





2nd International Conference

on



Futuristic Advancements in Materials, Manufacturing and Thermal Sciences (ICFAMMT-24)

Organized by IITRAM, Ahmedabad and SSME, (SAC-ISRO), Ahmedabad January 19-21, 2024



Sponsoring Partners





OFFLINE PRESENTATION

SESSION 1

MATERIALS & COMPOSITES

Venue: L105

03:00-04:45 PM

Session Chair: Dr. Rajiv Sharma & Dr. Ajit Kumar parwani

SI. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	DR. RAJIV SHARMA	INVITED TALK	03:00-03:20 PM
2	NIRAV KUMAR D PATEL	ACTIVATION ENERGY OF DEHYDRATION OF MALTOSE AND LACTOSE MONOHYDRATE BY CONVENTIONAL DSC	03:20-03:30 PM
3	DEEPAK KUMAR NAIK	INFLUENCE OF LASER SURFACE TEXTURING ON TRIBOLOGICAL PERFORMANCE OF AISI 52100 IN DRY AND LUBRICATED SLIDING CONDITIONS	03:30-03:40 PM
4	RANAJIT PAL	NON-ISOTHERMAL CURE KINETICS AND THERMODYNAMICS OF EPOXY FILM ADHESIVE DERIVED FROM OXAZOLIDONE MODIFIED EPOXY NOVOLAC RESIN	03:40-03:50 PM
5	DR. SANGITA GAJANAN DAHOTRE	COMPARATIVE STUDY OF FE3O4 AND CALCIUM DOPED FE3O4	03:50-04:00 PM
6	LIKKI SHIVA SAI THARUN KUMAR & SHEETAL PRAJAPATI	PHYSICAL, MECHANICAL AND MICROSTRUCTURAL CHARACTERISTICS OF MAGNESIUM ALLOY AZ91 FABRICATED BY FRICTION STIR CASTING PROCESS: REVIEW	04:00-04:10 PM
7	ROHAN SAWANT	METHANOL-BASED THERMOSIPHON SYSTEMS: AN EXPERIMENTAL AND NUMERICAL STUDY OF TWO-PHASE BEHAVIOR	04:10-04:20 PM
8	NEETU KUMAR	HETEROSTRUCTURED 2D MOO3 NANO-FLAKES UTILIZING FOR EXCEPTIONAL STEALTH MATERIAL IN TODAY'S HIGH-FREQUENCY ENVIRONMENTS	04:20-4:30 PM

THERMAL & FLUID

Venue: L205

03:00-04:45 PM

Session Chair: Dr. Arvind Rajput & Dr. Dileep Gupta

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	DR. ARVIND RAJPUT	INVITED TALK	03:00-03:20 PM
2	SUDIPTO SARKAR	PASSIVE CONTROL OF CYLINDER WAKE BY A DOWNSTREAM SPLITTER PLATE PLACED BEHIND CRITICAL GAP RATIO	03:20-03:30 PM
3	KIRAN S K	SELECTION OF COOLING METHOD FOR 3 KW SSPA AND NUMERICAL STUDY WITH DIFFERENT MESH LEVELS	03:30-03:40 PM
4	BIKASH KUMAR	EFFECT OF ROOM TEMPERATURE ON THERMAL PERFORMANCE OF PCM BASED HEAT SINK COUPLED WITH HEAT PIPE	03:40-03:50 PM
5	ASWATHY VINU NAIR	A COMPARATIVE STUDY OF VARIOUS DIFFUSER CONFIGURATIONS ON AN AHMED BODY FOR IMPROVED AERODYNAMIC PERFORMANCE USING CFD	03:50-04:00 PM
6	GIRIJA PONSRRI T	FLOW CHARACTERISTICS EVALUATION ON NACA 23012 AT VARYING ANGLE OF ATTACK USING CFD	04:00-04:10 PM
7	ROHI BINDAL	FLOW CHARACTERISTICS STUDY ON AEROSPIKE NOZZLE FOR VARYING LENGTHS USING CFD METHOD	04:10-04:20 PM
8	ALOK RAJ	EFFECT OF JET ANGLE ON THERMO HYDRAULIC PERFORMANCE OF A MOVING STEEL STRIP WITH 78 CIRCULAR NOZZLE JET IMPINGEMENT	04:20-4:30 PM
9	DR. PAWAN KUMAR SINGH	TRANSIENT THICKNESS PROFILE MEASUREMENT OF THE EXTENDED THIN FILM MENISCUS USING REFLECTOMETRY	04:30-04:40 PM
10	ADITYA SINGH	COMPUTATIONAL STUDY ON HEAT TRANSFER AND FLUID FLOW ASPECTS OF ADSORPTION-BASED CO2 CAPTURE	04:40-04:50 PM
11	ANUPAM CHAUDHARY	PERFORMANCE ANALYSIS OF A HELICAL REACTOR CONFIGURATION FOR ADSORBED NATURAL GAS STORAGE	04:50-05:00 PM

