

FORMAT FOR ANNUAL DEPARTMENT/CENTRE REPORT

(PERIOD: 1 APRIL 2018 – 31 MARCH 2019)

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 different 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.

In addition, 14 new laboratories have been built –

- Micro-machining lab
- Aerodynamics lab
- Electromechanics lab

- Fracture Mechanics and Composites 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 2018 – 31 March 2019:

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 2018 – 31 March 2019:

Design and procurement of equipment for GAIT Analysis Lab

7. Research Projects:

a) New Sponsored Projects (Total No: 14)

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	Prof. Gautam Biswas, Dr. Dipankar N Basu	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	Prof. Gautam Biswas, Dr. Vimal Katiyar, Dr. Chandan Mukherjee	2021
S Kanagaraj and S K Dwivedy	North East Centre for Biological sciences and Healthcare Engineering (NECBH)	DBT	3735.28	Prof. R. Swaminathan, Prof. S. Dandapat, Prof. Ashish Anand, HOD BSBE and HD Chemsitry, Dean R&D, Associat Dean R&D	3 years
S Senthilvelan	Feasibiliy Evaluation of Powder Metallurgy Connecting Rod for Automotive Applications	DST	47.65	Prof P S Robi	2 years
Manas Das	Fabrication of Prosthetic Implants and further Nanofinishing Using Magnetic Field Assisted Finishing (MFAF) Process	SERB, DST	47.68		3 years
S Kanagaraj	Indigenous development of a suture mediated vascular closure device for closure of arterial access site to achieve instant hemostasis following catheter angiography and interventions	DBT	34.264	Dr.Ganesh Narayanan IITG, Dr. Akash Handique, Dr. Amit Malviya, Dr.Prajal Saikia NEIGRIHMS and Dr.Bhupen Sarma CVS	2 years
S Kanagaraj	Development of new generation Acetabular Socket Linear and Femoral Head Prototypes with unique 3D microstructures and better fracture resistance for Osteoporosis and Osteoarthritis treatment	IMRPINT, MHRD	30.26	Prof. Bikramjit Basu, IISc, Prof. S. Senthilvelan, IITG, Prof. K. Balani, IITK, Prof. Alok Dhawan, IITR, Mr. R. Joseph Bensingh, CIPET	3 years
S Kanagaraj	An affordable lower limb prosthesis with polycentric knee joint, dynamic ankle joint and suction-suspension socket system having advanced features	IMRPINT, MHRD	73.37	Prof. Nelson Muthu	3 years
Dipankar N Basu	Experimental & computational analyses of flow-induced heat transfer deterioration in supercritical natural circulation loop	DERB, DST	47.26		3 years
Ganesh Narayanan	NewGen IEDC	DST		S. K. Dwivedy	
Prof P Muthukumar	Metal hydride materials and systems for the increase of efficiency in renewable and hydrogen energy	BRICS Multilateral Research and Development Projects, DST	36	Dr Pankaj Kalita	3 years

Prof P Muthukumar	DST – IIT Bombay Energy Storage Platform on Hydrogen	SERB, DST	170		5 years
Prof P Muthukumar	Reversible Alkali Metal Based Hydrides for High Temperature Thermal Energy Storage	MES, DST	76		3 years
Nelson Muthu	Computational and Experimental study of damage and failure in carbon/glass fiber reinforced composite materials	SERB, DST	49.59		3 years

b) Ongoing Sponsored Projects (Total No: 11)

