FORMAT FOR ANNUAL DEPARTMENT/CENTRE REPORT

(PERIOD: 1 APRIL 2019 – 31 MARCH 2020)

1. **Year of Establishment of the Department /Centre: 1995**
2. **Academic Programmes Offered:**

Bachelor of Technology (BTech) in
i. Mechanical Engineering
Master of Technology (MTech) in
(1) Machine Design,
(2) Fluid and Thermal Engineering,
(3) Manufacturing Science and Engineering,
(4) Computational Mechanics,
(5) Aerodynamics and Propulsion
Doctor of Philosophy (PhD)

3. **No. of Laboratories with brief introduction: (Total No: 15 + 14) Brief Description of each**

- Advanced Manufacturing Laboratory: Equipped with advanced equipments for manufacturing including micro-fabrication facility using CO2 Laser cutting technology.
- Strength of Materials Laboratory: Basically dedicated for doing all kinds of testing including tensile testing, fatigue testing, compressive testing, torsion testing, hardness testing, impact testing etc.
- Materials Science Laboratory: Dedicated for carrying out metallographic studies using highly precise microscope, XRD etc.
- Fluid Mechanics Laboratory: This lab has basic fluid mechanics set-up. The lab is equipped with different flow measuring set-ups such as venturimeter, orifice-plate, pitot tube, rotometer etc., where students can visualize the basic theory of working of the flow meter.
- Thermal Science Laboratory: This lab consists of heat exchangers, equipments for conducting experiments on conduction, convection and radiation, refrigeration systems etc. All these equipments facilitate learning of basic Thermodynamics and Thermal Engineering at undergraduate level.
- Turbo-machinery Laboratory: This lab has different tabletop model of pumps and turbines where students can study the performance characteristics of those machines. Students can strengthen their basic understandings of working and applications of these machines.
- IC Engine Laboratory: This lab is for both undergraduates and graduate students. Some of the experiments which are performed by under-graduate students are performance studies of both C.I. and S.I. engines, etc. Moreover studies on the calorific values, exhaust gas characteristics, extensive studies of bio-diesel with both engines are done by post-graduate students in their respective project works.
- Vibrations and Acoustics Laboratory: This lab demonstrates basic vibrational instruments to students at undergraduate level. Also provides facilities for measurement of frequency signals, rpm etc, and facilities for data-acquisition which are very much beneficial for research activities in the domain of vibrational analysis.
- Mechatronics and Robotics Laboratory: The Mechatronics and Robotics lab is equipped with various facilities to educate the students at the undergraduate and postgraduate levels. Most of the robotics activities are facilitated to students by this lab.
- Instrumentation and Control Laboratory: This lab performs calibration of pressure transducer/ gauge and other mechatronics apparatus, provides strain-gauge measurement facilities etc.
- Theory of Machines Laboratory: This lab consists of all basic equipments for understanding mechanisms, apparatus etc. at undergraduate level such as gyroscope, governor, jib-crane, screw jack, worm-wheel apparatus etc.
- Tribology Laboratory: Provides facilities for carrying out wear test of specimens of diff erent materials under the condition of with lubrication/without lubrication.
- CAD/CAM Laboratory: Specialized in extending computer-assisted software tools needed for design and analysis such as ABAQUS, ANSYS, Master CAM, Pro/E, ADAMS etc.
- Wind Tunnel Laboratory: Provides facilities for carrying out wind tunnel related experiments.
- 3D Printer Laboratory: Provides facilities for 3D printing.
- Fracture Mechanics and Composites Structures Lab: Caters to the development of composite laminates and enables NDT through ultrasonic scanning of the composite structures.

In addition, 14 new laboratories have been built –

- Micro-machining lab
- Aerodynamics lab
- Electromechanics lab
- Welding lab
- Dynamics and Vibration lab
- Advance Mechatronics and Bio-materials lab
- Computation MD Lab
- Microfluidics Lab-1
- Microfluidics Lab-2
- Smart materials and structures lab
- CFD lab
- Gasification and Thermal Lab
- Hydraulic lab

4. Major Equipment and Facilities acquired during 1 April 2019 – 31 March 2020:

5. Major Areas of Research and Development:

Groupwise Research Areas are
Fluids and Thermal Engineering

- Computational methods for Incompressible flows
- DNS and LES of Turbulence
- Energy management and conservation
- High speed aerodynamics
- Interfacial heat and mass transport
- Metal hydride based thermal machines
- Micro and nano-scale thermal/fluid transport
- Micro-fuel cells
- Thermal aspects of biological systems
- Thermal radiation

Machine Design Engineering

- Acoustics
- Active Materials
- Composites
- Dynamics and Vibrations
- Finite Element Method and Analysis
- Fracture Mechanics and Design
- Mechatronics
- Micromechanics
- Nanocomposites
- Rolling Element Bearings Design and Analysis
- Smart Structures
- Tribology

Manufacturing Engineering

- Bio-MEMS
- Casting
- CAD/CAM/CIM
- Coating
- Composites
- Computer Application in Metal Forming
- Design and Manufacturing
- Electromagnetic pulse processing
- FEM, Neural Network
- Fuzzy Set Application
- Genetic Algorithms and Fuzzy logic in manufacturing
- Mechatronics
- Metal Forming
- Unconventional machining processes
- Welding of light weight metals

- Welding Process Monitoring and Control

6. Major initiatives and breakthrough in Research and Development during 1 April 2019 – 31 March 2020:

7. Research Projects:

a) New Sponsored Projects (Total No: 18)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
Dr. Poonam Kumari	SERB Women Excellence Award 2019	SERB	18	N.A.	2019-2022
Dr. Poonam Kumari	Matrix	SERB	6.6	N.A.	2020-2023
Shyamanta M Hazarika	Electroencephelographic Characterization of Post-Stroke Motor Imagery Induced Mental Fatigue for Adaptive Neurorehabilitation	Cognitive Science Research Initiative; DST.	47.75	Dr. Souptick Chanda, BSBE.	2020-2023
Devarshi Kashyap	Development of a novel endotracheal tube holder for better management in invasive ventilation	TEQIP-III	17	Prof S Kanagaraj	2019-2021
Dr. N. Barman CVS, AAU	Farmers' friendly innovative mechanical devices to transform germplasm improving and animal welfare technologies for boosting the productivity of piggery farms at rural North Eastern States of India	NECBH	16	Prof S Kanagaraj	2019-2021
P Muthukumar	Energy Storage Platform on Hydrogen. Muti-Institutional Project	DST	220	NIL	2019-2024
Vinayak Kulkarni	Experimental studies on finiteness of a wing	DRDO-AR&DB	35.54	Niranjan Sahoo	2019-2021
Niranjan Sahoo	Stress Wave Force Balance (SWFB) Technique: An alternative method of accurate force measurement	ISRO-Respond	28.07	Vinayak Kulkarni	2019-2021
Sachin S Gautam	Functionality Enhancement through Design and Development of Advanced Finite Element Algorithms for STR TOOLS	SERB, DST under IMPRINT II.C	99.66	Dr. Arup Nandy (ME), Dr. Nelson Muthu (ME) and Dr. B. Hazra (CE)	2020-2023
Uday Shanker Dixit	Experimental and numerical research on contact friction in the process of plastic deformation by means of compression with torsion	DST-RFBR	26.29		2020-2022
Sajan Kapil	Design and Development of a Micro-Cladding based Metal 3D Printer	IIT Guwahati	7.25	N.A.	2020-2022
Arnab Kr. De	Dynamics of wake behind 3D tapered and circular cylinder in vortex induced vibration subject to planar and span-wise shear	SERB	6.6	N.A.	2020-2023
Arnab Kr. De	Numerical investigation on the effect of surface roughness and tilt angle on turbulent Rayleigh-Bénard convection	SERB	15.82	N.A.	2020-2022

S. K. Dwivedy	NMICPS TIH onTechnologies for Underwater Exploration	DST	720	30 Faculty members from different Dept. of IITG	2019-2024
S. K. Dwivedy	3D-Printed Microneedles for Improving Antibiotic Treatment Adherence	TEQIP-III	2.5	Subham Banerjee	2019-2021
KSRK Murthy	An examination on use of the quarter point elements for the accurate determination of notch stress intensity factors	SERB-DST	18.99	D. Chakraborty	2020-2022
Shrikrishna N. Joshi	Design and development of a simple cost-effective table-top multi-axis CNC machine tool configuration using parallel kinematics	SERB-DST	35.34	S K Dwivedy	2020-2022
S. Nayak	Development of non-edible green vegetable oil as a potential liquid dielectric for power/distribution transformer from the renewable source	IMPRINT-IIC	68.70	S K Dwivedy	2020-2023

b) Ongoing Sponsored Projects (Total No: 28)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
Amaresh Dalal	Analysis of flow transitions, thermo-physical properties, materials testing and heat transfer coefficient in Supercritical Steam based open loop	DST under Clean Energy Research Initiatives	33.7	Dr. Dipankar N Basu, Prof. Gautam Biswas	2018-2023
Amaresh Dalal	Development of Microbial Fuel Cells and theoretical modeling on the multiple effect of flow-materials in waste water bio-energy reactor	GITA-DST	42.96	Dr. Vimal Katiyar, Dr. Chandan Mukherjee, Prof. Gautam Biswas	2018-2021
Poonam Kumari	Development of Piezoelectric Fiber Reinforced Composites	NEWGEN IEDC PROJECTS	2.5	N.A.	2019-2020
Poonam Kumari	Sensing Acoustical Emissions from the Knee for Wearable Joint Health Assessment	NEWGEN IEDC PROJECTS	2.5	Prof S Kanagaraj	2019-2020
Poonam Kumari	Analytical solution for boundary layer stresses in piezoelectric plates with longitudinally functionally graded materials	SEB	23.96	N.A.	2017-2020
Shyamanta M Hazarika	Five Fingered Bionic Prosthetic Hand	BDTD-DST	26	Dr. Sangamesh R. Deepak, IIT Dharwad	2019-2021
Subramani Kanagaraj	Development of new generation Acetabular	IMPRINT	21.34	Prof. Bikramjit Basu, IISc	2019-2022

	Socket Liner and Femoral Head Prototypes with unique 3D microstructures and better fracture resistance for Osteoporosis and Osteoarthritis treatment				
Subramani Kanagaraj	An affordable lower limb prosthesis with polycentric knee joint, dynamic ankle joint and suction-suspension socket system having advanced features	IMPRINT	73.38	Prof. Nelson Muthu	2019-2022
Subramani Kanagaraj	Preservation of residual hearing by localized delivery of nanoceria based solid solution and composite as an antioxidant in cochlear implants	DBT	57.98	Dr. Abhijeet Bhatia, Dr. Jaya Mishra, Dr. Chnadan Nath, Dr. Pranjal Saikia, NEIGRIHMS Shillong, (Rs. 51.47 lakh) , Prof. Bikramjit Basu, IISc (Rs. 22.92 lakh), Dr. Ajai Kunnumakkara, Dr. Piruthivi Sukumar,	2017-2020
Subramani Kanagaraj	Program support for Research in Biological sciences and Healthcare Engineering in North East Region (NECBH)	DBT	543.6	Prof. S.K. Dwivedy, Prof. S. Dandapat, Prof. Ashish Anand, Prof. R. Swaminathan, HOD BSBE and Chemistry (Gait lab and Product design and testing lab)	2018-2021
Subramani Kanagaraj	Indigenous development of suture mediated vascular closure device for closure of arterial access site to achieve hemostasis following catheter angiography and interventions	DBT	29.06	Dr. Akash Handique, Dr.Amit Malviya, Dr. Pranjal P Saikia (2.6 lakh) NEIGRIHMS Shillong, Prof. Bhupen Sarma, (2.6 lakh) CVS, AAU, Prof.R. Ganesh Narayan	2019-2021
Nelson Muthu	Computational and Experimental study of damage and failure in carbon/glass fiber reinforced composite materials	SERB	49.59	-	2019-2022
Mr Vaibhav Jaiswal, Mr.Kishore Kumar Padi,Mr.Mahesh Jinkala	Dynamic-mechanical ankle joint for trans-femoral and trans-tibial amputees to increase their stability while walking in an uneven surface	NEWGEN IEDC PROJECTS	2.5	Subramani Kanagaraj	2019-2020
Mr. Ashirbad Jana	Development of a next generation Acetabular cup for total hip joint arthroplasty(THA)	NEWGEN IEDC PROJECTS	2.5	Subramani Kanagaraj Prof. S. Senthilvelan	2019-2020

c) Completed Sponsored Projects (Total No: 13)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration

Amaresh Dalal	Development of a General Purpose CFD Solver over a Hybrid Unstructured Grid	BRNS-DAE	300.9	Dr. Ganesh Natarajan, Dr. Nanda Kishore	2013-2019
Subramani Kanagaraj	Gait analysis based patient specific prosthetic polycentric knee joint and socket for trans-femoral amputees to improve their walking pattern	DSIR-PRISM	22	-	2017-2020
P Muthukumar	Development of Thermal Energy Storage Systems for Solar Thermal Power Plant	DST	129	Nil	2011-2015
P Muthukumar	Numerical and Experimental Analysis for the Development of a Metal Hydride Based Hydrogen Energy Storage	MNRE	34	Prof S C Mishra	2008-2012
P Muthukumar	Development of a Metal Hydride Based Thermal Energy Storage Systems.	DST	10	Nil	2007-2011
S C Mishra	Porous Radiant Burners for LPG Cooking Stove.	PCRA	10	P Muthukumar	2008-2020
S C Mishra	Design and Development of Kerosene stove with porous burner	PCRA	10	P Muthukumar	2008-2020
Niranjan Sahoo	Calibration methods of high frequency thermal sensors for localized temperature and heat flux measurements in gas turbine and internal combustion engine application	DRDO-AR&DB	34.98	Vinayak Kulkarni	2015-2017
Pranab K Mondal	Experimental investigation on the roughness-surface wettability coupling in capillary filling in microchannel	SERB-DST	48.39		2016-2019
Sachin S Gautam	Development of A Nonlinear Finite Element Based Framework for Elasto-plastic Contact Problems	VSSC, ISRO	12.5		2017-2019
U.S. Dixit	Design and Development of Proper Bonding Mechanism for individual AAC block units in wall system of a structure	DST-KD Infra	40.98	Dr. A. Borsaikia	May2016-July 2019
S K Kakoty	Coupled Modelling and Analysis of Gas Foil Bearings with Active Bearing Seating	SERB-DST	20.7	Karuna Kalita	2017-2020
S. Nayak	Development and performance analysis of nanofluid based dielectric fluid as an insulant and coolant in power transformers	SERB-DST	56.02	S.K. Dwivedy	2016-2019

8. Consultancy (Total No: 3)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. In Lakh)	Co-Investigator	Duration
P Muthukumar	Design and development of metal hydride-based hydrogen purification system	NTPC	22	Nil	2017-2019

Sukhomay Pal	Artificial Intelligence & its possible implementation in Indian Context	Ministry of Heavy Industries & Public Enterprises	13	Deepak Sharma and P C Kalita	2019
A.Murali krishna	Probabilistic and seismic hazard assessment (PSHA) and fragility evaluation of SSC's of KKNPP-3,4	BRNS	76	Abhishek Kumar, Sandip Das	2018-2021

9. Research Publications

International and National Journal (PERIOD: 1 APRIL 2019 – 31 MARCH 2020)

Total No. of International Journal: ……
Total No. of National Journal: …… } **158 nos.**

Format for submission of Research Publications/Journals

Sl. No.	Authors	Paper Title	Journal Name	Year	**Volume**	Issue Number (If any)	Starting Page	Ending Page
1	Varun Sharma, Pulak M. Pandey, Uday S. Dixit, Anish Roy and Vadim V. Silberschmidt	FE simulations of conventional and ultrasonically assisted turning processes with plane and textured cutting inserts	Journal of Micromanufacturing	2019	https://doi.org/10.1177/2516598419878022			
2	D. Gayen, R. Tiwari and D. Chakraborty	Static and Dynamic Analyses of Cracked on Functionally Graded Structural Components: A Review	Composites Part B,	2019	173	15	106982	
3	A. Chaudhari, S. K. Hotta, N. Sahoo and V. Kulkarni	Effect of vertical location of the spark plug on the performance of a raw biogas fueled variable compression ratio spark ignition engine	Energy and Enviornment	2019	30	7	1313	1338
4	A. Gagoi, A. Reddy Katha and P. K. Mondal	Influence of the Presence of the Cations on the Water and Salt Dynamics Inside Layered Graphene Oxide (GO) Membranes	Nanoscale (Royal Society of Chemistry)	2020	12		7273	7283
5	A. J. Chaudhari, S. K. Hotta, N. Sahoo and V. Kulkarni	Combined impact of compression ratio and re-circulated exhaust gas on the performance of a biogas fueled spark ignition engine	Journal of Renewable and Sustainable Energy	2019	11	1	013104(1)	013104(15)
6	A. Jat and Tiwari R.	Multi-Objective Optimization of Spherical Roller Bearings	Journal of King Saud	2020	32	1	58	68