MANUFACTURING

Venue: L305

03:00-04:45 PM

Session Chair: Dr. Kuldeep Saxena & Dr. PL Ram Kumar

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1.	DR. KULDEEP SAXENA	INVITED TALK	03:00-03:20 PM
2	SHASHIKANT JAGMITRA JOSHI	DESIGN AND DEVELOPMENT OF WELDING FIXTURE ON RELEASE WELDING MACHINE	03:20-03:30 PM
3	DR. DIN BANDHU	MACHINING PERFORMANCE OPTIMIZATION OF GRAPHENE CARBON FIBER HYBRID COMPOSITE USING TOPSIS-TAGUCHI APPROACH	03:30-03:40 PM
4	MADHAVI B. ACHARYA	APPLICATION OF ULTRASONIC WELDING OF DISSIMILAR METALS: REVIEW	03:40-03:50 PM
5	MIHIR SHRIMALI	INNOVATIVE APPROACHES TO PREDICT TOOL WEAR IN BALL END MILLING OF TI6AL4V ALLOY THROUGH ARTIFICIAL NEURAL NETWORKS	03:50-04:00 PM
6	DARSH KACHROO	DATA-DRIVEN EVALUATION OF PREDICTIVE MODELS FOR ESTIMATION OF SPRINGBACK IN BACKWARD METAL FLOW FORMING PROCESS	04:00-04:10 PM
7	PRIYANSHU MANGHNANI	EXPLORING THE SYNERGIES OF ADDITIVE AND SUBTRACTIVE MANUFACTURING PROCESSES: A SYSTEMATIC REVIEW OF HYBRID MANUFACTURING	04:10-04:20 PM
8	KULKARNI RAHUL RAMESH	PROGRESS IN NON-FERROUS ALLOY BEHAVIOR IN FORGING TECHNOLOGY	04:20-4:30 PM
9	VRUSHTI SHAH	EFFECT OF PROCESS PARAMETERS ON SURFACE ROUGHNESS OF SQUARE FLANGE FORMED BY SINGLE POINT INCREMENTAL FORMING	04:30-04:40 PM
10	KISHOR KUMAR GAJRANI	TURNING TOOL WEAR MONITORING USING DIGITAL IMAGE PROCESSING	04:40-04:50 PM
11	HARSH VARA	EXPERIMENTAL INVESTIGATION OF MACHINING CHARACTERISTIC IN TURNING OF EN8 STEEL	04:50-05:00 PM