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	300.88	Dr. Ganesh Natarajan, Dr. Nanda Kishore	2019
S Senthilvelan	Manufacturing Solutions for the Preparation of Siddha Medicines (Traditional Medicines Originated from Tamilnadu)	MHRD IMPRINT	57.98	Dr S Kanagaraj Prof P S Robi Prof . Kannan Pakshirajan Prof G Pugazhenth Indian Institute of Technology Guwahati Prof R Gnanamoorthy Professor , Indian Institute of Technology Madras Dr P Selva Shanmugam(MD Siddha), PhD Siddha Consultant Physician, Dr J Raamachandran (Retd.) Professor Indian Institute of Technology Madras Prof R A Kalaivani Vels University Chennai 600117	
Sachin Singh Gautam	Development of A Nonlinear Finite Element Based Framework for Elasto-plastic Contact Problems	VSSC, ISRO	12.5		2 Years
Sachin Singh Gautam	Numerical Methods For Dynamic Analysis of Adhesive Contact Problems	SERB, DST	32.26		3 Years
Vinayak Kulkarni	Compressible Flow solver with Immersed Boundary Approach	Respond, ISRO	16.32	Niranjan Sahoo and Ganesh Natarajan	1 year
Poonam Kumari	Analytical solution for boundary layer stresses in piezoelectric plates with longitudinally functionally graded materials	SERB, DST	23.96		3 years
Prof P Muthukumar	Development of High Temperature Thermal Energy Storage System for Solar Thermal Power Plant	SERB, DST	150	Dr R Anandalakshmi, Chemical Engg	3 years
Prof P Muthukumar	Design and development of energy efficient and environment friendly LPG and Kerosene cooking stoves with Porous Radiant Burners for household and large-scale cooking applications	IMRPINT, MHRD	160		3 years

Prof P Muthukumar	Design, development and demonstration of indigenous hydrogen storage and fuel cell system for mobile and stationary applications of 5 kW capacity	IMRPINT, MHRD	48		3 years
Pranab K Mondal	Experimental investigation on the roughness-surface wettability coupling in capillary filling in microchannel	SERB, DST	66.07	Prof. Gautam Biswas	3 years
Manmohan Pandey	Investigations on Hydrodynamics, Flow Regimes and Heat Transfer Characteristics of Flow Boiling in Mini- and Microchannels	SERB, DST	59	Prof. Anugrah Singh (Chemical Engineering)	3 years

c) Completed Sponsored Projects (Total No:.....)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
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8. Consultancy (Total No: 3)

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
S Kanagaraj	Design of a Food Ecology System (FES) for Pig feed	GNRC Limited	11.68	Prof.S.K.Dwivedy, Prof.P.S.Robi , Prof.P. Muthukumar, Prof. R. Ganesh Narayanan, Prof. Poonam Kumari, Prof. Deepak Sharma	6 months
Prof P Muthukumar	Design and development of metal hydride based hydrogen purification system:	NTPC Ltd	20.2		2 years
Nelson Muthu	Training on Creep and Thermal Fatigue	FCA Engineering Pvt. India Ltd.	2.301		2 days

9. Research Publications

International and National Journal (PERIOD: 1 APRIL 2018 – 31 MARCH 2019)

Total No. of International Journal: }
 Total No. of National Journal: } 137 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	Nath, B., Biswas, G., and Dalal, A.	Influence of electric field on deformation of a drop in shear flow	Physics of Fluids	2019	31	4	042102-1	042102-13
2	Deka, H., Biswas, G., Sahu K.C., Kulkarni, Y., and Dalal, A.	Coalescence Dynamics of a Compound Drop on a Deep Liquid Pool	Journal of Fluid Mechanics	2019	866		R2-1	R2-11
3	Deka, H., Tsai, P-H, Biswas, G., Dalal, A., Ray, B., and Wang, A-B.	Dynamics of Formation and Oscillation of Non-spherical Drops	Chemical Engineering Science	2019	201		413	423
4	Deka, H., Biswas, G., Chakraborty, S., and Dalal, A.	Coalescence Dynamics of Unequal Sized Drop	Physics of Fluids	2019	31		012105-1	012105-17