		Based on Fatigue and Wear Using Evolutionary Algorithm	University – Engineering Sciences					
7	A. Misra, P.M. Pandey, U.S. Dixt, A. Roy and V.V. Silberschmidt	Multi-objective optimization of ultrasonic-assisted magnetic abrasive finishing process	International Journal of Advanced Manufacturing Technology	2019	101	05-Aug	1661	1670
8	A. Raj, A. Ch. Borsaikia and U.S. Dixit	Bond strength of Autoclaved Aerated Concrete (AAC) masonry using various joint materials	Journal of Building Engineering	2020	28		101039-1	101039-10
9	A. Raj, A. Ch. Borsaikia and U.S. Dixit	Compressive and shear bond strengths of grooved AAC blocks and masonry	Materials and Structures	2019	52		116-1	116-11
10	A. Raj, A. Ch. Borsaikia and U.S. Dixit	Evaluation of mechanical properties of autoclaved aerated concrete (AAC) block and its masonry	Journal of Institution of Engineers (India), Series A	2020	DOI :10.1007 /s40030-020-00437-5			
11	A. Singh, P. Bind, P. Kumari	2D free vibration solution of the hybrid piezoelectric laminated beams using extended Kantorovich method	Journal of The Institution of Engineers (India): Series C	2020	101		1	12
12	Agyapal Singh and Poonam Kumari	Analytical free vibration solution for angle-ply piezolaminated plate under cylindrical bending: A piezo-elasticity approach	Advances in Computational Design	2020	5		55	89
13	Anil Kumar Rout, Niranjan Sahoo and Pankaj Kalita	Effectiveness of coaxial surface junction thermal probe for transient measurements through laser based heat flux assessment	Heat and Mass Transfer	2020	56		1141	1152
14	Animesh Nandy, D. Chakraborty and Mahesh S Shah	Optimal Sensors/Actuators Placement In Smart Structure using Island Model Parallel Genetic Algorithm	International Journal of Computational Methods	2019	16	6	1840018	
15	Bukke Kiran Naik, Muthukumar P	Parametric and Performance Investigations on Novel Multipurpose Liquid Desiccant Drying/Desalination System.	Heat Transfer Engineering.	2020				
16	C. Shravan and R. Tiwari	Experimental Identification of Cracked Rotor System Parameters from the Forward and Backward Whirl Responses	Archive in Mechanical Engineering	2019	66	3	329	353
17	Chilaka RCR, Vigneshwaran K, Hakeem Niyas, Muthukumar, P	Performance investigation of lab-scale sensible heat storage prototypes, Article in Press,	Int Journal Green Energy,	2020				
18	D. Gayen, R. Tiwari and D. Chakraborty	Finite element based stability analysis of a rotor-bearing system having a functionally	International Journal of	2019	157-158		403	414

		graded shaft with transverse breathing cracks	Mechanical Sciences					
19	Debabrat Gayen, R. Tiwari and D. Chakraborty	Static and Dynamic Analyses of Cracked on Functionally Graded Structural Components: A Review	Composites, Part B: Engineering	2019	173	106982	1	24
20	Deepak Sharma, and Pradyumn K. Shukla	Line-Prioritized Environmental Selection and Normalization Scheme for Many-Objective Optimization using Reference-Lines-based Framework	Swarm and Evolutionary Computation	2019	51		100592	
21	Dehury, P., Chaudhary R. K., Banerjee, T., and Dalal, A.	Evaluation of Thermophysical Properties of Menthol-Based Deep Eutectic Solvent as a Thermal Fluid: Forced Convection and Numerical Studies	Industrial & Engineering Chemistry Research	2019	58	43	20125	20133
22	Dipendra K. Roy and R. Tiwari	Identification of the Internal and External Damping in a Cracked Rotor System Undergoing Forward and Backward Whirls	Archive in Mechanical Engineering	2019	66	2	229	255
23	Dipendra K. Roy and R. Tiwari	Estimation of the Internal and External Damping from the Forward and Backward Spectrum of a Rotor with a Fatigue Crack	Propulsion and Power Research	2019	9	1	62	74
24	Dipendra K. Roy and R. Tiwari	Experimental Identification of Rotating and Stationary Damping in a Cracked Rotor System with an Offset Disc	Archive in Mechanical Engineering	2019	66	4	447	474
25	F. Sharma and U.S. Dixit	Fuzzy set based cost model of additive manufacturing with specific example of selective laser sintering	Journal of Mechanical Science and Technology	2019	33	9	4439	4449
26	Fenil D, Asonganyi A, Sunku Prasad J, Muthukumar P, Muhammad R, Eylem A	Experimental Studies on Endothermic Reversible Reaction of Salts for Cooling.	Heat Transfer Engineering.	2020				
27	G. C. Subramaniam and P. K. Mondal	Effect of Couple Stresses on the Rheology and Dynamics of Linear Maxwell Viscoelastic Fluids	Physics of Fluids	2020	32		013108-1	013108-14
28	G. Ranjan and R. Tiwari	Application of Active Magnetic Bearings for In-Situ Flexible Rotor Residual Balancing Using a Novel Generalized Influence Coefficient Method	Inverse Problems in Science & Engineering	2019	27	7	943	968
29	G.C. Verma, P.M. Pandey and U.S. Dixit	An experimental study on surface roughness and frictional property of ultrasonic-vibration-assisted milled surface	Proceedings of IMECH-E, Part C: Journal of Mechanical Engineering Science	2019	233	12	4187	4198

30	H Basumatary, Shyamanta M Hazarika	State of the Art in Bionic Hands.	IEEE Transactions on Human-Machine Systems	2020	50	2		
31	H.S. Gaikwad, P.K. Mondal, D. N. Basu, N. Chimres, S. Wongwises	Analysis of the effects of Joule heating and viscous dissipation on combined pressure-driven and electrokinetic flows in a two-parallel plate channel with unequal constant temperatures	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	2019	233	4	871	879
32	J. S. Rapur and R. Tiwari	On-line Time Domain Vibration and Current Signals Based Multi-Fault Diagnosis of Centrifugal Pumps using Support Vector Machines	Journal of Nondestructive Evaluation	2019	38	6	1	18
33	J. Shruti Rapur and R. Tiwari	Multi-fault diagnosis of combined hydraulic and mechanical centrifugal pump faults using continuous wavelet transform and support vector machines	ASME, Journal of Dynamic Systems, Measurement and Control	2019	141	11	111013-1	11013-14
34	J. Shruti Rapur and R. Tiwari	Experimental fault diagnosis for known and unseen operating conditions of centrifugal pumps using MSVM and WPT based analyses	Measurement	2019	147	106809	1	15
35	J. Zhang, M. Wu, Q. Peng, U.S. Dixit and P. Gu	Design for interface stiffness of mechanical products using integrated simulation and optimization under uncertainty	ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems Part B: Mechanical Engineering	2020	6	2	21006-1	21006-10
36	Jasinta P Ekka, Krishnendu B, Muthukumar P, Dipak Kumar K	Performance analysis of a forced convection mixed mode horizontal solar cabinet dryer for drying of black ginger (Kaempferia parviflora) using two successive air mass flow rates.	Renewable Energy	2020	152,		55	66
37	Kashyap D, Gaur SS, Kanagaraj S	Development of hybrid shape memory polyurethane composites for endovascular applications.	Materials Today Communications	2020	22		100751	
38	Kiran Naik B, Muthukumar P	Performance comparison of air cooled and water cooled condenser based air conditioning plants in a humid subtropical region.	J Air Conditioning and Refrigeration ISHRAE,	2019	22	4	44	58
39	Kiran Naik, Bharat Singh, Neelam Dutta,	Fluid to liquid membrane energy exchanger for simultaneous liquid desiccant regeneration and desalination	Energy Conversion and Management	2020	204 (15)	15	112291	

	Senthilmurugan S. Muthukumar P (	applications–Theoretical and experimental analyses.						
40	Kotoky, S., Dalal, A., and Natarajan, G.	A Computational Analysis of the Role of Particle Diameter on the Fluidization Behavior in a Bubbling Gas-Solid Fluidized Bed	Computational Particle Mechanics	2019				
41	Krishan Chand, Mukesh Sharma, Venugopal T. Vishnu, and Arnab Kr. De	Statistics of coherent structures in twodimensional turbulent Rayleigh-Bénard convection	Physics of Fluids	2019	31	115112	1	15
42	Lakshmi DVN, Muthukumar P, Layek A, Nayak PK.	Performance Analyses of Mixed Mode Forced Convection Solar Dryer for Drying of Stevia Leaves.	Solar Energy	2019	188		507	518
43	M. Kumar, Sachin S. Gautam, and P. M. Dixit	Non-linear ductile damage growth law at elevated temperature	Sadhana	2019	44		145-1	145-17
44	M. S. Agrawal, H. S. Gaikwad, P. K. Mondal, G. Biswas	Analysis and Experiments on the Spreading Dynamics of a Viscoelastic Drop	Applied Mathematical Modelling	2019	75		201	209
45	Manish Agrawal, Arup Nandy, CS Jog	A hybrid finite element formulation for large-deformation contact mechanics	Computer Methods in Applied Mechanics and Engineering	2019	356		407	434
46	Mrinal Bhowmik Anandalakshmi R, Muthukumar P	Numerical Investigation of Performance Trade-Off Characteristics of a Packed Bed Dehumidifier using Aqueous Blends of Lithium Chloride and Calcium Chloride	Heat and Mass Transfer	2020				
47	Mrinal Bhowmik, Muthukumar P, Anandalakshmi R	Experimental based multilayer perceptron approach for prediction of evacuated solar collector performance in humid subtropical regions	Renewable Energy	2020	143		1566	1580
48	N. Bhardwaj, R.G. Naryanan, U.S. Dixit and M.S.J. Hashmi	Recent developments in friction stir welding and resulting industrial practices	Advances in Materials and Processing Technologies	2019	5	3	461	496
49	Nada Barakat and Deepak Sharma	Evolutionary Multi-Objective Optimization for Bulldozer and its Blade in Soil Cutting	International Journal of Management Science and Engineering Management	2019	14	2	102	112
50	Nandani Rai, Raagdeep Raj, S. Kanagaraj	Radical Scavenging of Nanoceria in Minimizing the Oxidative Stress-Induced Loss of Residual Hearing: A Review	Journal of the Indian Institute of Science	2019	99	3	529	545
51	Naskar S, Panda AK, Jana A,	UHMWPE-MWCNT-nHA based hybrid trilayer	J Biomed Mater Res.Part	2020			1	24

	Kanagaraj S, Basu B.	nanobiocomposite: Processing approach, physical properties, stem/bone cell functionality, and blood compatibility.	B Applied Bjiomaterials					
52	Nath, B., Bidkar, A. P., Kumar, V., Dalal, A., Jolly, M. K., Ghosh, S., and Biswas, G.	Deciphering Hydrodynamic and Drug-resistant Behaviors of Metastatic EMT Breast Cancer Cells Moving in a Constricted Microcapillary	Journal of Clinical Medicine	2019	8		1194-1	1194-15
53	Nithin N. Raju, Muthukumar P, Vivek Selvan P, Malleswararao K.	Design Methodology and Thermal Modelling of Industrial Scale Reactor for Solid State Hydrogen Storage,	Int J Hydrogen Energy	2019	44		20278	20292
54	P. Gangsar and R. Tiwari	On-line Diagnostics of Mechanical and Electrical Faults in Induction Motor using Multiclass Support Vector Machine Algorithms based on Frequency Domain Vibration and Current Signals	ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering	2019	5	3	031001-1	031011-15
55	P. Gangsar and R. Tiwari	Diagnostics of Mechanical and Electrical Faults in Induction Motors using Wavelet based Features of Vibration and Current through Support Vector Machine Algorithms	Journal of the Brazilian Society of Mechanical Sciences and Engineering	2019	41	2	1	25
56	P. K. Bannaravuri, A. K. Birru and U. S. Dixit	Effect of laser surface melting on the surface integrity of aluminium composites	Transactions of Nonferrous Metals Society of China	2020	30	2	344	362
57	P. K. Mondal and S. Wongwises	Magneto-Hydrodynamic (MHD) Micropump of Nanofluids in a Rotating Microchannel under Electrical Double Layer Effect	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	2020	DOI: 10.1177/0954408920921697			
58	Pandey, V., Deka, H., Biswas, G., and Dalal, A.	Dynamics of Growth and Break-up of an Evaporating Pendant Drop	ASME Journal of Heat Transfer	2020	142	2	021601-1	021601-8
59	Pardeep Pankaj, Avinish Tiwari, Pankaj Biswas, A. Gourav Rao & Sukhomay Pal	Experimental studies on controlling of process parameters in dissimilar friction stir welding of DH36 shipbuilding steel-AISI 1008 steel	Welding in the World	2020	doi.org/10.1007/s40194-020-00886-3.			
60	Pardeep Pankaj, Tiwari Avinish and Biswas Pankaj	Influence of operating parameters on CO2 laser welded butt joints of AISI 304 stainless steel thin sheets	Lasers in Manufacturing and Materials Processing	2019	, DOI:10.1007/s40516-019-00091-1, pp.1-23.		1	23

61	Pardeep Pankaj, Tiwari Avinish, Bhadra Rakesh and Biswas Pankaj	Experimental Investigation on CO2 Laser Butt Welding of AISI 304 Stainless Steel and Mild Steel Thin Sheets	Optics & Laser Technology	2019	119 (105633)		1	14
62	Parth Paritosh, Bhaben Kalita and Deepak Sharma	A Game Theory based Land Layout Optimization of Cities Using Genetic Algorithm	International Journal of Management Science and Engineering Management	2019	14	3	155	168
63	PVSS Sridhar, P. Mahanta and Biswas Pankaj	Influence of Welding Current on Bead profile and Mechanical properties of Double sided submerged arc welding of AISI 304 Austenitic stainless steel,	Materials Today: Proceedings (Elsevier).	2019	doi.org/ 10.1016/ j.matpr. 2019.08. 140.			
64	R Bhattacharyya, Shyamanta M Hazarika	A knowledge-driven layered inverse reinforcement learning approach for recognizing human intents.	Journal of Experimental & Theoretical Artificial Intelligence	2020	Online First			
65	R. S. Srinivas, R. Tiwari and Ch. K. Babu	Model Based Analysis and Identification of Multiple Fault Parameters in Coupled Rotor Systems with Offset Discs in the Presence of Angular Misalignment and Integrated with an Active Magnetic Bearing	Journal of Sound & Vibration	2019	450	1	109	140
66	R. Sarma and P. K . Mondal	Marangoni instability in a heated viscoelastic liquid film: Longwave versus shortwave perturbations	Physical Review E	2019	100	1	013103-1	013103-14
67	R. Shufen, N. Mahanta and U.S. Dixit	Development of a thermal autofrettage setup to generate compressive residual stresses on the surfaces of a cylinder	ASME Journal of Pressure Vessel Technology	2019	141	5	51403-1	51403-12
68	R. Vignesh Babu, S. Kanagaraj	Sintering behaviour of Copper/Carbon nanotube composites and their characterization	Advanced Powder Technology	2019	30	10	2200	2210
69	Raghavendra Rohit Dabbara and R. Tiwari	Strength-Wear-Thermal Based Multi-Objective Geometric Design Optimization of Cylindrical Roller Bearings using Genetic Algorithms	Machine Design	2019	11	4	113	130
70	S. Arun, Balaphrang Marbaniang, Bhaskar Borgohain & S. Kanagaraj.	Rehabilitation evaluation of the newly developed polymeric based passive polycentric knee joint	Disability and Rehabilitation: Assistive Technology,	2019			DOI: 10.1080/ 1748310 7.2019.1 621955	
71	S. Gorthi, H.S. Gaikwad, P. K. Mondal and G. Biswas	Surface Tension Driven Filling in a Soft Microchannel: Role of Streaming Potential	Industrial and Engineering Chemistry Research (ACS)	2019	59		3839	3853

