ID	Title	First Author
86	INCAM_2022_paper_100	Experimental Analysis of Aluminum PMEDM of Nimonic C-263	Prasan Ralph Dewan
87	INCAM_2022_paper_101	Effect of titanium powder mixed dielectric during EDM of Nimonic C-263	Prasan Ralph Dewan

88	INCAM_2022_paper_103	Cyclic Loading on Composite Repair of Damaged Pipelines	Vishwas Chandra K
89	INCAM_2022_paper_115	3D Morphological Study of the Rock-mortar Specimen	Ganesh Jaiswal

MANUFACTURING (SESSION 5)			
Session Chairs: Dr. Chandraprakash Chindam(IIT Kanpur) and Dr. Vijay Kumar Dalla (NIT JSR)			
Date: 12th November 2022		Time: 3:00 - 4:45 PM	
Room No.: DJLHC 103			
SI. No.	Paper ID	Title	First Author
90	INCAM_2022_paper_193	Prediction of surface roughness in wire arc additive manufactured components using machine learning	Dr. Kuntal Maji
91	INCAM_2022_paper_55	Additive Manufacturing of Magnesium Alloys for Biomedical Applications	Abdul Rahman
92	INCAM_2022_paper_56	Analysis of Copper Reinforcement Effect on Epoxy Based Shape Memory Polymer for Smart Actuators	Akanksha Singh
93	INCAM_2022_paper_60	Effect Of Heat Treatment on the Time Dependent Behavior Of 3D Printed SS-316L Specimen	Priyanshu Gupta
94	INCAM_2022_paper_89	Microstructure and Mechanical Properties Evaluation of Magnesium Alloy using the Stir Casting Technique	Abdul Rahman
95	INCAM_2022_paper_139	Additively Manufactured Metallic Heat Exchangers: A preliminary study	Usha Y.
96	INCAM_2022_paper_195	Structural and Mechanical Properties of Electroless Ni-P Coating on Metallic Gardening Tools	Tushar Banerjee
97	INCAM_2022_paper_78	On the fabrication and analysis of microscale metallic phononic crystals using wire electrochemical micromachining	Vyom Sharma
IMPACT (SESSION 5)			
Session Chairs: Dr. BHVS Narayanamurthy (RCI DRDO) and Dr. Tushar Banerjee (NIT JSR)			
Date: 12th November 2022		Time: 3:00 - 4:45 PM	
Room No.: DJLHC 104			
SI. No.	Paper ID	Title	First Author
98	INCAM_2022_paper_20	Modeling of Indentation on Wooden Surface in Drop Tower Impact	Sanketh Tonannavar
99	INCAM_2022_paper_11	Numerical Simulation of Drop Test of Hybrid Composite Panel to Analyze the Effect of Confinement on Crack Formation	Arun Kumar Mishra
100	INCAM_2022_paper_109	Numerical Simulation Approach for Low-Velocity Impacts of Bioinspired Glass/Epoxy Laminates Sandwiched with Elastic Sheets	Shreya Rai
101	INCAM_2022_paper_123	Avian Impact Analysis On Wind Turbine Blade	Prithviraj Naik
102	INCAM_2022_paper_141	Studying the interaction of waves to determine the impact response of a layered elastic medium	Satyendra Pratap Singh
DYNAMICS (SESSION 5)			
Session Chairs: Prof. Shakti Singh Gupta (IIT Kanpur) and Dr. Subhodip Metya (NIT JSR)			
Date: 12th November 2022		Time: 3:00 - 4:45 PM	
Room No.: DJLHC 105			
SI. No.	Paper ID	Title	First Author
103	INCAM_2022_paper_43	Characterization of Sommerfeld Effect of a 4-Pole Legs Active Magnetic Bearing Rotor Motor System	Prabina Kumar Meher
104	INCAM_2022_paper_59	Near-Exact Euler Maruyama for Solving Nonlinear Systems in Stochastic Dynamics	Tapas Tripura
105	INCAM_2022_paper_61	Active Subspace Assisted Dimensionality Reduction for High Dimensional Reliability Analysis Problems	Navaneeth
106	INCAM_2022_paper_191	Analysis of Load Distribution and Deformation of Flexible Race Bearing	Apoorva verma
107	INCAM_2022_paper_98	Model Interaction in a String Travelling Axially over Finite Curved Boundary	Tahseen Alam
108	INCAM_2022_paper_187	Failure Analysis of Tapered Spherical Roller Bearing of a Conveyor System	Dr. Anand Prabhakaran
109	INCAM_2022_paper_196	Root cause failure analysis of Pulley bearing in Blast furnace main charging conveyor of I Blast Furnace.	Susovan Das