5	Bhardwaj, S., Dalal, A., and Mukherjee, P. P.	Mesoscale Understanding of Capillarity Driven Two-phase Flow in a Packed Bed Architecture	International Journal of Heat and Mass Transfer	2019	136		116	127
6	Parmananda, M., Dalal, A., and Natarajan, G.	Numerical appraisal of three low Mach number algorithms for radiative-convective flows in enclosures	Computers and Mathematics with Applications	2019	77	8	2162	2181
7	Manik, J., Dalal, A., and Natarajan, G.	A Parametric Study on the Droplet Detachment Process from the Ceiling Under the Effect of Gravity	Engineering Computations	2019	36	2	445	465
8	Randive, P., Dalal, A., and Mukherjee, P.	Probing the Influence of Confinement and Wettability on Droplet Displacement Behavior: A Mesoscale Analysis	European Journal of Mechanics, B/Fluids	2019	75		327	338
9	Nath, B., Raza, A., Sethi, V., Dalal, A., Ghosh, S., and Biswas, G.	Understanding Flow Dynamics, Viability and Metastatic Potency of Cervical Cancer (HeLa) Cells Through Constricted Microchannels	Scientific Reports	2018	8		17357-1	17357-10
10	Bhardwaj, S., Dalal, A., Mukherjee, P. P., and Biswas, G.	Analysis of Droplet Dynamics in a Partially Obstructed Confinement in a Three-dimensional Channel	Physics of Fluids	2018	30		102102-1	102102-14
11	Pandey, V., Biswas, G., and Dalal, A.	Effect of Surface Wettability and Electric Field on Transition of Film Boiling to Nucleate Boiling	Numerical Heat Transfer, Part A	2018	74	3	1105	1120
12	Pandey, V., Biswas, G., Dalal, A., and Welch, S.W.J.	Bubble Lifecycle During Heterogeneous Nucleate Boiling	ASME Journal of Heat Transfer	2018	140	12	121503-1	121503-17
13	Parmananda, M., Thirumalaisamy, R., Dalal, A., and Natarajan, G.	Investigations of Turbulence-radiation Interaction in Non-Oberbeck-Boussinesq Buoyancy-driven Flows	International Journal of Thermal Sciences	2018	134		298	316
14	Bhardwaj, S., and Dalal, A.	Sweeping of the Entrapped Fluid out of the Groove in a Three-dimensional Channel Using Lattice Boltzmann Method	European Journal of Mechanics, B/Fluids	2018	2		328	339
15	Kotoky, S., Dalal, A., and Natarajan, G.	Effects of Specularity and Particle-particle Restitution Coefficients on the Recirculation Characteristics of Dispersed Gas-particle Flows Through a Sudden Expansion	Advanced Powder Technology	2018	29	10	2463	2475
16	Borgohain, P., Arumughan, J., Dalal, A., and Natarajan, G.	Design and Performance of a Three-dimensional Micromixer with Curved Ribs	Chemical Engineering Research and Design	2018	136		761	775
17	Parmananda, M., Dalal, A., and Natarajan, G.	Unified Framework for Buoyancy Induced Radiative-convective Flow and Heat Transfer on Hybrid Unstructured Meshes	International Journal of Heat and Mass Transfer	2018	126		908	925
18	Nath, B., Biswas, G., Dalal, A., and Sahu, K. C.	Cross-stream Migration of Drops Suspended in Poiseuille Flow in the Presence of an Electric Field	Physical Review E	2018	97		63106-1	63106-13