72	S. K. Barik, R. G. Narayanan and N. Sahoo	Forming response of AA5052-H32 sheet deformed using a shock tube	Transactions of Nonferrous Metals Society of China	2020	30	3	603	618
73	S. K. Hotta, N. Sahoo and K. Mohanty	Comparative assessment of a spark ignition engine fueled with gasoline and raw biogas	Renewable Energy	2019	134		1307	1319
74	S. Pandian, S. L. N. Desikan and Sahoo Niranjan	Onset of cavity oscillation from transverse to longitudinal mode in a supersonic flow	ASME Journal of Fluids Engineering	2020	142	61203	1	10
75	S. Pandian, S. L. N. Desikan and Sahoo Niranjan	Non-linear characteristics of a rectangular cavity in supersonic flow	AIAA Journal	2020	58	3	1206	1215
76	S. Pandian, S. L. N. Desikan and Sahoo Niranjan	Onset of transient shock interaction with cavity shear layer	AIAA Journal	2019	57	9	3773	3778
77	S. Pati, P.K. Mondal	Limiting thermal characteristics for flow of non-Newtonian fluids between asymmetrically heated parallel plates: An analytical study	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	2019	233	4	880	892
78	S.Shyama, M. Asfer, B. Mehta, P. K.Mondal and Z. A. Almutairid	Magnetic field driven actuation of sessile ferrofluid droplets in the presence of a time dependent magnetic field	Colloids and Surfaces A: Physicochemical and Engineering Aspects	2020	586	5	124116-1	124116-12
79	Sagar Pawar, Sachin D Kore, Arup Nandy	Comparison of Sheared Edge Zones Developed in Electromagnetic and Quasistatic Dieless Perforation	J. of Materi Eng and Perform	2020	29		1146	1155
80	Sajan Kapil, Fisseha Legesse, Seema Negi, K. P. Karunakaran, and Swarup Bag	Hybrid layered manufacturing of a bimetallic injection mold of P20 tool steel and mild steel with conformal cooling channels	Progress in Additive Manufacturing	2020	doi.org/10.1007/s40964-020-00129-3			
81	Sangjukta Devi, Niranjan Sahoo and P. Muthukumar	Experimental studies on biogas combustion in a novel double layer inert porous radiant burner	Renewable Energy	2020	149		1040	1052
82	Santosh Kumar Hotta, Niranjan Sahoo, Kaustubha Mohanty and Vinayak Kulkarni	Ignition timing and compression ratio as effective means for the improvement in the operating characteristics of a biogas fueled spark ignition engine	Renewable Energy	2020	150		854	867
83	Sarma, B., Shahapure, V., Dalal, A., and Basu, D. N.	Magnetowetting Dynamics of Sessile Ferrofluid Drops on Soft Surfaces	Soft Matter	2020	16		970	982
84	Sarma, B., Shahapure, V.,	Experimental Characterization of the Growth Dynamics	Physical Review E	2019	100		013106-1	013106-12

	Dalal, A., and Basu, D. N.	During Capillarity-Driven Generation						
85	Satyaki Chandra, Pratibha Sharma, Muthukumar P, Sankara Sarma VT (	Modeling and numerical simulation of a 5 kg LaNi5-based hydrogen storage reactor with internal conical fins.	Int J Hydrogen Energy	2020	45 (15)	15	8794	8809
86	Saurav Suman, Pankaj Biswas	Comparative Study on SAW Welding Induced Distortion and Residual Stresses of CSEF Steel Considering Solid State Phase Transformation and Preheating	Journal of Manufacturing Processes.	2020	51		19	30
87	Saurav Suman, Pankaj Biswas and Avinish Tiwari	Microstructure Evolution and Mechanical Behaviour of SAW Welded CSEF Steel on Preheating and PWHT,	Transactions of the Indian Institute of Metals,	2020	doi.org/ 10.1007/ s12666-020-01961-5			
88	Saurav Suman, Pankaj Biswas,	Thermo-mechanical study of single and multi-pass welding of CSEF steel for residual stresses and deformations considering solid state phase transformation	Materials Todays-proceedings.	2020	doi.org/ 10.1016/ j.matpr. 2019.12. 299.			
89	Saurav Suman, Pankaj Biswas, S. K. Patel, V. P. Singh, Akhileshwar Nirala, Basil Kuriachen,	Measurement of Residual Stresses in Submerged Arc Welded P91 Steel Using Surface Deformation	Materials Todays-proceedings	2020	21	3	1707	1712
90	Seema Negi, A. A. Nambolan, Sajan Kapil, Prathamesh S. Joshi, R. Manivannan, K. P. Karunakaran, and Parag Bhargava	Review on electron beam based additive manufacturing	Rapid Prototyping Journal	2019	26	3	485	498
91	Shranish Kar, Poonam Kumari	Three-dimensional analytical solution of arbitrarily supported cylindrical panels with weak interfaces using the extended Kantorovich method	Composite Structures	2020	236		111802	
92	Sidhartha Das, Asis Giri, Sutanu Samanta, and S. Kanagaraj.	An experimental investigation of properties of nano-fluid and its performance on thermosyphon cooled by natural convection.	Transactions of the ASME Journal of Thermal Science and Engineering Applications	2019	11		044501-1	044501-9
93	Sidhartha Das, Asis Giri, Sutanu Samanta, and S. Kanagaraj.	Role of graphene nanofluids on heat transfer enhancement in thermosyphon	Journal of Science: Advanced Materials and Devices	2019	4		163	169
94	Vishnu VT, Arnab Kr. De, P.K. Mishra	Significance of Prandtl Number on the Heat Transport	ASME J. Heat Transfer	2019	142	1	1	10

		and Flow Structure in Rotating Rayleigh–Bénard Convection						
95	Soumya Ranjan Nanda, Vinayak Kulkarni, Niranjan Sahoo and Viren Menezes	A comparison of accelerometer and piezofilm-based force balances for hypersonic shock tunnels	Journal of Aerospace Engineering (IMeche Part G)	2019	233	14	5310	5320
96	Soumya Ranjan Nanda, Vinayak Kulkarni, Niranjan Sahoo and Viren Menezes	An innovative approach for prediction of aerodynamic coefficients in shock tunnel testing with soft computing	Measurement	2019	134		773	780
97	Suman Saurav, Sridhar P. V. S. S., Biswas Pankaj, Deepjyoti Das	Prediction of welding induced distortions in large weld Structure through Improved Equivalent Load Method Based on Average Plastic Strains	Welding in the World	2020	64	1	179	200
98	Sunku Prasad J, Anandalakshmi R, Muthukumar P	Numerical Investigation on Conventional and PCM Heat Sinks under Constant and Variable Heat Flux Conditions.	Clean Technologies and Environmental Policy.	2020				
99	Sunku Prasad J, Muthukumarar, P, Fenil Desai, Dipankar N. Basu, Muhammad M. Rahman.	A Critical Review of High-Temperature Reversible Thermochemical Energy Storage Systems,	Applied Energy,	2019	254		113733	
100	Susant Behera, Poonam Kumari	Analytical piezoelasticity solution for natural frequencies of levy-type piezolaminated plates	International Journal of Applied Mechanics	2019	11		1950023	
101	Thirumalaisamy, R., Natarajan, G., and Dalal, A.	Comment on a “Modifications to the Gradient Schemes on Unstructured Cell Centered Grids for the Accurate Determination of Gradients near Conductivity Changes”	Physics of Fluids	2019	31		129101-1	129101-4
102	Tiwari Avinish, Pardeep Pankaj, Biswas Pankaj, Kore S. D. & Gourav Rao A.	Tool performance evaluation of friction stir welded shipbuilding grade DH36 steel butt joints	International Journal of Advanced Manufacturing Technology,	2019	103	(5-8)	1989	2005
103	Tiwari Avinish, Pardeep Pankaj, Biswas Pankaj, Kore S. D. and Pal Sukhomay	Effect of tool offset and rotational speed in dissimilar friction stir welding of AISI 304 stainless steel and mild steel	Journal of Materials Engineering and Performances	2019	28		6365	6379
104	Tiwari Avinish, Singh Piyush, Pardeep Pankaj, Biswas Pankaj, Kore S. D.& Gourav Rao A	FSW of low carbon steel using Tungsten Carbide (WC-10wt.%Co) based tool material	Journal of Mechanical Science and Technology	2019	33	10	1	8

105	U Talukdar, Shyamanta M Hazarika, John Q Gan	Adaptive feature extraction in EEG-based motor imagery BCI: tracking mental fatigue.	Journal of Neural Engineering	2020	17	1		
106	U Talukdar, Shyamanta M Hazarika, John Q Gan	Adaptation of Common Spatial Patterns based on mental fatigue for motor-imagery BCI.	Biomedical Signal Processing and Control	2020	58			
107	U.S. Dixit, P.M. Pandey and G.C. Verma	Ultrasonic-assisted machining processes: A review	International Journal of Mechatronics and Manufacturing Systems	2019	12	03-Apr	227	254
108	Utpal Kiran, Deepak Sharma and Sachin Singh Gautam	GPU-Warp based Finite Element Matrices Generation and Assembly using Coloring Method.	Journal of Computational Design and Engineering	2019	6	4	705	718
109	V. Agrawal and Sachin S. Gautam	IGA: A simplified introduction and implementation details for finite element users	Journal of The Institution of Engineers (India): Series C.	2019	100	3	561	585
110	V. Agrawal and Sachin S. Gautam	Higher-order Hermite enriched contact finite elements for adhesive contact problems	International Journal of Materials and Structural Integrity,	2019	13	01-Mar	16	31
111	V. Kumar and U.S. Dixit	Estimation of temperature-dependent yield strength and modulus of elasticity during laser bending	Measurement	2020	154		107515-1	107515-11
112	Vigneshwaran K, Gurpreet Singh Sodhi, Muthukumar P, Senthilmurugan S.	Concrete based high temperature thermal energy storage system: Experimental and Numerical Studies.	Energy Conversion and Management	2019	198,		111905	
113	Vigneshwaran K, Gurpreet Singh Sodhi, Muthukumar, P, Anurag Guha, Senthilmurugan S.	Experimental and Numerical Investigations on High Temperature Cast Steel Based Sensible Heat Storage System,	Applied Energy,	2019	251		113322	
114	Sarita, B., Senthilvelan,S	Effects of lubricant on the surface durability of an injection molded polyamide 66 spur gear paired with a steel gear	Tribology International	2019	137		193	211
115	A Karthik Pandian, Sachin Singh Gautam, S Senthilvelan	Experimental and numerical investigation of the bending fatigue performance of symmetric and asymmetric polymer gears,	Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications	2020			https://doi.org/10.1177/14644207209094 86	

116	Vishnu VT, Arnab Kr. De, P.K. Mishra	Dynamics and statistics of reorientations of large-scale circulation in turbulent rotating Rayleigh-Bénard convection	Physics of Fluids	2019	31	55112	1	18
117	Bipul Das, Sukhomay Pal, Swarup Bag	Probing defects in friction stir welding process using temperature profile	Sadhana	2019	44	4	79	
118	Dipankar Saha, Sukhomay Pal	Microstructure and Work Hardening Behaviour of Micro Plasma Arc Welded AISI 316L Sheet Joint	Journal of Materials Engineering and Performance	2019	28	5	2588	2599
119	Prakash Kumar Sahu, Nikhil P Vasudevan, Bipul Das and Sukhomay Pal	Assessment of Self-Reacting Bobbin Tool Friction Stir Welding for Joining AZ31 Magnesium Alloy at Inert Gas Environment	Journal of Magnesium and Alloys	2019	7	4	661	671
120	Avinish Tiwari, Piyush Singh, Pardeep Pankaj, Pankaj Biswas, Sachin D. Kore, Sukhomay Pal	Effect of tool offset and rotational speed in dissimilar friction stir welding of AISI 304 stainless steel and mild steel	Journal of Materials Engineering and Performances	2019	28	10	6365	6379
121	Prakash Kumar Sahu, Sukhomay Pal and Qingyu Shi	Effect of solid solution phase constitution on dissimilar Al/Cu FSW using Zn as an alloying element at the joint interface,	SN Applied Sciences	2019	1	12		
122	Prakash Kumar Sahu, Jayashree Das, Gaoqiang Chen, Qu Liu, Sukhomay Pal, Shenbo Zeng, Qingyu Shi,	Friction stir selective alloying of different Al% particulate reinforced to AZ31 Mg for enhanced mechanical and metallurgical properties	Journal of Materials Science and Engineering: A	2020	774		https://doi.org/10.1016/j.msea.2019.138889	
123	Srinivas R Gorthi, Pranab Kumar Mondal, Gautam Bisaws and Kirti Sahu	Electro-capillary filling in a microchannel under the influence of magnetic and electric fields	Canadian Journal of Chemical Engineering	2020	Accepted			
124	S Jain and U K Saha	Capturing the dynamic stall in H-type Darrieus wind turbines using different URANS turbulence models	ASME Journal of Energy Resources Technology	2020	142	9	091302-1	091302-13
125	A Sarkar and U K Saha	Assessment of dual fuel diesel engine performance by modulating biogas flowrate and intake charge preheating	International Journal of Ambient Energy	2020	Februar y		1	8
126	S Jain and U K Saha	The state-of-the-art technology of H-type Darrieus wind turbine rotors	ASME Journal of Energy Resources Technology	2020	142	3	030801-1	030801-25
127	N Alom and U K Saha	Drag and lift characteristics of a novel elliptical-bladed Savonius rotor with vent augementers	ASME Journal of Solar Energy Engineering	2019	141	5	051007-1	051007-12

128	R S Reddy, S Panda and A Gupta	Nonlinear dynamics of an inclined FG pipe conveying pulsatile hot fluid	International Journal of Non-Linear Mechanics	2019	118		103276	
129	R S Reddy, S Panda and G Natarajan	Nonlinear dynamics of functionally graded pipes conveying hot fluid	Nonlinear Dynamics	2019	99	3	1989	2010
130	M K Dubey and Satyajit Panda	Shear actuation mechanism and shear-based actuation capability of an obliquely reinforced PFC in active control of annular plates	Journal of Intelligent Material Systems and Structures	2019	30	16	2447	2463
131	M K Dubey and Satyajit Panda	Shear-based vibration control of annular sandwich plates using different piezoelectric fiber composites: A comparative study	Journal of Sandwich Structures & Materials	2019			1.09964 E+15	
132	Satyajit Panda and M K Dubey	A balanced laminate of piezoelectric fiber composite for improved shear piezoelectric actuation of beams	Mechanics of Advanced Materials and Structures	2019			1	13
133	A. Kumar and S. K. Kakoty	Effect of Couple Stress Parameter on Steady State and Dynamic Characteristics of Three-Lobe Journal Bearing Operating on TiO2 Nanolubricant	Journal of Engineering Tribology,	2020	234	4	528	540
134	A Kumar and S K Kakoty	Effect of couple-stress parameter on the steady state performance parameters of two-lobe journal bearing operating with non-Newtonian lubricant	Materials Today: Proceedings	2020	24P2		453	462
135	K K Basumatary, G Kumar, K Kalita, and S K Kakoty	Stability Analysis of Rigid Rotors Supported by Gas Foil Bearings Coupled with Electromagnetic Actuators	Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science	2020	234	2	427	443
136	Atul K Soti, Ashoke De	Vortex-induced Vibrations of a Confined Circular Cylinder for Efficient Flow Power Extraction	Physics of Fluids	2020	32, 033603			
137	Mishra R., Soti A. K., Thompson, M. C., Bhardwaj R., Kukarni S. S.	Vortex-induced vibration of a circular cylinder on viscoelastic support at low Reynolds number	Journal of Fluid and Structures	2020	95, 102997			
138	Upasana Sarma, Shrikrishna N. Joshi	Machining of micro-channels on polycarbonate by using Laser-Induced Plasma Assisted Ablation (LIPAA)	Optics & Laser Technology	2020	128	106257		
139	Sanghamitra Das, Shrikrishna N. Joshi	Estimation of wire strength based on residual stresses	Journal of Manufacturing Processes	2020	53		406	419

		induced during wire electric discharge machining						
140	A Chanda, SK Dwivedy	A Study of Nonlinear Behavior of Flexible Tool and Workpiece in Turning Operation With Regenerative Effect Under Internal and Primary Resonance Conditions	ASME, Journal of Computational and Nonlinear Dynamics	2020	15	6	61004	(11 pages)
141	Bhaben Kalita and S. K. Dwivedy	Numerical Investigation of Nonlinear Dynamics of a Pneumatic Artificial Muscle With Hard Excitation	ASME, Journal of Computational and Nonlinear Dynamics	2020	15	4	41003	(22 pages)
142	Anshul Garg and Santosha K. Dwivedy	Piezoelectric energy harvester under parametric excitation: A theoretical and experimental investigation	Journal of Intelligent Material Systems and Structures	2020	31	4	612	631
143	Sibananda Mohanty and S. K. Dwivedy	Nonlinear Vibration Absorber for a Nonlinear System with a Time Delay Acceleration Feedback under the Internal Resonance, Subharmonic, Superharmonic and Principal Parametric Resonance Conditions Simultaneously		2019	13	5	9	15
144	Sibananda Mohanty and S. K. Dwivedy	Nonlinear Dynamics of Piezoelectric based Active Nonlinear Vibration Absorber using Time Delay Acceleration Feedback	Nonlinear Dynamics	2019	98	2	1465	1490
145	Bhaben Kalita and S. K. Dwivedy	Dynamic analysis of pneumatic artificial muscle (PAM) actuator for rehabilitation with principal parametric resonance condition	Nonlinear Dynamics	2019	97	4	2271	2289
146	Bhaben Kalita and S. K. Dwivedy	Nonlinear dynamics of a parametrically excited pneumatic artificial muscle (PAM) actuator with simultaneous resonance condition	Mechanism and Machine Theory	2019	135		281	297
147	Avilash Sahoo, Santosha K. Dwivedy and P. S. Robi	Advancements in the field of autonomous underwater vehicle	Ocean Engineering	2019	181		145	160
148	Anshul Garg and Santosha Kumar Dwivedy	Nonlinear dynamics of parametrically excited piezoelectric energy harvester with 1: 3 internal resonance	International Journal of Non-Linear Mechanics	2019	111		80	94
149	R. K. Ojha and S. K. Dwivedy	Dynamic Analysis of a Three-Layered Sandwich Plate with Composite Layers and Leptadenia Pyrotechnica Rheological Elastomer-Based Viscoelastic Core	Journal of Vibration Engineering & Technologies	2019			1	13