DESIGN & AUTOMATION

Venue: L405

03:00-04:45 PM

Session Chair: Dr. Vimal Pathak & Dr. Saurabh Kumar Yadav

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	SV NARENDAR	DESIGN AND ANALYSIS OF A TUNABLE MONO-TUBE SHOCK ABSORBER PISTON	03:00-03:10 PM
2	DHAVAL B. SHAH	DESIGN AND DEVELOPMENT OF ENDURANCE TEST UNIT FOR THE DESIGN MODIFICATION OF ROM FOR THE SAFETY ENHANCEMENT OF MCCB	03:10-03:20 PM
3	MIT SHAH	FAULT DIAGNOSIS IN A CENTRIFUGAL PUMP USING MODWPT AND SVMA	03:20-03:30 PM
4	DURGESHWAR MAJHI	FINITE ELEMENT ANALYSIS OF A CABLE-DRIVEN ROBOTIC HAND EXOSKELETON	03:30-03:40 PM
5	VIBHU SHARMA	GEOMETRICAL ASPECTS OF SNOW SINKAGE FOR ROBOTIC APPLICATION	03:40-03:50 PM
6	MUTAGEKAR RISHI RAJESH	DESIGN AND ANALYSIS OF ROTARY SLAG SKIMMER MACHINE	03:50-04:00 PM
7	ADARSH KUMAR PANDEY	EFFECT OF ACTIVATED FLUX ON THE PERFORMANCE OF TIG WELDING PROCESS: AN EXPERIMENTAL STUDY	04:00-04:10 PM
8	SHAILESH KUMAR	MODELLING AND FE TECHNIQUES FOR DESIGN OF RELIABLE MECHANICAL ENCLOSURE FOR SPACE BORNE ELECTRONIC HARDWARE	04:10-04:20 PM

MATERIALS & COMPOSITES

Venue: L105

03:15-05:15 PM

Session Chair: Dr. Dheeraj Kumar Singh & Dr. Jagat Rath

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	DR. DHEERAJ KUMAR SINGH	INVITED TALK	3:15-3:35 PM
2	GIRISH CHANDRA GANDHI	A REVIEW ON APPLICATION OF NANOMATERIALS IN TRANSPORTATION ENGINEERING	03:35-03:45 PM
3	DR. HIRAL PARIKH	SOUND ABSORPTION PERFORMANCE OF 3D PRINTED PLA/WOOD COMPOSITES	03:45-03:55 PM
4	NEETU CHAUDHARY	MECHANICAL PROPERTIES OF H-BNNS REINFORCED AL- NANOCOMPOSITE: AN EXPERIMENTAL APPROACH	03:55-04:05 PM
5	SHRUTI KULKARNI	INVESTIGATION OF CFRP AS A MATERIAL FOR FABRICATION OF 1U CUBESAT STRUCTURE FOR REDUCTION OF WEIGHT WITH IMPROVED STRENGTH	04:05-04:15 PM
6	ISHAN MISHRA	SUSPENDED PARTICULATE MATTER REMOVAL FOR WATER RECOVERY AND REUSE: NUMERICAL SIMULATION AND EXPERIMENTAL INVESTIGATION IN SOLID-LIQUID SEPARATION	04:15-04:25 PM
7	RENU SAHU	A STUDY ON SURFACE TREATMENT METHODS OF METAL SURFACE FOR METAL FIBER LAMINATES	004:25-04:35 PM
8	NEETU CHAUDHARY	AN INVESTIGATION ON THE PROPERTIES OF GRAPHENE/H-BNNS REINFORCED POLYURETHANE NANOCOMPOSITES	004:35-04:45 PM