110	INCAM_2022_paper_116	Viscoelastic Analysis of Solid Propellant Grain using Mixed Element Formulation	Praveen Kumar P
MATERIAL MODELLING (SESSION 5)			
Session Chairs: Dr. P. Venkatraman (IIT Tirupati) and Dr. Sangeeta Khare (IIT Delhi)			
Date: 12th November 2022		Time: 3:00 - 4:45 PM	Room No.: DJLHC 106
Sl. No.	Paper ID	Title	First Author
111	INCAM_2022_paper_144	A unified mechanics theory based model for creep in metal alloys	Kambhammettu Sri Krishna Sudhamsu
112	INCAM_2022_paper_12	A Crystal Plasticity Model for Dynamic Strain Aging in Lamellar Transformed B Colony of Titanium Alloys	S. Mustafa Kazim
113	INCAM_2022_paper_15	Characterization and Modeling of Particulate Composite with Flaky Aluminium Additives	Chethana P Rao
114	INCAM_2022_paper_17	Long Exposure Steam Oxidation Studies on 304hcu and IN617 for Ultra-Supercritical Conditions	Rishikesh Karthikeyan
115	INCAM_2022_paper_148	Axisymmetric Robotic Hot Blade Cutting through Optimal Shape Control	Jay Prajapati
116	INCAM_2022_paper_6	High Strain Rate Response of Ceramic Cellular Structures	Arun Kumar Mishra

DAY-3**DYNAMICS (SESSION 6)****Session Chairs: Dr. Prasun Jana(IIT KGP) and Dr. Shankar Kumar Ray(NIT JSR)**

Date: 13th November 2022		Time: 9:30 - 10:45 AM	Room No.: DJLHC 103
SI. No.	Paper ID	Title	First Author
117	INCAM_2022_paper_120	Seismic Structural Health Monitoring of Industrial Structure: A Study	G Rahul Raj
118	INCAM_2022_paper_121	Cost Effective Earthquake Resistant Design of Industrial Structure: A Study	Akshay Kumar
119	INCAM_2022_paper_52	Free Vibration Analysis of Pre-Twisted Rotating CNT-SiC/SiC Blade	Souvik S. Rathore
120	INCAM_2022_paper_65	Gray Box Model in Nonlinear Dynamics	Shailesh Garg
121	INCAM_2022_paper_190	Design of Gear Profile using Synthetic Curves	Sakshi sinha
122	INCAM_2022_paper_140	Modelling of Antenna Control Servo System using Simscape	Yellapu Veera Venkata Bhoga Sai
123	INCAM_2022_paper_64	Optimal Orientation Transfer of a Rigid Body	Fuadul Fairusy T S

MATERIAL MODELLING (SESSION 6)**Session Chairs: Dr. P. Praveen Kumar (ASL, DRDO) and Dr. Arvind Gali (NIT JSR)**

Date: 13th November 2022		Time: 9:30 - 10:45 AM	Room No.: DJLHC 104
SI. No.	Paper ID	Title	First Author
124	INCAM_2022_paper_145	Simulation Based Design Model for Submarines Incorporating Material Properties	Rishabh Jambhulkar
125	INCAM_2022_paper_146	A Topological Optimization Model for Submarine's Structural Design	S. S. Kanha
126	INCAM_2022_paper_151	Atomistic Investigation of Mechanical Properties of Fe-Cr-Ni Alloy using Molecular Dynamics Simulation Methodology	Arun Kumar, Roshan Kuma
127	INCAM_2022_paper_160	Enhancing the Mechanical Properties and Composition of Steel Alloys using Neural Network	Tathagata Gautham
128	INCAM_2022_paper_50	Analysis of Diffusion of Synthetic Wound Antimicrobials from PVA Hydrogel using Free Volume Theory	Pooja Vardhini Natesan

FRACTURE (SESSION 6)**Session Chairs: Dr. BHVS Narayanamurthy (RCI DRDO) and Dr. Bipin Kumar (NIT JSR)**

Date: 13th November 2022		Time: 9:30 - 10:45 AM	Room No.: DJLHC 105
SI. No.	Paper ID	Title	First Author
129	INCAM_2022_paper_91	Enhancing Full-field Crack Growth Solution by Employing Virtual Speckling Method using Digital Image Correlation	Vipin Chandra
130	INCAM_2022_paper_105	Localized Stress Field Near Crack-Tip in Mode II Loading for Anisotropic Crystal	Ashish Singh
131	INCAM_2022_paper_88	Numerical Modeling of Fracture Propagation in Layered Materials using an Adaptive Phase-Field Method	Chandrasekhar Annavarapu
132	INCAM_2022_paper_106	A Hybrid Approach for Determination of Fracture Toughness of Quasi-Brittle Natural Composites	Gaurav Singh
133	INCAM_2022_paper_167	Molecular Dynamics Approach to Study Mechanical and Fracture Behavior of Graphene and Graphene Oxide	Rahul kumar
134	INCAM_2022_paper_54	Multi-axial quasistatic loading of DP780 for fracture material modeling	Pundan K Singh