150	D. K. Biswal, D. Bandopadhya and S. K. Dwivedy	A Non-Linear Dynamic Model of Ionic Polymer-Metal Composite (IPMC) Cantilever Actuator	International Journal of Automotive and Mechanical Engineering	2019	16	1	6332	6347
151	R. K. Ojha and S. K Dwivedy	Analysis of Sandwich Plates with Isotropic Skins and Viscoelastic Core	International Journal of Structural Stability and Dynamics, Dynamics	2019	19	3	1950033	
152	S. Sajith, K.S.R.K. Murthy and P.S. Robi	Mixed mode fatigue crack growth studies in AISI 316 stainless steel	European Journal of Mechanics / A Solids	2020	Vol 80		103898	
153	S. Sajith, K.S.R.K. Murthy and P.S. Robi	Experimental and numerical investigation of mixed mode fatigue crack growth models in aluminum 6061-T6	International Journal of Fatigue	2020	Vol 130		105285	
154	Sanasam Sunderlal Singh, Alika Khare, Shrikrishna N. Joshi	Fabrication of microchannel on polycarbonate below the laser ablation threshold by repeated scan via the second harmonic of Q-switched Nd:YAG laser	SME Journal of Manufacturing Processes	2020	55		359	372
155	Jibin T. Philip, Deepak Kumar, S.N. Joshi, Jose Mathew, Basil Kuriachen	Monitoring of EDM parameters to develop tribo-adaptive Ti6Al4V surfaces through accretion of alloyed matrix	Industrial Lubrication and Tribology	2019	72	3		
156	Sandeep Das, Randhir Kumar Raman, N. Devarani, Shrikrishna N.Joshi	Surface Alloying of Titanium Di-boride (TiB2) and Silicon Carbide (SiC) on Aluminium Al 5052 using Electric Discharge Processing	Procedia Structural Integrity	2019	14		119	126
157	Kashyap, D., Dass, A.K.	Effect of boundary conditions on heat transfer and entropy generation during two-phase mixed convection hybrid Al 2 O 3 - Cu/water nanofluid flow in a cavity	International Journal of Mechanical Sciences	2019	157-158		45	58
158	Kumar, Raushan, and Anoop K. Dass.	A new flux-limiting approach–based kinetic scheme for the Euler equations of gas dynamics	; International Journal for Numerical Methods in Fluids	2019	90.1		22	56

Conference/Workshop/Seminar/Symposia (PERIOD: 1 APRIL 2019 – 31 MARCH 2020)

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1	Khedkar, K., Yadav, S., Ghosh, B., Dalal, A., and Natarajan, G.	Development of Coupled Steady State Solver Using Hybrid Unstructured Grids	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, Roorkee, India	2019		
2	Sarma, B., Dalal, A., and Basu, D. N.	Transient Interfacial Dynamics of Viscous Droplets Impacting on Superhydrophobic Surfaces	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, Roorkee, India	2019		
3	Kataky, P. K., Dalal, A., Biswas, G., and Wang, C-T	Numerical simulation of three-dimensional microbial fuel cell	International Conference on Sustainable Energy and Green Technology, Bangkok, Thailand	2019		
4	Mukesh Kumar, Dhirendra Kumar Verma, Poonam Kumari	The Synthesis, Characterization and performance of Piezoelectric P (VDF-TrFE) Electrospun Nanofibers	, International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 2019), IIT Indore.	2019		
5	Ram Krishna Yadav, Agyapal Singh and Poonam Kumari	Free Vibration Analysis of Elastic Laminated Plate under Cylindrical Bending using Extended Kantorovich Method	4th Indian Conference on Applied Mechanics (INCAM), July 3-5, 2019 at IISc Bangalore	2019		
6	Ehtesham Hussain, Agyapal Singh and poonam kunari	Free Vibration Analysis of Functionally Graded Beam using Extended Kantorovich Method	4th Indian Conference on Applied Mechanics (INCAM), July 3-5, 2019 at IISc Bangalore	2019		
7	Shranish Kar and Poonam Kumari	A 3D Solution for Angle-ply Cylindrical Shell Panel Supported Arbitrarily on its Boundaries using Extended Kantorovich Method	4th Indian Conference on Applied Mechanics (INCAM), July 3-5, 2019 at IISc Bangalore	2019		
8	Shranish KAR, Poonam KUMARI	Three Dimensional Bending Solution Of Cylindrical Shell Panel Having Arbitrary Edge Support Conditions Using Extended Kantorovich Method	10th International Conference on Material for Advanced Technologies, 23 to 28 June, 2019, Marina Bay Sands, Singapore	2019		
9	M. Jana, B. G. Barua and S. M. Hazarika	Design and Development of a Finger Exoskeleton for Motor Rehabilitation using Electromyography Signals.	23rd International Conference on Mechatronics Technology (ICMT), Salerno, Italy.	2019		

10	Sureandhar G, Srinivasan G, Muthukumar P, Senthilmurugan S	Performance evaluation of solar air heater having arc-shaped wire rib with varying roughness height on absorber plate.	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
11	Lakshmi DVN, Muthukumar P	Energy and Environmental Analyses of Active Solar Dryer for Medicinal Herbs Drying.	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
12	Sunku Prasad J, Sayantan Jana, Viswa I, Muthukumar P	Experimental Investigation on Absorption and Desorption characteristics of La0.9Ce0.1Ni5 alloy for Hydrogen Storage Application	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
13	Alok Kumar, Nithin N. Raju, Muthukumar P	Parametric Studies on MmNi4.7Fe0.3 based Reactor with Embedded Cooling Tubes for Hydrogen Storage and Cooling Application.	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
14	Sangjukta Devi, Niranjan Sahoo, Muthukumar P	Effect of Combustion Zone Material on the Thermal Performance of Biogas Fuelled Porous Media Burner: Experimental Studies.	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
15	Mrinal Bhowmik, Anandalakshmi R, Muthukumar P	Modelling and Multi-Objective Optimization of Performance Parameters for Counter Flow Dehumidifier	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		

16	Arun Kumar M. Lav K Kaushik, Muthukumar P	Critical Analysis on Unstable Operation of a Self -aspirated Cook-stove with Porous Radiant Burner	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
17	Pratibha Maurya, Arun Kumar M. Lav K Kaushik, Muthukumar P,	Comparative Performance Assessments of Canister based Methanol Cook-stove with Kerosene Wick Cook-stove for Domestic Cooking Application	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020], February 10-12, 2020 at National Institute of Technology, Rourkela, Odisha, India.	2020		
18	Partha Pratim Kemprai, Ranganayakulu C, Muthukumar P	Numerical and Experimental Investigation in Compact Heat Exchanger Surfaces with Wavy Fins	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee.	2019		
19	Lav K. Kaushik, Gyan S. Sinha, Muthukumar P	Assessment of Waste Cooking Oil Combustion in a Porous Kerosene Pressure Cook-stove (PKPCs).	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee.	2019		
20	Mrinal Bhowmik, M. Joshi, R. Anandalakshmi, Muthukumar P	Performance Investigations on Twist Tape Based U-Tube Solar Evacuated Tube Collector for Humid Subtropical Region.	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee.	2019		
21	Kiran Naik K, Muthukumar P, Mrinal Bhowmi	Performance Assessment and Comparison of Desiccant Coated Heat Exchanger Type and Desiccant Wheel Type Dehumidification systems	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee.	2019		
22	Jasinta Poonam Ekka, Krishnendu Bala, Muthukumar P	Drying Kinetics of Yellow Turmeric in a Solar Dryer with and without Solar Air Collector under Forced Circulation	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), December 28-31, 2019, IIT Roorkee, Roorkee.	2019		

23	Sangjukta Devi, Niranjan Sahoo, Muthukumar P	Impact of preheat zone properties on the flammability limits of crude biogas combustion in a two-layer porous radiant burner	International Conference on Thermo-Fluids And Energy Systems, 27-28th December 2019, Bangalore, India.	2019		
24	Sangjukta Devi, Niranjan Sahoo, Muthukumar P	Experimental analysis of biogas combustion with different foam materials in a porous media burner.	ASME 2019 Gas Turbine India GTIndia2019, December 5-6, 2019, IIT Madras, Chennai, India	2019		
25	Kaushik L K, Arun Kumar M. Muthukumar P	Performance Analysis of a Bio-gas operated Porous Radiant Burner for Domestic Cooking Application	11th International Exergy, Energy and Environment Symposium (IEEES-11), July 14-18, 2019, Chennai, India	2019		
26	Kiran Naik B and Muthukumar P	Parametric Studies and Performance Investigation on Novel Multipurpose Liquid Desiccant Drying/Desalination System	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan.	2019		
27	Mrinal Bhowmi K, Kiran Naik B, Anandalakshmi R, Muthukumar P	Experimental Investigations of the Dehumidifier Performance Evaluation using Aqueous LiBr-HCOOK Blend	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan.	2019		
28	Sunku Prasad J, Sayantan Jana, Muthukumar P	Thermodynamic Studies on Metal Hydride based Tri-generation System for Cooling, Thermal Storage and Thermal Upgradation	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan.	2019		
29	Vigneshwaran K, Gurpreet Singh Sodhi, Muthukumar, P, Senthilmurugan S	concrete based Sensible Heat Storage System: Experimental Investigations. Presented at International Conference on Polygeneration	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan.	2019		
30	Desai F J Atayo A, Muthukumar P, Rahman MM	Experimental Studies on Endothermic Reversible Reaction of Salts for Cooling	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan.	2019		
31	Ankit Agrawal, Divyeshkumar D. Kansagara, Deepak Sharma, and Ujjwal K. Saha	Savonius Wind Turbine Blade Profile Optimization by Coupling CFD Simulations with Simplex Search Technique	ASME 2019 Gas Turbine India Conference, December 5–6, 2019 Chennai, Tamil Nadu, India. Paper No: GTINDIA2019-2442, V002T06A007; 12 pages.	2019		

32	Raktim Biswas Deepak Sharma	A Single-Loop Reliability-based Design Optimization Method Using Iteratively Updating Hessian	EUROGEN 2019, University of Minho, Guimarães, Portugal, September 12 – 14, 2019	2019		
33	Utpal Kiran, Vishal Agrawal, Deepak Sharma and Sachin Singh Gautam	A GPU based acceleration of Finite Element and Isogeometric analysis	Proceedings at the 10th International Conference on Computational Methods (ICCM2019), 9–13 July 2019, Singapore, Eds: G.R. Liu, Fangsen Cui, George Xu Xiangguo, ScienTech Publisher, pp. 641 – 651.	2019	653	663
34	Subhajit Sanfui and Deepak Sharma	Exploiting Symmetry in Elemental Computation and Assembly Stage of GPU-Accelerated FEA	Proceedings at the 10th International Conference on Computational Methods (ICCM2019), 9–13 July 2019, Singapore, Eds: G.R. Liu, Fangsen Cui, George Xu Xiangguo, ScienTech Publisher, pp. 641 – 651.	2019	641	651
35	A. Mukherjee, D. N. Basu and P. K. Mondal	Simulation of Periodic Bubble Nucleation, Growth and Departure in Nucleate Pool Boiling	25th National and 3rd International ISHMTASTFE Heat and Mass Transfer Conference	2019	527	
36	S. Shyam, B. Mehta, P. K. Mondal and M. Asfer	Internal Flow Dynamics of Ferrofluid Droplet Under the Influence of Magnetic Field	25th National and 3rd International ISHMTASTFE Heat and Mass Transfer Conference	2019	769	
37	S. H. Mullick, P. Kaushik, P. K. Mondal, P. K. Kundu	Entropy Generation in a Viscoelastic Fluid Squeezed and Extruded Between Two Parallel Plates	25th National and 3rd International ISHMTASTFE Heat and Mass Transfer Conference	2019	699	
38	G. Kumar, S. Shyam, P. K. Mondal	Impact dynamics of a viscoelastic ferrofluid droplet under the influence of magnetic field	International Conference on Recent Developments in Mechanical Engineering	2020	146	
39	S. Pawar, D. Ray, S.D. Kore, and A. Nandy	Comparison of Two Different Simulation Methods for The Finite Element Analysis of Electromagnetic Forming and Perforation (EMFP) of Tubes	International conference on Industry 4.0 and Advanced Manufacturing	2019		

40	S. Pawar, S.D. Kore, and A. Nandy	Loose Coupled Simulation Method for FEA of Electromagnetic Forming of Muffler	7th International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering, AFTMME	2019		
41	S. Pawar, S.D. Kore, and A. Nandy	Recent Advancement in Electromagnetic Forming Processes	1st International Conference on Recent Developments in Mechanical Engineering, ICRAME	2020		
42	Ashutosh Kumar, S K Kakoty	Analysis of Static and Dynamic Performance Parameters of Two-Lobe Journal Bearing Operating With Non-Newtonian Lubricant	ASME Gas Turbine India Conference 2019	2019	GTINDIA2019-2412, V001T05A005	
43	K K Basumatary, K Kalita, S K Kakoty, and S D Garvey	Vibration mitigation of rotors suspended on low-cost hybrid gas foil bearing	ASME Gas Turbine India Conference 2019	2019	GTINDIA2019-2539, V001T05A009	
44	K K Basumatary, S K Kakoty, M Ghosh	Effect of sinusoidal and non-sinusoidal periodic forces on the stability of Gas Foil Bearing	6th National Symposium on Rotor Dynamics, CSIR-National Aerospace Laboratories, Bangalore	2019	Paper Id- 25	
45	Jasinta Poonam Ekka, Muthukumar P	Determination of Heat Transfer Coefficient and Drying Kinetics of Red chilli Dried in a Mixed Mode Forced Convection Solar dryer.	International Conference on Polygeneration (ICP-2019), May 15-17, Kyushu University, Japan	2019		
46	S. Devi, N. Sahoo and P. Muthukumar	Effect of combustion zone material on the thermal performance of biogas fueled porous media burner: Experimental studies	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES - 2020], NIT Rourkela, India, 10-12 February	2020		
47	S. K. Hotta, A. K. Rout and N. Sahoo	Effect of compression ratio on the thermal efficiency and cycle by cycle variation of a raw biogas operated spark ignition engine, International Conference on Thermofluids	KIIT University, Bhubaneswar, India, 23-24 January	2020		