MANUFACTURING

Venue: L305

03:15-05:15 PM

Session Chair: Dr. Kishor Gajrani & Sri Ashish Soni

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	JAY SHAH	A REVIEW ON THE IMPACT OF EMERGING INDUSTRY 4.0 TECHNOLOGIES ON SUPPLY CHAIN MANAGEMENT: ADVANTAGES, CHALLENGES, AND FUTURE RESEARCH DIRECTIONS	03:15-03:25 PM
2	DR. RICHA PANDEY	DESIGN AND DEVELOPMENT OF A SHREDDER MACHINE FOR EFFICIENT RECYCLING OF WASTE PLASTIC IN INDIA	03:25-03:35 PM
3	VIRENDRA TELI	DESIGN AND OPTIMIZATION OF CUTTING FLUTES OF DENTAL IMPLANT TO IMPROVE STRESS PATTERN AT THE BONE INTERFACE	03:35-03:45 PM
4	DR. SAURAV SUMAN	COMPARATIVE STUDY OF CONVENTIONAL AND MULTI-TEXTURED CUTTING TOOLS FOR MACHINABILITY OF INCONEL- 718	03:45-03:55 PM
5	ASHISH KUMAR MISHRA	DEGRADATION OF MECHANICAL PROPERTIES OF 3D PRINTED POLYMERS UNDER MARINE AND LAND ENVIRONMENT	03:55-04:05 PM
6	RUSHIL SHAH	THE OPTIMIZATION OF 3D PRINTING PROCESS PARAMETERS AND THEIR INFLUENCE ON PART CHARACTERISTIC	04:05-04:15 PM
7	JIGAR PATADIYA	WASTE KEVLAR REINFORCED 3D PRINTED BIONIC ARCHITECTURES WITH ROBUST LASER ABLATION AND MECHANICAL PROPERTIES	04:15-04:25 PM
8	SHAKUNTAL KHAMAR	ADVANCES IN MICRO-MILLING: A CRITICAL REVIEW.	04:25-04:35 PM
9	UTTAKANTHA DIXIT	COMPARATIVE EXPERIMENTAL INVESTIGATION ON THE EFFECT OF DRY TURNING OF SS 304 AND TI6AL4V ON TOOL WEAR	04:35-04:45 PM
10	DR. SAURABH DEWANGAN	OPTIMIZATION OF INPUT PARAMETERS USED FOR MACHINING HEAT- TREATED 0.2%-C STEEL UNDER THE EDM METHOD	04:45-04:55 PM
11	UMA RAI	STATISTICAL ANALYSIS OF MACHINING CHARACTERISTICS OF WIRE EDM TI-6AL-4V	04:55-05:05 PM
12	SHAH PRERNABEN PRAVINCHANDRA	A BIBLIOMETRIC REVIEW OF WIRE ARC ADDITIVE MANUFACTURING	05:05-05:15 PM

THERMAL & FLUID

Venue: L205

03:15-05:15 PM

Session Chair: Mr. Sandip R Somani & Dr. Gautam Choubey

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	DR. NINGEGOWDA B M	NUMERICAL MODELLING OF BUBBLE DYNAMICS USING INTERFACE CAPTURING METHOD	3:15-3:35 PM
2	BHAVYA KOTAK	RISK ASSESSMENT IN THERMAL POWER PLANTS – A REVIEW	03:35-03:45 PM
3	KRUTARTH DALAL	THREE DIMENSIONAL CFD ANALYSIS OF TWO-STRUT BASED SCRAMJET COMBUSTOR	03:45-03:55 PM
4	VEERENDRA BEERAKA	ROLE OF DUAL CAVITY ON THE COMBUSTION PERFORMANCE OF A SPLITTER PLATE-BASED SUPERSONIC COMBUSTOR	03:55-04:05 PM
5	DR. MANMOHAN PANDEY	NUMERICAL INVESTIGATION OF EFFECT OF POROUS MICROFINS IN THERMAL AND FLUID FLOW BEHAVIOR IN MINIATURE CHANNELS	04:05-04:15 PM
6	AARYAN SHAH	STRUCTURAL AND THERMAL EVALUATION OF ELECTRONIC POWER CONDITIONER (EPC) HOUSING FOR SPACE PAYLOAD	04:15-04:25 PM
7	TITHI OJHA	NUMERICAL INVESTIGATIONS OF AMMONIA THERMOSYPHON IN HIGH GRAVITY ENVIRONMENT	004:25-04:35 PM
8	KEALEBOGA KEBAITSE	EFFECT OF BATTERY INCLINATION ON THE PERFORMANCE OF A BATTERY THERMAL MANAGEMENT SYSTEM	004:35-04:45 PM