THERMAL & HEAT TRANSFER (SESSION 6)**Session Chairs: Prof. M. K. Sinha (NIT JSR) and Dr. Rituraj Singh (NIT JSR)**

Date: 13th November 2022		Time: 9:30 - 10:45 AM	Room No.: DJLHC 106
SI. No.	Paper ID	Title	First Author
135	INCAM_2022_paper_114	Analysing the Thermal Behaviour of Fuel Cells at Different Ambient Condition	Akansha Pandey
136	INCAM_2022_paper_93	Prediction of Power loss and Efficiency of Lathe speed Gear box using Thermal Network Application	Ankit Kumar

137	INCAM_2022_paper_180	Carbonization of Hydraulic Oil	Manoj Kumar
138	INCAM_2022_paper_188	Effect of Operating Parameters on Performance of TEG used in VCR Diesel Engine	Rakesh Kumar Rajak
139	INCAM_2022_paper_189	Numerical Investigation of Cooling of Mini-Channel Heat Sink using Al ₂ O ₃ with Water and Ethylene Glycol	Arvind Kumar Patel
140	INCAM_2022_paper_164	Estimation of Heat Flux in Infrared Heating of Composite Panel using Inverse Heat Conduction	Juhi Kushwaha

COMPOSITE (SESSION 7)

Session Chairs: Dr. Ashutosh Mishra (MNNIT, Allahabad) and Dr. Vishesh Ranjan Kar (NIT JSR)

Date: 13th November 2022		Time: 11:30 - 1:30 PM		Room No.: DJLHC 109
SI. No.	Paper ID	Title	First Author	
141	INCAM_2022_paper_38	Design and Development of Flexible Elastomer for Energy Storage	Swaroop Kumar Mandal	
142	INCAM_2022_paper_131	Studies on Structural and Optical Properties of Iron Oxide-Based Materials for its Application in Hydroelectric Cell as Green Energy	Vivek Kumar	
143	INCAM_2022_paper_132	Effect of Fiber Volume Fraction on the Mechanical Properties of NFRP Composites	P. Siva Sankar	
144	INCAM_2022_paper_133	Stability Analysis of Laminated Composite Sandwich Plates with Magnetorheological Elastomer Core under Aerodynamic Forces in Hygrothermal Environment	Naresh	
145	INCAM_2022_paper_134	Size-dependent Nonlinear Vibration Analysis of Electrostatically Excited Bi-directional Functionally Graded Microbeam Mass Sensor	Uttam Kumar Kar	
146	INCAM_2022_paper_158	Investigation of the Failure Load in Riveted Lap Joints Made of Aluminum Alloys	Bipin Chaurasia	
147	INCAM_2022_paper_118	Analysis of the Wind Turbine Blade Scarf Repair using Thermal and UV Curing	Ayush Varshney	
148	INCAM_2022_paper_149	Delamination behavior of composite conical shell under axial compression	Nagendranath Atreyapurapu	

Applied Mechanics (SESSION 7)

Session Chairs: Prof. Shakti Singh Gupta (IIT Kanpur) and Dr. Kuntal Maji (NIT JSR)

Date: 13th November 2022		Time: 11:30 - 1:30 PM		Room No.: DJLHC 104
SI. No.	Paper ID	Title	First Author	
149	INCAM_2022_paper_39	Investigation of Mechanical Behaviour of Additive Manufactured Poly(lactic Acid) (PLA) Material	Mumtaz Rizwee, Yashpal Singh	
150	INCAM_2022_paper_129	Calibration of Impact Penetration Model for Bi-layer Ceramic-Metal Armour	Vijayabaskar Narayanamurthy	
151	INCAM_2022_paper_135	Design and Analysis of Solid Rocket Motor Casing	P Mahadevan	
152	INCAM_2022_paper_27	Post-CHF Heat Transfer Characteristics in a Fuel Rod Sub-assembly with Spacers	Shivam Singh	
153	INCAM_2022_paper_23	Analysis And Control Of Systems With Friction	Sree Kuttan S	
154	INCAM_2022_paper_104	Numerical Studies on Cylindrical Shell Buckling Response using Measured Geometric Imperfections	Vineeth Ravulapalli	
155	INCAM_2022_paper_143	Design and Analysis of Rocket Motor Nozzle	Srijit Paul	
156	INCAM_2022_paper_166	Numerical investigation of leakage in elastomeric O-rings	Ambrish Biredar	