48	O. Siram and N. Sahoo	Experimental study on horizontal axis wind turbine wakes for wind farm modelling	Proceedings of 25TH National and 3RD International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, India, 28-31 December	2019		
49	A. K. Rout, N. Sahoo, P. Kalita and V. Kulkarni	Design and installation of a shock tube for ignition delay based studies	Proceedings of 25TH National and 3RD International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, India, 28-31 December	2019		
50	A. Kamal, V. Kulkarni and N. Sahoo	A new calibration approach for prediction of aerodynamic coefficients for hypersonic applications	Proceedings of 25TH National and 3RD International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, India, 28-31 December	2019		
51	S. Devi, N. Sahoo and P. Muthukumar	Impact of preheat zone properties on the flammability limits of crude biogas combustion in a two-layer porous radiant burner	International Conference on Thermo-Fluids and Energy Systems, Bangalore, Karnataka, India, 27-28 December	2019		
52	O. Siram and N. Sahoo	Characterizing the helical vortex frequency of HAWT	Proceedings of 7TH International Conference on Advances in Energy Research, IIT Bombay, Mumbai, India, 10-12 December	2019		
53	S. K. Barik, R.G. Narayanan and N. Sahoo	Prediction of high-velocity forming behavior of AA 5052-H32 pre-strained sheet	Proceedings of 64TH Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM 2019), IIT Bhubaneswar, 10-12 December	2019		
54	A. K. Rout, S. K. Hotta, N. Sahoo, P. Kalita and V. Kulkarni	Validation for fast response characteristics of a coaxial thermal probe in an IC engine bases experiment	Proceedings of 7TH International Conference on Advances in Energy Research, IIT Bombay, Mumbai, India, 10-12 December	2019		
55	K. K. Selvakumar, V. Kulkarni and N. Sahoo	Investigation on flow characteristics and performance of a vertical axis wind turbine with deflector plates	Proceedings of ASME Gas Turbine India Conference, IIT Madras, Chennai, India, 5-6 December	2019		
56	O. Siram and N. Sahoo	Near wake regime study on wind turbine blade tip vortex	Proceedings of ASME Gas Turbine India Conference, IIT Madras, Chennai, India. 5-6 December	2019		

57	A. K. Rout, N. Sahoo, P. Kalita and V. Kulkarni	Transient response characteristics of a surface junction probe	Proceedings of ASME Gas Turbine India Conference, IIT Madras, Chennai, India, 5-6 December	2019		
58	A. Kamal, G. C. Das, V. Kulkarni and N. Sahoo	Comparative study of force prediction techniques using multi-component accelerometer force balance for high enthalpy ground testing	Proceedings of ASME Gas Turbine India Conference, IIT Madras, Chennai, India, 5-6 December	2019		
59	S. Devi, N. Sahoo and P. Muthukumar	Experimental analysis of biogas combustion with different foam materials in a porous media burner	Proceedings of ASME Gas Turbine India Conference, IIT Madras, Chennai, India, 5-6 December	2019		
60	A. K. Rout, N. Sahoo and P. Kalita	Coaxial thermal probe as a heat flux sensor: An analytical, numerical and experimental approach	Proceedings of International Conference on Advances in Mechanical Processing and Design, KIIT University, Bhubaneswar, India, 18-20 October	2019		
61	O. Siram and N. Sahoo	Vortex stability analysis of horizontal axis wind turbine wake	All India Seminar on Scope and Opportunity of Small Hydro and Wind Power in North-East India, NIT Mizoram, India, 02-03 August	2019		
62	A. K. Rout, N. Sahoo and P. Kalita	Characterization of high frequency thermal sensors for transient temperature measurement	Proceedings of International Conference on Advances in materials and Manufacturing Engineering, KIIT University, Bhubaneswar, India, 15-17 March	2019		
63	R. Umesh, B. S. Sikarwar, and Sachin S. Gautam	Thermal Management of The Lithium-Ion Battery System for Electric Vehicles	Indo-Japan 2nd Indo Japan Bilateral Symposium on Futuristic Materials and Manufacturing for Next Generation Electric Vehicles and High Speed Railway, IIT Madras, Chennai,	2020		
64	Gireesh Sharma N., A. George, S. P. Pandian, S. Sundararajan, Sachin S. Gautam	A multiphysics simulation of thermo elastic dynamic damping of a vibratory gyroscope resonator for space application	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019), IIT Mandi,	2019		

65	V. Agrawal, T. X. Duong, R. A. Sauer, and Sachin S. Gautam,	An Accurate and Efficient Varying-Order NURBS Discretization Method for Isogeometric Contact Analysis	VII International Conference on Isogeometric Analysis (IGA 2019), Munich, Germany,	2019		
66	Abhijeet, R. Thakur, and Sachin S. Gautam,	Investigation of Some Recently Proposed Explicit Time Integration Schemes For Nonlinear Problems,	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019), IIT Mandi,	2019		
67	J. Mahesh Kumar and Sachin S. Gautam	Performance Evaluation of Implicit Composite Time Integration Schemes For Dynamic Problems,	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019), IIT Mandi,	2019		
68	S. Gouravaraju, V. Agrawal, R. A. Sauer, and Sachin S. Gautam	Numerical Analysis of Gecko Spatula Peeling Using Adhesive Friction Model	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019), IIT Mandi,	2019		
69	R. Umesh, A. Goyal, B. S. Sikarwar and Sachin S. Gautam,	Parametric Study of Lithium-Ion Battery Module For Electric Vehicle Application	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019), IIT Mandi,	2019		
70	V. Agrawal, S. Gouravaraju and Sachin S. Gautam,	Application of Varying Order B-Splines Discretization For Accurate Peeling Computations	10th international Conference on Computational Methods (ICCM2019), Nanyang Technological University, Singapore	2019		
71	V. Agrawal, S. Gouravaraju, R. A. Sauer, and Sachin S. Gautam,	A Varying-Order B-Splines Discretization Method For Peeling Computations,	VI. International Conference on Computational Contact Mechanics - An ECCOMAS Thematic Conference, Leibnizhaus Hannover, Germany,	2019		
72	U. Kiran, V. Agrawal, D. Sharma and Sachin S. Gautam	A GPU Based Acceleration of Finite Element And Isogeometric Analysis,	10th International Conference on Computational Methods (ICCM2019), Nanyang Technological University, Singapore,	2019		
73	S. Gouravaraju and Sachin S. Gautam,	Investigating The Influence of Geometrical And Material Parameters on Peeling Behaviour of A Gecko Spatula,	International Conference on Applied Mechanical Engineering Research (IC-AMER2019), NIT Warangal, India,	2019		

74	V. Agrawal and Sachin S. Gautam	Investigating The Influence of Higher-order NURBS Discretization on Contact Force Oscillation for Large Deformation Contact Using Isogeometric Analysis,	International Conference on Applied Mechanical Engineering Research (IC-AMER2019), NIT Warangal, India,	2019		
75	A. Raj, A. Ch. Borsaikia and U.S. Dixit, ,	Finite element modeling of autoclave aerated concrete (AAC) masonry for estimation of strength	6th International Conference on Production & Industrial Engineering (CPIE 2019), June 8-10, Dr B R Ambedkar National Institute of Technology Jalandhar.			
76	A. Tripathi, R. Ganesh Narayanan and U.S. Dixit,	Implementation of yield criteria in ABAQUS for simulations of deep drawing: a review and preliminary results,	6th International Conference on Production & Industrial Engineering (CPIE 2019), June 8-10, Dr B R Ambedkar National Institute of Technology Jalandhar.			
77	N. Bhardwaj, R. Ganesh Narayanan and U.S. Dixit	Effect of lubrication on energy requirement and joint properties during FSSW of AA5052-H32 aluminium alloy	6th International Conference on Production & Industrial Engineering (CPIE 2019), June 8-10, Dr B R Ambedkar National Institute of Technology Jalandhar.			
78	P.K. Bannaravuri, A.K. Birru and U.S. Dixit	Effect of laser surface melting on the surface integrity of aluminum composites	6th International Conference on Production & Industrial Engineering (CPIE 2019), June 8-10, Dr B R Ambedkar National Institute of Technology Jalandhar.			
79	K. Chatterjee, J. Zhang and U.S. Dixit	A framework for enhancing machining performance using big research data analytics	40th MATADOR International Conference on Advanced Manufacturing and Design, July 8-10, 2019, Hangzhou, China.			
80	Chu X, Zhang J, Dixit U.S., Gu P.	A precise identification and matching method for customer needs based on sales data.	Proceedings of the International Conference of Mechanical Design & The 20th Mechanical Design Biennial Conference, August 12-14, Huzhou, Zhejiang, China. (Published in Advances in Mechanical Design, edited by J. Tan, Springer 2020).			

81	A. Raj, A. Ch Borsaikia and U.S. Dixit	Physical and mechanical properties of Autoclaved Aerated Concrete (AAC) block used in the building wall system: A review	7th International and 9th National Conference on Advancement and Futuristic Trends in Mechanical and Materials Engineering, AFTME'19, December 5-7, 2019, IIT Ropar			
82	F. Sharma and U.S. Dixit	Cost comparison of additive manufacturing with traditional manufacturing in the presence of uncertainties	7th International and 9th National Conference on Advancement and Futuristic Trends in Mechanical and Materials Engineering, AFTME'19, December 5-7, 2019, IIT Ropar			
83	Sridhar P.V.S.S., Biswas Pankaj, Mahanta Pinakeshwar	Influence of Welding Current on Bead profile and Mechanical properties of Double sided submerged arc welding of AISI 304 Austenitic stainless steel,	ICMMSE-2019, August 16-17, CMR Institute of Technology, Hyderabad.			
84	Pardeep Pankaj, Tiwari Avinish and Biswas Pankaj	Influence of tool traverse speed on the characteristics of dissimilar friction stir welded DH36 shipbuilding steel-mild steel,	International Conference on Advanced Materials and Processes for Defence Applications, ADMAT-2019, Sept. 23-25, Defence Metallurgical Research Laboratory (DMRL), Hyderabad.			
85	Sanjay Raj, Pardeep Pankaj, and Pankaj Biswas	Microstructure and Mechanical Characterization of Friction Stir Welded Inconel 718 Alloy,	International Conference on Recent Developments in Mechanical Engineering| ICRAME 2020, 07-09 February 2020, NIT Silchar, India.			
86	Dhara L. N., Pankaj P., Biswas P.,	Influence of Heat Input on Weld Bead Geometry in Metal Inert Gas Welded Thick P91 Steel	International Conference on Recent Developments in Mechanical Engineering| ICRAME 2020, 07-09 February 2020, NIT Silchar, India.			
87	Pardeep Pankaj, Abhishek Bhardwaj, Avinish Tiwari, Lakshmi Narayan Dhara and Pankaj Biswas,	Numerical study on Material Flow Behaviour in Friction Stir Welding of Low Carbon Steel,	International Conference on Recent Developments in Mechanical Engineering| ICRAME 2020, 07-09 February 2020, NIT Silchar, India.			

88	Saurav Suman, Biswas Pankaj, Basil Kuriachen and Abhijit Sinha	Thermo-mechanical study of single and multi-pass welding of CSEF steel for residual stresses and deformations considering solid state phase transformation,	2nd International Conference on Recent Advances in Materials & Manufacturing Technologies, IMMT 2019, Dubai, United Arab Emirates., 20-22 November, 2019, BITS Pilani Dubai Campus.			
89	Saurav Suman, Pankaj Biswas, S. K. Patel, V. P. Singh, Akhileshwar Nirala, Basil Kuriachen,	Measurement of Residual Stresses in Submerged Arc Welded P91 Steel Using Surface Deformation,	ICEMT-2019, International Conference on Mechanical and Energy Technologies-2019, Galgotias College of Engineering and Technology, Noida, India.			
90	S. Kirtania and D. Chakraborty	Finite Element based Studies on Elastic Properties of Carbon Nanotube-Reinforced Metal Matrix Composites	International Conference on Advancements in Mechanical Engineering(ICAME 2020), Aliah University, Kolkata, 16-18 January 2020			
91	Karunakaran, K. P., Seema Negi, Arun Nambolan, Ashik Patel, Yogesh Patil, Milan Pandya, Sajan Kapil, Dmitriy Trushnikov, Michael Sealy, and Alain Bernard.	Path Planning Challenges of HED Beams	IOP Conference Series: Materials Science and Engineering, 759 (1)	2020	12012	
92	Ranjeet Kumar Bhagchandani, Rohan Ghodke, R Manivannan, Seema Negi, Sajan Kapil, KP Karunakaran	Characterization of Rapid Foam Castings Produced by Different Mold Making Processes	Advances in Additive Manufacturing and Joining, Springer, Singapore	2020	169	177
93	Seema Negi, Sajan Kapil, Arun Sharma, Priyanka Choudhary, Parag Bhargava, KP Karunakaran	Retrofitment of Laser Cladding System with CNC Machine for Hybrid Layer Manufacturing	Advances in Additive Manufacturing and Joining, Springer, Singapore	2020	47	59
94	Agrawal A, Kansagara DD, Sharma D, and Saha UK	Savonius wind turbine blade profile optimization by coupling CFD simulations with simplex search technique, Paper No. GTIndia2019-2442	ASME 2019 Gas Turbine India Conference, December 05 – 06, Chennai, India.	2019		

95	Alom N, and Saha UK	Determining the optimal location of vent augmenters in an elliptical-bladed Savonius rotor, Paper No. GTIndia2019-2344	ASME 2019 Gas Turbine India Conference, December 05 – 06, Chennai, India.	2019		
96	Alom N, Das R, and Saha UK	Optimization of aerodynamic parameters of an elliptical-Bladed Savonius wind rotor using multi-objective genetic algorithm, Paper No. GTIndia2019-2346,	ASME 2019 Gas Turbine India Conference, December 05 – 06, Chennai, India.	2019		
97	Alom N, Kumar N, and Saha UK	Analyzing the effect of shaft and end-plates of a newly developed elliptical-bladed Savonius rotor from wind tunnel tests, Paper No. OMAE2019-95570	ASME 38th International Conference on Ocean, Offshore and Arctic Engineering, June 09–14, Glasgow, Scotland, UK.	2019		
98	R S Reddy Rajidi, A Gupta and S Panda	The effective properties of electro-viscoelastic composite using energy method	Materials Today: Proceedings	2019	4164	4175
99	R S Reddy and S Panda	The energy-based method for effective dynamic properties of viscoelastic composite	Materials Today: Proceedings	2019	4910	4200
100	A Gupta, R S Reddy, S Panda and N Kumar	Damping treatment of beam with unconstrained/constrained 1-3 smart viscoelastic composite layer	Materials Today: Proceedings	2020		
101	A Gupta, S Panda and R S Reddy	Design of graded laminated composite beam under moving load	Materials Today: Proceedings	2020		
102	Atul K Soti, Ashoke De	Vortex-Induced Vibrations of a Confined Circular Cylinder	Proceedings of the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference	2019		
103	Nelson Muthu	Finite element modelling of Hyperelastic material	Fourth National Finite Element Developers (NAFED)/FEAST Users Meet 2019	2019		
104	Saurav K.Dutta, B. Sandeep Reddy, S.K. Dwivedy	Design of a Two Degrees of Freedom Actuator for Rehabilitation Robotic Applications	iNaCoMM 2019	2019		
105	M.K. Hussain and K.S.R.K. Murth	NSIFs of 2D elastic bodies with straight and curved sharp V-notche	First International Conference on Manufacturing, Material Science and Engineering 2019 (ICMMSE 2019),	2019		

106	M.K. Hussain and K.S.R.K. Murth	Calculation of NSIFs and shape factors of four-point bend specimens containing sharp V-notches	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019),	2019		
107	Shukla, Shiv Sahaya, and K. S. R. K. Murthy	Numerical analysis of a semi-elliptical surface cracked plate under tension	First International Conference on Manufacturing, Material Science and Engineering 2019 (ICMMSE 2019),	2019		
108	S Sajith, KSRK Murthy, PS Robi	Mixed mode fatigue crack growth studies of crack emanating from circular hole	First International Conference on Manufacturing, Material Science and Engineering 2019 (ICMMSE 2019),	2019		
109	Kashyap, D., Dass, A.K.,	Entropy Generation Analysis of Mixed Convection Flow in a Nanofluid Filled Porous Cavity Using a Two-Component Lattice Boltzmann Method.	Proceedings of the ASME 2019 Gas Turbine India Conference. Volume 1: Compressors, Fans, and Pumps; Turbines; Heat Transfer; Structures and Dynamics. Chennai, Tamil Nadu, India. December 5-6, V001T03A007. ASME	2019		

Book, Book Chapter, etc. (PERIOD: 1 APRIL 2019 – 31 MARCH 2020)

Total No. of Books published: 5 No.s

Total No. of Book Chapters published: 52

Format for submission of Book

Sl. No.	Name of Author/s	Name of Book	Publisher	Volume and Issue No. (If any)	Total Page No.	ISBN	Year of Publication
1	Gautam Biswas, Amaresh Dalal and Vijay K. Dhir	Fundamentals of Convective Heat Transfer	CRC Press (Taylor and Francis Group)			ISBN 97811 38103 290	2019
2	U.S. Dixit, S.M. Kamal and R. Shufen, ,	Autofrettage Processes: Technology and Modelling	CRC Press (Taylor and Francis Group)		276	978-11383 88543	2019
3	U Biswas, A Banerjee, S Pal, A Biswas, D Sarkar, S Haldar (Editors)	Advances in Computer, Communication and Control - Proceedings of ETES-2018	Springer Singapore	Vol. 41	563	ISBN: 978-981-13-3122-0	2019
4	M.K. Hussain and K.S.R.K. Murthy	Advances in Materials and Manufacturing Engineering, Lecture Notes in Mechanical Engineering	Springer Singapore			ISBN 978-981-15-1307-7	2019
5	R. Ganesh Narayanan, Shrikrishna N. Joshi, Uday S. Dixit	Advances in Computational Methods in Manufacturing	Springer Nature Singapore			ISBN 978-981-329-072-3	2019