DESIGN & AUTOMATION

Venue: L405

03:15-05:15 PM

Session Chair: Dr. Arup Kumat Hait & Sri Neeraj Mathur

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	VIJAY KUMAR	DESIGN AND DEVELOPMENT OF COMPOSITE MOULD FOR HIGH SURFACE ACCURACY APPLICATIONS	03:15-03:25 PM
2	K. SAI PURAVARDHAN	COMPARISON OF TRAJECTORY OF RE-ENTRY MODULES IN EARTH AND MARS ATMOSPHERIC REGIMES	03:25-03:35 PM
3	PRANSHU JAIN	COMPARISON OF THREE METHODS FOR SHORT-TERM WIND SPEED PREDICTION IN THREE INDIAN CITIES	03:35-03:45 PM
4	RAJAT PATEL	METHODS AND APPLICATION OF ADHESIVE SHIMMING IN STRUCTURAL ASSEMBLIES FOR STRESS FREE SURFACES	03:45-03:55 PM
5	DR. KISHAN ASHOK FUSE	INTEGRATING FMEA AND DEMATEL METHODS FOR IDENTIFICATION OF LEAKAGE OF OIL IN HYDRAULIC CYLINDER ASSEMBLY	03:55-04:05 PM
6	SALONI MALVIYA	DYNAMIC ANALYSIS OF UNDER ACTUATED SOFT ROBOTIC GRIPPER FOR SPACE APPLICATIONS	04:05-04:15 PM
7	MANSI SINGH	INDIGENOUSLY DESIGNED AND EFFICIENTLY CONTROLLED LOWER LIMB EXOSKELETONS FOR ENHANCED MOBILITY	04:15-04:25 PM
8	NIKHIL SHRIVAS	FINITE ELEMENT ANALYSIS 4 DEGREES OF FREEDOM MINI ROBOTIC ARM MANIPULATOR CAD MODEL WITH COMMONLY USED RAPID PROTOTYPING MATERIALS	04:25-04:35 PM
9	ROHI BINDAL	SPACE-BASED SOLAR PANELS BASED ON FOLDING MECHANISM: MINI REVIEW	04:35-04:45 PM

DESIGN & AUTOMATION

Venue: L405

11:30-01:00 PM

Session Chair: Sri Samir S. Sakhare & Dr. Jagath Rath

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	KRIPA SHANKER SINGH	SURFACE ERROR REDUCTION OF REFLECTOR SYSTEM FOR HIGH PRECISION HUB STATION	11:30-11:40 AM
2	AMIT AGARWAL	MECHANICAL DESIGN CHALLENGES IN THE DEVELOPMENT OF COMPACT KA/S DUAL BAND FEED FOR SHARED APERTURE ANTENNA	11:40-11:50 AM
3	DR. RAGHU CHANDRA GARIMELLA	ARTIFICIAL INTELLIGENCE FOR SOLAR POWER PLANT AT CWPRS: AN OVERVIEW	11:50-12:00 AM
4	BHAVESH AGRAWAL	SMART PROSTHETIC HAND EMPOWERED BY AI, IOT, AND INNOVATIVE MATERIAL SELECTION	12:00-12:10 PM
5	DHRUVI SHRIMALI	PREDICTION OF REMAINING USEFUL LIFE (RUL) FOR AN AIRCRAFT ENGINE USING VARIOUS MACHINE LEARNING ALGORITHMS	12:10-12:20 PM
6	SUMAN SHARMA	E-SEAL IN A TYPICAL CONVERGENT-DIVERGENT (CD) NOZZLE FOR A LIQUID ENGINE	12:20-12:30 PM
7	SURUCHI SHARMA	DEVELOPMENT AND INVESTIGATIONS ON A NOVEL SOLAR BUBBLE COLUMN LIQUID DESICCANT REGENERATOR	12:30-12:40 PM
8	VATSAL SUTARIYA	HYBRID VTOL UAVS: A COMPREHENSIVE REVIEW OF TECHNOLOGY, APPLICATIONS AND ADVANCEMENTS	12:40-12:50 PM
9	PUJAN SODHA	AN OVERVIEW OF WIRELESS COMMUNICATION PROTOCOLS AND TECHNIQUES FOR DRONES	12:50-01:00 PM