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Sl. No.	Name of Author/s	Name of Paper	Name of Book	Publisher	Volume and Issue	Page No.	ISBN	Year and

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1	Pandey, V., Biswas, G., Dalal, A	Study of Pool Boiling Through Numerical Approach	In: Runchal, A. (ed), 50 Years of CFD in Engineering Sciences. A Commemorative Volume in Memory of D. Brian Spalding	Springer		607 – 644	ISBN 978-981-15-2669-5	2020
2	Deka, H., Biswas, G., Dalal, A.	A Coupled Level Set and Volume-of-Fluid Method for Modeling Two-Phase Flows	In: Biwasl, B., Sarkar, B., Mahanta, P. (eds) Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering	Springer			ISBN 978-981-15-0123-4	2020
3	Behera S., Kumari P	Free Vibration Analysis of Levy-Type Smart Hybrid Plates Using Three-Dimensional Extended Kantorovich Method	Structural Integrity Assessment. Lecture Notes in Mechanical Engineering	Springer			ISBN978-981-13-8766-1	2020
4	Devarshi Kashyap, Vaibhav Jaiswal, Subramani Kanagaraj	Biomaterials for Biomedical Devices and Implants	Advances in Sustainable Polymers	Springer, Singapore		85-107	ISBN 978-981-329-804-0	2019
5	Bhowmick A., Saharia S., Hazarika S.M.	Encoding High-Order Statistics in VLAD for Scalable Image Retrieval.	Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science.	Springer	11941		ISBN 978-3-030-34868-7	Nov-19
6	Naosekpam V., Bhowmick A., Hazarika S.M.	Correspondence for Non-parametric Scene Parsing of Natural Images	Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science.	Springer	11941		ISBN 978-3-030-34868-7	Nov-19
7	Mandloi A., Jaisingh H.R., Hazarika S.M.	Perception Based Navigation for Autonomous Ground Vehicles.	Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science.	Springer	11942		ISBN 978-3-030-34871-7	Nov-19
8	Talukdar U., Barua R., Hazarika S.M.	Augmenting a Description Logic with Probability for	Smart Computing Paradigms: New Progresses and	Springer, Singapore	767		ISBN 978-981-13-9679-3	Dec-19

		Motion Patterns Within QSTR.	Challenges. Advances in Intelligent Systems and Computing,					
9	K. K. Selvakumar, N. Sahoo and B. Selvaraj	Introduction to basics of stress (Chapter 1)	Applications and Techniques for Experimental Stress Analysis, A volume in the Advances in Chemical and Materials Engineering (ACME) Book Series	IGI Global Publisher (USA)		Jan-21	ISSN 2327-5448, EISSN 2327-5456	2020
10	K. K. Selvakumar, P. S. Balaji and N. Sahoo	Introduction to stress-strain relationship and its measurement techniques (Chapter 2)	Applications and Techniques for Experimental Stress Analysis, A volume in the Advances in Chemical and Materials Engineering (ACME) Book Series	IGI Global Publisher (USA)		22-38	ISSN 2327-5448, EISSN 2327-5456	2020
11	A. K. Rout, N. Sahoo and V. Kulkarni	An overview of stress and strain measurement technique (Chapter 3)	Applications and Techniques for Experimental Stress Analysis, A volume in the Advances in Chemical and Materials Engineering (ACME) Book Series	IGI Global Publisher (USA)		39-56	ISSN 2327-5448, EISSN 2327-5456	2020
12	A. Kamal, V. Kulkarni and N. Sahoo	Measurement of strain using strain gauge and piezoelectric sensors (Chapter 6)	Applications and Techniques for Experimental Stress Analysis, A volume in the Advances in Chemical and Materials Engineering (ACME) Book Series	IGI Global Publisher (USA)		91-101	ISSN 2327-5448, EISSN 2327-5456	2020
13	S. K. Barik, N. Sahoo and N. Rajaura	Deformation assessment of stainless steel sheet using a shock tube (Chapter 9)	Applications and Techniques for Experimental Stress Analysis, A volume in the Advances in Chemical and Materials	IGI Global Publisher (USA)		134-152	ISSN 2327-5448, EISSN 2327-5456	2020

			Engineering (ACME) Book Series					
14	S. K. Barik, R. G. Narayanan and N. Sahoo	Experimental investigation on the forming of AA 5052-H32 sheet using a rigid body based impact in a shock tube	Advances in Forming, Machining and Automation	Springer		79-90		2019
15	S. Brahmachary, G. Natarajan, V. Kulkarni, and N. Sahoo	A sharp-interface Immersed Boundary method for high-speed compressible flows	Immersed Boundary Methods	Springer Nature	Singapore			2020
16	S. Brahmachary, G. Natarajan, V. Kulkarni, N. Sahoo and S. R. Nanda	Application of greedy and heuristic algorithm based optimisation methods towards aerodynamic shape optimization	Soft Computing for Problem Solving - Advances in Intelligent Systems and Computing	Springer	Singapore	937-946		2019
17	S. Shyam, P. K. Mondal and B. Mehta	Thermal energy management strategy of the photovoltaic cell using Ferromagnetohydrodynamics	Energy Systems, Drives and Automations	Springer	Singapore	22-32		
18	V. Agrawal ad Sachin S Gautam	Investigation of Contact Pressure Oscillations with Different Segment-to-Segment Based Isogeometric Contact Formulations	Proceedings of the 1st International Conference on Numerical Modelling in Engineering. NME 2018.	Springer	Singapore	373-379	978-981-13-2273-0	2019
19	S. Gouravaraju and Sachin S. Gautam	Nonlinear Finite Element Analysis of A Gecko Spatula Adhesion on A Rigid Substrate	Advances in Interdisciplinary Engineering	Springer	Singapore	471-479	978-981-13-6577-5	2019
20	A. Sahu, R. K. Thakur, V. Agarwal and Sachin S. Gautam	A Comparative Study of Five Explicit Time Integration Algorithms for Non-linear Dynamic Systems	Advances in Engineering Design	Springer	Singapore	675-683	978-981-13-6468-6	2019
21	V. Agrawal ad Sachin S Gautam	An Isogeometric-Based Study of Mortar Contact Algorithm for Frictionless Sliding	Advances in Engineering Design	Springer	Singapore	655-662	978-981-13-6468-6	2019
22	D. Bora, M. Kumar and Sachin S Gautam	Continuum Damage Mechanics Based Simulation of Ductile Fracture of Cylindrical Tubes	Advances in Engineering Design	Springer	Singapore	65-71	978-981-13-6468-6	2019
23	A. Noor, S. Gouravaraju and Sachin S. Gautam	Reduced-Order Finite Element Analysis of Rough Surface Contact	Advances in Computational Methods in Manufacturing	Springer	Singapore	819-827	978-981-32-9072-3	2019

		Using Reduced Integration Elements						
24	A. Noor, S. Gouravaraju and Sachin S. Gautam	Numerical Analysis of Erosion of Rough Surface.	Advances in Computational Methods in Manufacturing	Springer	Singapore	851-860	978-981-32-9072-3	2019
25	V. Agrawal ad Sachin S Gautam	Investigating the Influence of Higher-Order NURBS Discretization on Contact Force Oscillation for Large Deformation Contact Using Isogeometric Analysis	Advances in Applied Mechanical Engineering	Springer	Singapore	343-350	978-981-15-1201-8	2020
26	S. Gouravaraju and Sachin S. Gautam	Investigating the Influence of Geometrical and Material Parameters on Peeling Behaviour of a Gecko Spatula	Advances in Applied Mechanical Engineering	Springer	Singapore	373-379	978-981-15-1201-8	2020
27	Gireesh Sharma N., A. George, S. P. Pandian, S. Sundararajan, Sachin S. Gautam	Design of inertial class gyroscope resonator with ultra high quality factor for interplanetary space missions	Advances in Mechanical Engineering,	Springer	Singapore	1071-1084	978-981-15-0124-1	2020
28	Arun C. Borsaikia, Anup Kumar, Amit Raj, Uday S. Dixit,	Development of Epoxy Based Composites Using Bamboo and Waste Metal Chips	In: Hashmi, Saleem and Choudhury, Imtiaz Ahmed (eds.).Encyclopedia of Renewable and Sustainable Materials, Vol. 1, pp. 181–195. Oxford: Elsevier. 2020, https://doi.org/10.1016/B978-0-12-803581-8.11172-5. ISBN 9780128035818 , http://www.sciencedirect.com/science/article/pii/B9780128035818111725)	Elsevier	Oxford	181-195	####	
29	Chu X, Zhang J, Dixit U.S., Gu P.	A precise identification and matching method for customer needs based on sales data	Advances in Mechanical Design, Ed. J. Tan	Springer	Singapore	102-112	978-981-32-9940-5	
30	Sagar Pawar, Sachin D Kore, Arup Nandy	Magnetic Pulse Forming and Punching of Al Tubes—A Novel Technique for	Advances in Forming, Machining and Automation	Springer	Singapore	67-77	978-981-32-9417-2	2019

		Forming and Perforation of Tubes						
31	Pardeep Pankaj, Avinish Tiwari and Biswas Pankaj,	Transient Thermal Analysis of CO2 Laser Welding of AISI 304 Stainless Steel Thin Plates,	Manufacturing Engineering,	Springer	Singapore	49-65	DOI https://doi.org/10.1007/978-981-13-6287-3_4,	2019
32	Pardeep Pankaj, Avinish Tiwari and Biswas Pankaj,	Dissimilar Friction stir welding of DH36 shipbuilding steel and mild steel butt joints,	Advances in Additive Manufacturing and Joining,	Springer	Singapore		DOI: 978-981-32-9432-5, 486060_1_En, (35),	2019
33	Sridhar P. V. S. S., Vishnu Nair, Biswas Pankaj, and Mahanta Pinakeswar,	Thermomechanical analyses of Single Sided Single pass Submerged arc welding of AISI 304 Austenitic Stainless Steel,	Advances in Computational Methods in Manufacturing,	Springer	Singapore		978-981-32-9071-6, 470361_1_En, (87), 2019.	2019
34	Sridhar P.V.S.S., Pal K., Chakraborthy K. B., Bhattacharjee R., Majumder S., Biswas Pankaj, Mahanta P.,	Experimental Investigation and Mechanical Characterization of Double Sided Submerged Arc Welding of AISI 304 Austenitic Stainless Steel,	Advances in Additive Manufacturing and Joining,	Springer,	Singapore		978-981-32-9432-5, 486060_1_En, (60), 2019.	2019
35	Saurav Suman, Avinish Tiwari, Pardeep Pankaj, Biswas Pankaj,	Modelling of welding sequences for minimization of weld induced distortions and residual stresses,	Advances in Additive Manufacturing and Joining,	Springer			978-981-32-9432-5, 486060_1_En, (53)	2019
36	Saurav Suman, Pardeep Pankaj, Avinish Tiwari, Biswas Pankaj,	Effect of pre and post welding processes on the distortion pattern in a SAW welded butt joint of P91 steel plate,	Advances in Additive Manufacturing and Joining,	Springer			978-981-32-9432-5, 486060_1_En, (55)	2019
37	Saurav Suman and Biswas Pankaj,	Numerical study of welding distortion in SAW welded creep strength enhanced ferrite steel joint,	Advances in Mechanical Engineering	Springer			DOI: 10.1007/978-981-15-0124-1_57,	2020
38	K K Basumatary, S K Kakoty and K Kalita	Stability Analysis of a Rigid Rotor supported on Gas Foil Bearings under Different Loading Conditions	Machines, Mechanism and Robotics. Lecture Notes in Mechanical Engineering	Springer	Singapore		ISBN(Online) 978-981-10-8597-0, ISBN(Print) 978-981-10-8596-3,	2019

39	S. Mohanty and S. K. Dwivedy	Active Vibration Absorber for a Nonlinear System with Time-Delay Acceleration Feedback for Superharmonic and Subharmonic Resonance Conditions,	Machines, Mechanism and Robotics. Lecture Notes in Mechanical Engineering	Springer	Singapore		DOI: https://doi.org/10.1007/978-981-10-8597-0_58	2019
40	Sanchit Jhunjhunwala, Jyotindra Narayan, Santosha Kumar Dwivedy	Design and Modeling of a Novel Mechanized Injection Platform	Proceedings of the Advances in Robotics	ACM			https://doi.org/10.1145/3352593.3352607	2019
41	Bhaben Kalita, SK Dwivedy	Forced Vibration Analysis of a Silk Fibre Embedded Pneumatic Artificial Muscle	RITA 2018. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-13-8323-6_24	2020
42	Saurav Kumar Dutta, Annem Narayana Reddy, Santosha Kumar Dwivedy	Direct and Inverse Problems in Force Sensing of Elastic Bodies	Emerging Trends in Mechanical Engineering. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-32-9931-3_34	2020
43	S Mohanty, S Sikder, SK Dwivedy	Non-linear Analysis of Rotational Inertial Double-Tuned Mass Damper by Harmonic Balance Method	Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-15-0124-1_105	2020
44	S Mohanty, SK Dwivedy	Active Nonlinear Vibration Absorber for a Harmonically Excited Beam System	Nonlinear Dynamics and Control	Springer	Cham		https://doi.org/10.1007/978-3-030-34747-5_1	2020
45	9. Mrinal Gupta, Jyotindra Narayan, SK Dwivedy	Modeling of a Novel Lower Limb Exoskeleton System for Paraplegic Patients	Advances in Fluid Mechanics and Solid Mechanics. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-15-0772-4_18	2020
46	Sanghamitra Das, Shrikrishna N. Joshi	Thermal Modeling and Simulation of Crater Generation on Wire Electrode During Wire EDM Operation.	Advances in Simulation, Product Design and Development. Lecture Notes on Multidisciplinary Industrial Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-32-9487-5_10	2019

47	Upasana Sarma, Shrikrishna N. Joshi	Two-Dimensional Numerical Investigation on the Effect of Laser Parameters on Laser Indirect Machining of Glass	Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-15-0124-1_31	2020
48	Upasana Sarma, Shrikrishna N. Joshi	Effect of Laser Parameters on Laser-Induced Plasma-Assisted Ablation (LIPAA) of Glass	Advances in Unconventional Machining and Composites. Lecture Notes on Multidisciplinary Industrial Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-32-9471-4_6	2019
49	Jitender Kumar, Sanghamitra Das, Shrikrishna N. Joshi	Three-Dimensional Numerical Modelling of Temperature Profiles on the Wire Electrode During Wire Electric Discharge Machining Process	Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-15-0124-1_32	2020
50	Gururaj Bolar, Shrikrishna N. Joshi	An Experimental Investigation on Productivity and Product Quality During Thin-Wall Machining of Aluminum Alloy 2024-T351	Advances in Forming, Machining and Automation. Lecture Notes on Multidisciplinary Industrial Engineering.	Springer	Singapore		https://doi.org/10.1007/978-981-32-9417-2_31	2019
51	Vishal K. Singh, Shrikrishna N. Joshi	Computation of End-Cutting-Edge Wear of Single-Point Cutting Tool Using Image Processing	Advances in Computational Methods in Manufacturing. Lecture Notes on Multidisciplinary Industrial Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-32-9072-3_53	2019
52	Borad M. Barkachary, Shrikrishna N. Joshi	Numerical Simulation and Experimental Validation of Nanoindentation of Silicon Using Finite Element Method	Advances in Computational Methods in Manufacturing. Lecture Notes on Multidisciplinary Industrial Engineering	Springer	Singapore		https://doi.org/10.1007/978-981-32-9072-3_72	2019
53	Kashyap, D., Dass, A.K.	Analysis of Heat Transfer and Entropy Generation During Natural Convection in a Cu–Water Nanofluid-Filled Porous Cavity for Different Thermal Boundary Conditions	Advances in Energy Research, Vol. 1. Springer Proceedings in Energy.	Springer	Singapore			2020

10. Conferences/Workshops/Symposia Attended: International, National

Name of Faculty	Name of Conf./Workshop	Place	Date	International/ National
Amaresh Dalal	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conferenc	IIT Roorkee	28-31 December, 2019	National
Amaresh Dalal	International Conference on Sustainable Energy and Green Technology	Ho Chi Minh City, Bangkok	13-16 December, 2019	International
Poonam Kumari	10th International Conference on Material for Advanced Technologies, 23 to 28 June, 2019, Marina Bay Sands, Singapore	Marina Bay Sands, Singapore	23-28 June, 2019	International
P Muthukumar	Urjavaran 2020	IIT Guwahati	9th Feb 2020	National
Deepak Sharma	Edge Computing, Process Automation thru Robotics, Industry 4.0 & Cognitive Technology	Visakhapatnam	20-21 Feb 2020	National
Niranjan Sahoo	ASME 2019 Gas Turbine India Conference	IIT Madras	05-06 December 2019	International
Pranab K Mondal	International Conference on Recent Developments in Mechanical Engineering	NIT Silchar	07-09 February 2020	International
Sachin S. Gautam	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019)	IIT Mandi	11-13 December 2019	International
U.S. Dixit	6th International Conference on Production & Industrial Engineering (CPIE 2019)	NITJalandhar	June 8-10, 2019	International
Sajan Kapil	Autodesk Moldflow/PowerMILL Summit 2019	Pune	28-05-2019	National
U. K. Saha	ASME 2019 Gas Turbine India Conference	IIT Madras	05-06 December, 2019	International
Atul K Soti	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference	IIT Roorkee	28-31 Dec, 2019	International
Shrikrishna N. Joshi	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering - (AFTMME 2019)	IIT Ropar	5-7 December 2019	International

11. Invited Lectures of Faculty: In India, Abroad (Please do not repeat entries from Sl. No. 10)

Name of Faculty	Name of Lecture	Name of Inst./Org.	Place	Date
Poonam Kumari	Invited Talk on "Future Reserach Directions for Engineers"	BRCM Collage of Engineering and Technology, Bahal, Bhiwani, Haryana	Bahal, Bhiwnai, Haryana.	5th October, 2019
Shyamanta M Hazarika	Tutorial Speaker: EEG Characterization of Motor Imagery-Induced Mental Fatigue	PReMI-2019: 8th International Conference on Pattern Recognition and Machine Intelligence	Tezpur University	17-20 December, 2019
P Muthukumar	Thermal Management issues in metal hydride based thernal machines	Internaitonal workshop on Hydrogen storage	IIT Bombay	8-9th Dec 2019
P Muthukumar	Energy Efficient and Environmental friendly Porous Radiant burners	International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES-2020]	NIT Roukherla	February 10-12, 2020

P Muthukumar	Design and tesing of metal hydride based hydrogen storage devices	National workshop on hydrogen energy	IISER, TVM	27-28 Feb 2020
P Muthukumar	Energy saving in HVAC System	ISHRAE workshop, Guwahati	Guwahati	11-Nov-19
Deepak Sharma	Data-Driven Smart Manufacturing	Edge Computing, Process Automation thru Robotics, Industry 4.0 & Cognitive Technology	Visakhapatnam	21-Feb-20
Niranjan Sahoo	Session Organizer for Renewable Energy	ASME 2019 Gas Turbine India Conference	IIT Madras	05-06 December 2019
Niranjan Sahoo	Energy technologies for study of biofuels in internal combustion engines	National Conference on Mechanical, Materials and Renewable Energy Technology (NCMMRET 2020)	Einstein Academy of Technology and Management, Bhubaneswar	10-11 January 2020
Niranjan Sahoo	Waste heat management and usage for refrigeration and air-conditioning applications	International Conference on Recent Advancement in Air-conditioning and Refrigeration (RAAR-2019)	C. V. Raman College of Engineering, Bhubaneswar	28-30 November 2019
Niranjan Sahoo	Green energy technology for study of biofuels in internal combustion engines	International Joint Meeting and Symposium	Gifu University, Japan	07-10 October 2019
Niranjan Sahoo	Clean and green energy efficient technologies for internal combustion engines	National Seminar on Recent Scopes and Technologies in Mechanical Engineering	Government College of Engineering, Bhawanipatna, Odisha	20-21 September 2019
Niranjan Sahoo	Calibration methods of high frequency thermal sensors for localized temperature and heat flux measurements in gas turbine and internal combustion engine applications	GTMAP-Project, AR&DB-DRDO workshop	IISc Bangalore	19-Jul-19
Pranab K Mondal	Control in Capillary Filling Dynamics: The role of Contact Line Motion	Recent Advances in Interdisciplinary Trends in Engineering & Applications, Institute of Engineering & Science	IPSA Indore (India)	Feb 14-16, 2019
Pranab K Mondal	Flow dynamics inside a ferrofluid droplet and its evaporation characteristics under the influence of external magnetic field	Expert Talk at NIT Manipur	NIT Manipur	Aug 30, 2019
Pranab K Mondal	Microscale Transport of Heat	TEQIP-III STTP, SISTec, Gandhinagar	SISTec, Gandhinagar	Sept 13-20, 2019
Pranab K Mondal	Forward Osmosis (FO) Process for Sea Water Desalination: A Molecular Dynamics Study	Department of Mechanical Engineering, National Institute of Technology Tiruchirappalli	NIT Tiruchirappalli, India	Nov 29-Dec 1, 2019
Sachin S Gautam	Gecko Spatula Peeling – Numerical Findings Using Nonlinear Finite Element Based Study	Department of Mechanical Engineering, National Institute of Technology Warangal	Warangal, Telengana, India	2nd - 4th May 2019
Sachin S Gautam	Introduction to Nonlinear Finite Element Methods	Department of Mechanical Engineering, National Institute of Technology Jalandhar	Jalandhar, Punjab, India	25th - 26th December 2019

Uday S. Dixit	Writing of TEQIP Proposals	Jorhat Engineering College, Assam	Jorhat, Assam	May 7, 2019
Uday S. Dixit	modelling of manufacturing processes	NIT Jamshedpur	Jamshedpur, Jharkahn	May 20, 2019
Uday S. Dixit	Art of teaching	Assam Engineering College	Guwhati, Assam	May 30, 2019
Uday S. Dixit	Some research problems of manufacturing	NIT Jalandhar	Jalandhar, Punjab, India	Jume 10, 2019
Uday S. Dixit	Basics of FEM	Department of Mechanical Engineering, National Institute of Technology Jalandhar	Jalandhar, Punjab, India	December 24, 2019
Pankaj Biswas	Introduction to TIG, MIG welding,	4 days training program at central workshop	IIT Guwahati	15th to 20th July,2019
Pankaj Biswas	Basics of welding	4 days training program at central workshop	IIT Guwahati	15th to 20th July,2019
Pankaj Biswas	Advances in manufacturing engineering	One week faculty development programme on Advances in Mechanical Engineering (under TEQIP-III)	GIMT Guwahati,	23-27 Sept. 2019.
Pankaj Biswas	Overview of welding	ONE DAY WORKSHOP ON WELDING at Tool Room and Training Centre, Guwahati Association with Indian Institute of Technology (IIT) Guwahati & Indian Welding Society (IWS) – North East	MSME Guwahati	04.11.2019.
Pankaj Biswas	Basics of Welding Technology	TEQIP STC on 3-D Printing and allied processes,	IIT Guwahati	06th-10th Jan,2020
Pankaj Biswas	CAE/FEM in Robotics	TEQIP STC on Robotics and Automation	IIT Guwahati	03-13 March 2020
Sajan Kapil	PowerMill & PowerShape for 3D Printing	Moldflow Summit 2019	Autodesk, Pune	28-05-2019
Sajan Kapil	Additive Manufacturing: Can it change future?	Advanced Pedagogies: Active Learning and Digital Tools	IIT Guwahati	03-07-2019
Sajan Kapil	CNC Tool Path Planning using a CAM Package	4 days training program at central workshop	IIT Guwahati	18-07-2019
Sajan Kapil	Operations on Lathe Machine	4 days training program at central workshop	IIT Guwahati	18-07-2019
Sajan Kapil	Introduction to Solidworks	Mechanical Engineering Student Association	IIT Guwahati	10th to 11th Aug 2019
Sajan Kapil	Introduction to Solidworks	Mechanical Engineering Student Association	IIT Guwahati	7th to 8th Sep 2019
Sajan Kapil	Introduction to 3D Printing Technologies	Faculty Development Program	Assam Engineering College	27-11-2019
Sajan Kapil	3D Printing and Allied Technologies	Short Term Course on Education Technology by Guwahati University	IIT Guwahati	29-01-2020
Sajan Kapil	Micro-Additive Manufacturing of Non-Metallic Objects	TEQIP- Workshop Fabrication and Application of Micro Devices in Thermo-fluidic Engineering	IIT Guwahati	25-02-2020
Sajan Kapil	Micro-Additive Manufacturing of Metallic Objects	TEQIP- Workshop Fabrication and Application of Micro Devices in Thermo-fluidic Engineering	IIT Guwahati	26-02-2020
Sajan Kapil	Trajectory Planning for Robots	TEQIP STC on Robotics and Automation	IIT Guwahati	04-03-2020

U K Saha	Wind Tunnel Research	Expert Lecture at NERIST, Itanagar	NERIST, Itanagar	03-04-2019
U K Saha	Rockets, Missiles and Launch Vehicles	Expert Lecture at Dibrugarh University	Dibrugarh University	24-02-2020
U K Saha	Overview on Wind Tunnels and Their Applications	5th National Workshop on Research Methodology in Fluid Mechanics	IIT Guwahati	June 22-23, 2019
U K Saha	Wind Turbine Aerodynamics	AICTE-TEQIP sponsored STC on Recent Trends in Renewable Energy Utilization Technologies	IIT Guwahati	May 9-12, 2019
S K Kakoty	Fundamentals of Friction, Wear and Lubrication	TEQIP III STC on Material Characterization and Tribology	Assam Science & Technology University, Guwahati	02-Mar-20
S K Kakoty	Strategies for Effective Engineering Education: Empowering the Students	Faculty Development Program	Bineswar Brahma Engineering College	09-Jan-20
B. Sandeep Reddy	Robot Control	TEQIP on Robotics and Automation, IITG, March 2020	IIT Guwahati	March 3-13 2020
Nelson Muthu	Connecting Doctors, Researchers and Entrepreneurs for Indigenous Medical Device Innovation	TEQIP National workshop on Biomaterials: Design, Development and Biomedical applications	NIT Manipur	11^{th} – 15^{th}, September 2019
Nelson Muthu	MEDICAL DEVICES Regulations	TEQIP National workshop on Biomaterials: Design, Development and Biomedical applications	NIT Manipur	11^{th} – 15^{th}, September 2019
Nelson Muthu	FE modelling of Composite Laminates	TEQIP-III Short Term Course on Active/Passive Damping Composites for Structural Vibration Control	IIT Guwahati	6^{th} - 10^{th}, January 2020
Shrikrishna N Joshi	Micro-manufacturing Technologies	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering - (AFTMME 2019)	IIT Ropar	5-7 December 2019
Shrikrishna N Joshi	Big Data in Manufacturing	AICTE-ISTE approved one week refresher course on "Cognizance of Industry-4.0 towards Implementation and Security (Webinar)	K. J. Somaiya College of Engineering, Vidyavihar, Mumbai	30 th December, 2019 – 04 th January, 2020
Shrikrishna N Joshi	Laser based manufacturing: fundamentals and research opportunities	International Workshop on Smart Manufacturing and Metrology	IIT Madras	25-26 July 2019
Shrikrishna N Joshi	How to handle Big Data in manufacturing process simulations?	International Workshop on Smart Manufacturing and Metrology	IIT Madras	25-26 July 2020
Shrikrishna N Joshi	A note on mechatronics for 3D printing in perspective of SMART manufacturing	Five days workshop on "3D Printing and Allied Technologies"	IIT Guwahati	6th to 10th Jan 2020

12. Visitors From Other Institutes / Universities / Organisations / Invited Lectures

(Only distinguished visitors invited by appropriate authority)

Name	Name of Inst./Univ./Org.	Purpose/ Name of Lecture	Date	Remarks
Dr. Justin A Weibel	Purdue University, USA	Research Directions and Emerging Strategies for High-Power-Density	25-Feb-20	

		Thermal Management		
Prof Y D Goswami	University of south florida, USA	Fulbright Expert - Delivering lectures	4-14th March 2020	
Prof. Arunachalam Raj Rajendran	Chair and Professor Mechanical Engineering, University of Mississippi, USA	Computational modelling and damage mechanisms in mineralized biological tissue	08-11 September 2018	MESA
Prof Roger A Sauer	AICES, RWTH Aachen University	Visiting Researcher and Lecture	07-15 March 2020	
Prof. Sunil Pandey	IIT Delhi	A one-day ICCMM preconference workshop on Welding Research and Technology	07th March 2019	A one-day ICCMM preconference workshop on Welding Research and Technology at , IIT Guwahati (Co-ordinators: Pankaj Biswas and R. Ganesh Narayanan)
Dr. Sourav Ghosh	Loughborough University, UK	Invited Lecture	5th August 2019	Organized by: Pankaj Biswas
Prof. Amitabha Ghosh	Former Professor, IIT Kanpur, INSA Senior Scientist and Distinguished Professor Aerospace and Applied Mechanics Department Bengal Engineering & Science University Shibpur	Concepts of Engineering and Technology in Ancient India	03-04-2019	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil
Prof. Amitabha Ghosh	Former Professor, IIT Kanpur, INSA Senior Scientist and Distinguished Professor Aerospace and Applied Mechanics Department Bengal Engineering & Science University Shibpur	The Bicycle: Engineering Marvel and the Prime Mover for Women's Liberation	04-04-2019	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil
Mr. Subhodh Sarangi	Geo Delivery Executive at IBM India Pvt Ltd	Application of Digital Transformation in Manufacturing	09-05-2019	Invited by: Prof. S. K. Dwivedy, Organized by: Sajan Kapil
Prof. Raghu Echempati	Professor Kettering University USA, Visiting Prof. IIT Gandhinagar	lightweighting technology with automotive applications	04-07-2019	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil
Prof. P. K. Mishra	Former Professor, IIT Kharagpur, Former Emeritus Professor & Adjunct Professor CoEPune, Ex, Emeritus Professor/Visiting Professor, IIT Bhubaneshwar	Innovations in 3D Printing	18-07-2019	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil
Prof. P. K. Mishra	Former Professor, IIT Kharagpur, Former Emeritus Professor & Adjunct Professor CoEPune, Ex, Emeritus Professor/Visiting Professor, IIT Bhubaneshwar	Laser Processing of Materials	27-08-2019	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil
Dr. Siddharth Ghosh	Research Associate at St John's College, University of Cambridge, Cambridge, UK. Visiting researcher in Leiden Institute of Physics, Leiden; High Field Magnet Laboratory, EMFL,	Decomposing complex-systems using continuum and quantum mechanics	26-11-2019,	Invited by: Dr. Arup Nandy, Organized by: Sajan Kapil

	Nijmegen; Centre for Misfolding Diseases & Maxwell Centre, Cambridge			
Prof. Debi Prasad Mishra	Professor, Department of Aerospace Engineering, IIT Kanpur	Relevance of Traditional Indian Technology in Modern India	23-02-2020	Invited by: Prof. U. S. Dixit, Organized by: Sajan Kapil

13. Seminars/Workshops/Conferences/Short-Term Courses Organised

Sl. No.	Name of Faculty (Convener/ Co-ordinator, etc.)	Name of Sem./Wor./Con.	Funded By	Date	International/ National	No. of participants
1	Amaresh Dalal	Computational Fluid Dynamics for Incompressible Flows	TEQIP	17 - 21 June, 2019	National	28
2	Amaresh Dalal, Dipankar N Basu, Ujjwal K Saha	5th National Workshop on "Research Methodology in Fluid Mechanics"		22-23 June, 2019	National	35
3	Poonam Kumari and Nelson Muthu	Mechanics of composites for engineering applications	TEQIP	17-21 May, 2019	National	22
4	P Muthukumar	· Recent Trends in Renewable Energy Utilization Technologies,	TEQIP	8-12th May 2019.	National	
5	Pranab K Mondal and Pankaj Biswas	Fabrication and Application of Micro Devices in Thermo-fluidic Engineering	TEQIP-III	24-28 Feb, 2019	National	30
6	Uday S Dixit	Isothermal Near-Net Shape Forging of Aluminum Alloys: Advances and Inventions	GIAN course, MHRD	July 8-12, 2019	National	22
7	Pankaj Biswas and R Ganesh Narayan	ONE DAY WORKSHOP ON WELDING	MSME & IWS	4th Nov. 2019	National	20
8	Pankaj Biswas and R Ganesh Narayan	A one-day ICCMM preconference workshop on Welding Research and Technology	IITG	7th March 2019	National	30
9	Sajan Kapil	Five days workshop on "3D Printing and Allied Technologies"	TEQIP-III	6th to 10th Jan 2020	National	65
10	Satyajit Panda	Active/Passive Damping Composites for Structural Vibration Control	TEQIP-III	6th to 10th Jan 2020	National	
11	R Ganesh Narayanan, Nelson Muthu and S. Kanagaraj	Healthcare Hackathon	IEDC	Sep 5 to 7th 2019	National	20
12	Shrikrishna N. Joshi, G L Samuel (IIT Madras), and Satish Bukapatanam (Texs A&M Uni, USA)	International Workshop on Smart Manufacturing and Metrology	Private sector	25-26 July 2019		
13	Shrikrishna N. Joshi	Faculty Training on Future Skill Technologies of IT-ITes Two-weeks training program on Robotics and Automation	TEQIP-III	03-13 March 2020		

A brief report on the major NATIONAL and INTERNATIONAL events with photographs may also be given separately in addition to the format given above.