MATERIAL & COMPOSITES

Venue: L105

11:30-01:00 PM

Session Chair: Dr. Nirav I. Jamnapara & Sri Ulkesh Desai

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	DR. NIRAV I. JAMNAPARA	INVITED TALK	11:30-11:50 AM
2	AMRUTA N. MAHAJAN	ENGINEERING APPLICATIONS OF SUPERPLASTICITY OF METALS: REVIEW	11:50-12:00 PM
3	VARDHMAN S. CHAVAJ, GAIKWAD PRANOTI VIJAYKUMAR	CHARACTERISATION STUDY OF NATURAL FIBERS AND GLASS FIBERS AN EXPERIMENTAL APPROACH	12:00-12:10 PM
4	MANAN SHAH	INFLUENCE OF TRIBOLOGICAL PARAMETERS ON AS-CAST, T4 TREATED AND AGED AZ61 MAGNESIUM ALLOY	12:10-12:20 PM
5	DHAVAL MAKWANA	CELLULAR MG BASED BIODEGRADABLE BONE IMPLANT: RECENT DEVELOPMENT TO FUTURE PROSPECTS	12:20-12:30 PM
6	SOUMYAJIT DAS	SOME STUDIES ON POSITION OF NEUTRAL SURFACE FOR ROTATING FUNCTIONALLY GRADED MATERIAL PANELS	12:30-12:40 PM
7	YOGESH GHOTEKAR	DEVELOPMENT AND QUALIFICATION OF CNT-CFRP COMPOSITE COMPONENTS FOR SPACE APPLICATIONS	12:40-12:50 PM

MANUFACTURING

Venue: L305

11:30-01:00 PM

Session Chair: Dr. Ravi Kumar Gupta & Dr. PL Ram Kumar

SL. NO.	AUTHORS NAME	PAPER TITLE	TIME
1	SHREYANK KUMAR	AN EXPERIMENTAL STUDY ON THE INFLUENCE OF ACTIVATED FLUX IN THE TIG WELDING OF SS-316 STAINLESS STEEL	11:30-11:40 AM
2	WAMAN SAMBHAJI KHARAT	WELDING COPPER TO MAGNESIUM: A COMPREHENSIVE REVIEW OF FUSION AND SOLID-STATE APPROACHES	11:40-11:50 AM
3	DR. KIRAN WAKCHAURE	INVESTIGATION OF MATERIAL MOVEMENT IN FRICTION STIR WELDING WITH PLASTICINE AS A ANALOGUE	11:50-12:00 AM
4	AVANEESH KULKARNI	INVESTIGATION INTO THE PERFORMANCE OF TIG AND MIG WELDED JOINTS OF AL6061 PLATES	12:00-12:10 PM
5	DR. KISHAN ASHOK FUSE	INFLUENCE OF THE WELDING SPEED ON THE FRICTION STIR WELDING OF THICK AL 6061-T6 ALLOY USING A BOBBIN TOOL	12:10-12:20 PM
6	JAHNAVI KATAKPARA	ENHANCING TIG WELDING PERFORMANCE ON MONEL 400: KEY PARAMETERS	12:20-12:30 PM
7	KRUNAL MEHTA	INVESTIGATING THE EFFECT OF FRICTION STIR PROCESSING OF STIR-CAST AL (2014)-SIC MMCS ON THEIR SUPERPLASTIC BEHAVIOR	12:30-12:40 PM
8	YOGITA BHATI	EXPERIMENTAL INVESTIGATION OF ACTIVATED-TIG PROCESS FOR MONEL 400 ALLOY	12:40-12:50 PM
9	AMRUTA N. MAHAJAN	EFFECT OF PROCESSING ROUTE DURING DOUBLE PASS FSP ALONG WITH LOW HEAT INPUT IN THE SECOND PASS ON THE SUPERPLASTIC BEHAVIOR OF AZ31B ALLOY	12:50-01:00 PM