14. Patents:

No. of Patents Applied with details …….

No. of Patents Granted with details …….

Sl. No.	Name of Faculty and co researcher	Name	Date Applied/Granted	Application No.	Remarks
1	P Kishore Kumar and S Kanagaraj,	Switchable Assisted Deep Squat Hinge with Friction Control Mechanism for Polycentric Knee Joints	09-04-2019	201931014318	
2	Heta Jigar Panchal, P. Kishore Kumar, Ajaikumar B. Kunnumakkara and S. Kanagaraj	In-Situ Beat to Beat Blood Pressure Monitoring and Recording using Cardiovascular Implantable Electronic Devices	09-04-2019	201931014319	
3	Ashirbad Jana, S. Senthilvelan and S. Kanagaraj.	A novel processing technique for the development of machining free acetabular cup from UHMWPE powder to be used in total hip replacement surgeries	6th August 2019	201931031886	
4	Ashirbad Jana, S. Senthilvelan and S. Kanagaraj.	Orbital bearing machine (OBM) simulator attachable to pin-on-disc device for pre-clinical testing of prosthetic hip joints	13th March 2020	202031010845	
5	Muthukumar P, L K Kaushik, Sangjukta Devi, Arun Kumar M.	Biogas Operated Domestic Cook Stove with Naturally Aspirated Porous Radiant Burner.	14th Dec 2019.	201931051927	
6	Muthukumar P, L K Kaushik, Arun Kumar M	Eco-Friendly and Energy-Efficient LPG Cooking Stove With Naturally-Aspirated Porous Radiant Burner For Commercial Kitchens.	4th March 2020.	202031009304	
7	Muthukumar P, L K Kaushik	Energy Efficient and Eco-Friendly Domestic LPG Cooking Stove with A Two-	4th March 2020.	202031009356	

		Layer Porous Radiant Burner,			
8	Maharana M., Nayak S. K. and Sahoo N	Nonedible vegetable oil based dielectric liquid and use thereof in power and distribution transformer	2018	201831013006 A	
9	Maharana M., Nanda A., Nayak S. K. and Sahoo N	Natural and force convection imposed accelerated thermal ageing simulator to predict the life of the insulating oil before using in transformer	2017	201731045816 A	
10	Bordeori M. M., Maharana M., Baruah N., Nayak S. K. and Sahoo N	Design and development of an automated open beaker oxidative ageing assessment apparatus	2017	201731047043 A	
11	HARISH PANDURANGA JEEVAJI, U.S. Dixit, Amit Raj and Shashikant Soren	RIDER OPERATABLE AND RETRACTABLE STABLIZER WHEELS SYSTEM IN BICYCLE	2019	201941018075 A, Patent Office Journal No. 23/2019 Dated 07/06/2019,	
12	K. P. Karunakaran, Sajan Kapil, Seema Negi, and Prathamesh Shreekant Joshi	Method and System for Manufacturing a Near Net-Shape of an Object Using Feature-Based Conformal Slicing	21-05-2019	201921053660	
13	K. P. Karunakaran, Seema Negi, Sajan Kapil, Prathamesh Shreekant Joshi, and Arun Athul	Energy Beam Laminated Manufacturing	06-02-2020	202021005274	
14	A.N. Reddy, Saruav Kumar Dutta, B. Sandeep Reddy, S.K. Dwivedy	Bistable Compliant Gripper for Pipe Climbing Robot	Jan 30 2020	2020012320000101	

15. Awards and honours (Only awards/honours at national/international level from reputed organisations)

Name of Faculty	Name of Award	Name of Institute/ Organization/ Foundation bestowing the award	Reason for award	Form of Award (Citation/ Medal/ Cash etc)
Dr. Poonam Kumari	DUO-India Professor Fellowship, 2020			

Dr. Poonam Kumari	Naaz Hai Betiyon Par-Danik Jagran, Bhiwani, 31st December, 2019			
P Muthukumar	Eminent Engineer 2019 from "The Institution of Engineers (India)", Assam State Centre, 15th September 2019.			
Pranab K Mondal	Outstanding Reviewer, Science Direct, Elsevier, 2019			

16. Students' Achievements:

Name of Student/ Faculty	**Name of Award**	**Name of Institute/ Organization/ Foundation bestowing the award**	**Reason for award (Name of Paper, if applicable)**	**Form of Award (Citation/ Medal/ Cash etc)**
Prof P Muthukumar	Globalink Research Award	Mitacs Canada	to visit Simon Fraser University from May 2019 to Dec 2019	
Shukla, Shiv Sahaya K. S. R. K. Murthy	Best Paper Award	First International Conference on Manufacturing, Material Science and Engineering 2019 (ICMMSE 2019), CMR, Hyderabad.	Numerical analysis of a semi-elliptical surface cracked plate under tension.	
Mr. Mohamed Abbas, Mr. Jyotindra Narayan Dr. S. K. Dwivedy	Best Paper award	5th IEEE International Conference on Computing Communication, Control, and Automation (ICCUBEA) 2019, at PCCOE-Pune		**Citation**
Mr. S. S. Rangavajhala, Dr. R. Tiwari	Best paper presentation award	National Symposium on Rotor Dyanmics (NSRD-2019) at NAL Bangalore		
Mr. P.V.S.S Sridhar Dr. P. Biswas	Best Paper award	2nd International Conference on Computational Methods in Manufacturing, IIT Guwahati.2020		
Mr. Enni Krishna, Dr. M. Das	Best Paper award	11th International Conference on Precision, Meso, Micro & Nano Engineering (COPEN 11) 2020 , IIT Indore.		
Mr. Nitesh Kumar, Dr. D. N. Basu	Best Paper award	International conference on Sustainable Energy and Green Technology (SEGT 2019), Bangkok.		

17. Any Other (Special Mention)

18. Faculty Members (In alphabetical order according to surname)

Sl. No.	Name	Name of the University/Institute/Org PhD degree received from	Designation	Areas of Interest	**Date of joining (Not Internal Promotion)** for the faculty members who **joined during the reporting year**
1	Bag, Swarup	IIT Bombay	Associate Professor	Fusion welding processes, Finite element method, Laser micro joining, Heat transfer and fluid flow in fusion welding, Residual stress and distortion, Recrystallization in hot metal forming process, Optimization in manufacturing process	2011
2	Bandopadhya, Dibakar	IIT Kanpur	Associate Professor	Active materials, Artificial muscle materials, Smart structures, Robotics and mechanism, Composites, MEMS, Bio inspired design	2008
3	Banerjee, Atanu	IIT Kanpur	Associate Professor	Complaint Mechanism, Shape memory alloy, Bio-memetic devices	2010
4	Basireddy, Sandeep Reddy	IISc Bangalore	Assistant Professor	Nonlinear Dynamics of Mechanical Systems, Robotics and Control, Applied Dynamics	2018
5	Basu, Dipankar Narayan	IIT Kharagpur	Associate Professor	Nuclear Thermalhydraulics, Supercritical Natural Circulation Loops, Domestic Air-conditioning, Computational Fluid Dynamics and Heat Transfer	2012
6	Biswas, Pankaj	IIT Kharagpur	Associate Professor	Manufacturing and Design: Computational weld mechanics, Solid state welding, Soft computing modeling of welding processes, FEM, Line heating	2011
7	Biswas, Gautam	IIT Kharagpur	J C Bose National Fellow and Director of the Institute; Professor	Computational Fluid Dynamics, Convective Heat Transfer, Turbulence, Boiling Heat Transfer, Heat Transfer Augmentation, Turbomachinery	2013

8	Chakraborty, Debabrata	IIT Kharagpur	Professor	FRP, Composites, FEM, Fracture Mechanics and Design	1999
9	Dalal, Amaresh	IIT Kanpur	Associate Professor	Computational Fluid Dynamics, Heat Transfer, Structured Grid Techniques in Curvilinear Coordinates, Finite Volume Methods and Unstructured Grid Techniques, Natural and Mixed Convection Flows, Electrochemical Energy Conversion and Storage	2010
10	Das, Manas	IIT Kanpur	Associate Professor	Advanced Finishing and Nano-finishing Processes, Non-traditional Machining Processes, Machining of Advanced Engineering Materials, Micromanufacturing, Micromachining, Tribology, Laser Welding	2012
11	Dass, Anoop K.	IISc Bangalore	Professor	Computational Fluid Dynamics and Turbomachines	1996
12	De, Arnab Kumar	IIT Kanpur	Associate Professor	Numerical Methods in Fluid Flow and Heat Transfer, Convection, Turbulence	2009
13	Dixit, Uday S.	IIT Kanpur	Professor	Design and Manufacturing : FEM, Neural Network and Fuzzy Set Application; Mechatronics	1998
14	Dwivedy, Santosha K.	IIT Kharagpur	Professor & HOD	Non-linear Dynamics, Design and Robotics, vibrations	1999
15	Gautam, Sachin S.	IIT Kanpur	Assistant Professor	Design and Manufacturing : Nonlinear Finite Element Analysis, Computational Contact Impact Analysis, Adhesion, Rough Surfaces, Time Integration Schemes, Mixed Time Integration Schemes, Plasticity, Ductile Fracture, Continuum Damage Mechanics	2013
16	Hazarika, Shyamanta M.	University of Leeds, England	Professor	Robotics, Cognitive Systems, Knowledge Representation and Reasoning	2017
17	Joshi, Shrikrishna N.	IIT Bombay	Associate Professor	Micro fabrication: Laser micro forming, Micro machining: Micro electric discharge machining (EDM), Web based manufacturing, Process modeling and optimization of advanced manufacturing processes, Application of soft computing techniques in manufacturing	2010
18	Kakoty, Sashindra K.	IIT Kharagpur	Professor & Dean, Infrastructure,	Tribology, Duct Acoustics, Mechanical System Design, Rural Technology	2000

			Planning and Management		
19	Kalita, Karuna	University of Nottingham	Associate Professor	Rotordynamics, Coupled Dynamics of Electro-Mechanical Systems, Vibration	2010
20	Kanagaraj, S.	IIT Kharagpur	Professor	Biomaterials, Carbon nanotubes based nanocomposites, Nanofluids, Materials characterization	2008
21	Kapil, Sajan	IIT Bombay	Assistant Professor	Rapid Manufacturing (3D Printing), Welding/Cladding Processes, CNC, Manufacturing Automation	2018
22	Khanikar, Prasenjit	North Carolina State University	Assistant Professor	Microstructural Materials Modeling, Micro-mechanics, Dislocation Density Based Crystal Plasticity, Deformation and Failure Mechanisms of Metallic Materials, Finite Element Method, Dynamic Behavior of Materials, Fracture Mechanics, Aluminum Alloys, Microstructural Characterization	2015
23	Kulkarni, Vinayak	IISc Bangalore	Associate Professor	High enthalpy flows, scramjet engine, experimental, aerodynamics, measurement science, CFD simulations	2008
24	Kumar, Bhaskar	IIT Kanpur	Assistant Professor	Hydrodynamic Stability, Bluff Body Flows, Computational Fluid Dynamics	2015
25	Kumari, Poonam	IIT Delhi	Associate Professor	Theory of plates and shells, Computational mechanics, Smart structures	2013
26	Madhusudhana, Gavara	IISc Bangalore	Assistant Professor	Computational Fluid Dynamics, Heat Transfer, Cooling of Electronics, Multi-phase flows, Cooling at Micro/Mini scales, Turbulent Fluid Flow and Heat transfer	2012
27	Mahanta, Pinakeswar	IIT Guwahati	Professor	Thermal Radiation with Participating Media, Fluidization, Energy Conservation and Renewable Energy	2001
28	Mandal, Shubhadeep	IIT Kharagpur	Assistant Professor	Microswimmers, Complex Fluids, Droplet Microfluidics, Electrohydrodynamics	2020
29	Mankodi, Tapan Krishnakumar	IIT Bombay	Assistant Professor	Rarefied Gas Dynamics, Computational Gas Dynamics, Hypersonic Aerothermodynamics, Non-equilibrium Flows, Galerkin Methods	2019

30	Mondal, Pranab Kumar	IIT Kharagpur	Assistant Professor	Microfluidics, Electrokinetics, Two Phase Transport, Microscale Transport of Heat, Flow Through Porous Media.	2015
31	Murthy, K. S. R. Krishna	IIT Kharagpur	Professor	Finite Element Methods, Error Estimation and Fracture Mechanics	2002
32	Muthu, Nelson	IIT Bombay and Monash University	Assistant Professor	Meshfree Methods, FEM, Fracture Mechanics, Composites, Structural Health Monitoring, Medical Device Innovation	2017
33	Muthukumar, P.	IIT Madras	Professor	Coupled heat and mass transfer analysis; Metal hydride based thermal machines, Conventional and Non-conventional refrigeration systems	2006
34	Nandy, Arup	IISc Bangalore	Assistant Professor	Finite Element Development and Analysis in Structure, Acoustics, Electromagnetics, Structural acoustic interaction, Magnetohydrodynamics, MEMS; Optimization	2017
35	Narayanan, Ganesh R.	IIT Bombay	Associate Professor	Material Forming and Joining	2007
36	Natarajan, Ganesh	IISc Bangalore	Associate Professor	Computational Fluid dynamics, Grid Adaptation, Error Estimation, Immersed Boundary methods, Parallel computing, Biofluid dynamics	2011
37	Pal, Sukhomay	IIT Kharagpur	Associate Professor	Welding Process Monitoring and Control, Tool Condition Monitoring, Non-Conventional Machining Process Application of Artificial Neural Network, Genetic Algorithms and Fuzzy logic in manufacturing	2010
38	Panda, Biranchi	NTU Singapore	Assistant Professor	Advanced manufacturing and design, 3D/4D printing, Modelling and Characterization, Energy and sustainable environmental technologies	2019
39	Panda, Satyajit	IIT Kharagpur	Associate Professor	Composite materials, Nonlinear vibrations, Smart materials and structures, FEM, Functionally Graded materials and structures, Micromechanics.	2009
40	Pandey, Manmohan	IIT Kanpur	Professor	Dynamics and Control of Fluid-Thermal Systems, Nuclear Reactor Thermal-Hydraulics	2000
41	Robi, P. S.	IIT Bombay	Professor	Coating, Fracture Mechanics, Materials Processing, Metal Matrix composite, Metal Casting, P/M Processing	1997

42	Saha, Ujjwal K.	IIT Bombay	Professor	Propulsion, Turbomachinery, Wind Energy Conversion, Internal Combustion Engines	2000
43	Sahasrabudhe, Anil D.	IISc Bangalore	Professor (On deputation as Chairman of the All India Council for Technical Education)	Vibration and Noise, Condition Monitoring, CAD/CAM	1995
44	Sahoo, Niranjan	IISc Bangalore	Professor	Fluid and Thermal Engineering, Aerodynamics, Gas Dynamics, Instrumentation, Measurements and Experiments in Fluid	2004
45	Senthilvelan, S.	IIT Madras	Professor	Composites, Fatigue, Wear and Failure Analysis	2006
46	Soti, Atul	Monash University and IIT Bombay	Assistant Professor	Computational Fluid Dynamics and Heat Transfer, Fluid-Structure Interaction, Renewable energy, High Performance Computing, Immersed-Boundary Method, Spectral-element Method	2019
47	Sharma, Deepak	IIT Kanpur	Associate Professor	Optimal Design: Modeling and Computation, Engineering Design and Optimization, Genetic Algorithms, Multi-objective Optimization	2012
48	Tiwari, Rajiv	IIT Kanpur	Professor	Rotor Dynamics, Vibrations, Identifi cation in Mechanical Systems, Rolling Element Bearing Design and Analysis, Application of Active Magnetic Bearings in Rotors, Vibrations based Condition Monitoring of Industrial Rotating Machines	1997