19	Manik, J., Dalal, A., and Natarajan, G.	A Generic Algorithm for Three-dimensional Multi-phase Flows on Unstructured Meshes	International Journal of Multiphase Flow	2018	106		228	242
20	Thirumalaisamy, R., Natarajan, G., and Dalal, A.	A Charge-conservative Approach for Simulating Electrohydrodynamic Two-phase Flows Using Volume-of-fluid	Journal of Computational Physics	2018	230	5	1939	1955
21	Deka, H., Ray, B., Biswas, G., Dalal, A.	Dynamics of Tongue Shaped Cavity Generated During the Impact of High-speed Microdrops	Physics of Fluids	2018	30		42103-1	42103-14
22	Randive, P., Dalal, A., and Mukherjee, P. P.	Mesosopic Modeling of Capillarity-induced Two-phase Transport in a Microfluidic Porous Structure	Transport in Porous Media	2018	122	3	673	691
23	Borgohain, P., Choudhary, D., Dalal, A., and Natarajan, G.	Numerical Investigation of Mixing Enhancement for Multi-species Flows in Wavy Channels	Chemical Engineering & Processing: Process Intensification	2018	127		191	205
24	Arnab Kr. De	A diffuse interface immersed boundary method for complex moving boundary problems	Journal of Computational Physics	2018	366		226	251
25	Arnab Kr. De, V. Eswaran, P. K. Mishra	Dynamics of plumes in turbulent Rayleigh-Benard convection	European Journal of Mechanics - B/Fluids	2018	72		164	178
26	Arup Nandy, C. S. Jog	Conservation Properties of the Trapezoidal Rule for Linear Transient Electromagnetics	Journal of Advances in Mathematics and Computer Science	2018	26	4	1	26
27	Arup Nandy, C. S. Jog	A monolithic finite-element formulation for magnetohydrodynamics	Sadhana: Indian Academy of Sciences	2018	43		151	
28	Nada Barakat and Deepak Sharma	Modeling and Bi-Objective Optimization of Soil Cutting and Pushing Process for Bulldozer and its Blade	Journal of The Institution of Engineers (India): Series C	2019	100	1	129	143
29	Deepak Sharma and Nada Barakat	Evolutionary Bi-Objective Optimization for Bulldozer and its Blade in Soil Cutting	Journal of The Institution of Engineers (India): Series C	2019	100	2	295	310
30	V. Pandey, G. Biswas and A. Dalal	Effect of surface wettability and electric field on transition of film boiling to nucleate boiling	Numerical Heat Transfer, Part A	2018	74		1105	1120
31	S. Bhardwaj, A. Dalal, G. Biswas and P. P. Mukherjee	Analysis of droplet dynamics in a partially obstructed confinement in a three-dimensional Channel	Physics of Fluids	2018	30		102102-1	102102-14
32	V. Pandey, G. Biswas, A. Dalal and S.W.J. Welch	Bubble Lifecycle During Heterogeneous Nucleate Boiling	Journal of Heat Transfer (ASME)	2018	140		121503-1	121503-17
33	B. Nath, G. Biswas, A. Dalal, and K. C. Sahu	Cross-stream migration of drops suspended in Poiseuille flow in the presence of an electric field	Physical Review E	2018	97		063106-1	063106-13

34	M.P. Borthakur, D. Bandyopadhyay and G. Biswas	Electric field mediated separation of water–ethanol mixtures in carbon nanotubes integrated in nanoporous graphene membranes	Faraday Discuss	2018	209		259	271
35	M. P. Borthakur, G. Biswas and D. Bandyopadhyay	Dynamics of drop formation from submerged orifices under the influence of electric field	Physics of Fluids	2018	30		1	11
36	M. P. Borthakur, G. Biswas and D. Bandyopadhyay	Dynamics of an arched liquid jet under the influence of gravity	European Journal of Mechanics / B Fluids	2018	74		1	9
37	S. Sajith, K.S.R.K. Murthy and P.S. Robi	A simple technique for estimation of mixed mode (I/II) stress intensity factors.	Journal of Mechanics of Materials and Structures	2018	13		141	154
38	S. Sajith, K.S.R.K. Murthy and P.S. Robi	Prediction of accurate mixed mode fatigue crack growth curves using the Paris' law.	Journal of The Institution of Engineers (India): Series C.	2019	100	1	165	174
39	M.K. Hussian and K.S.R.K. Murthy	A point substitution displacement technique for estimation of elastic notch stress intensities of sharp V-notched bodies	Theoretical and Applied Fracture Mechanics	2018	97		87	97
40	P. Paul, K.S.R.K. Murthy and D. Chakraborty	A strain gage technique for mode I notch stress intensity factor of sharp Vnotched configurations	Theoretical and Applied Fracture Mechanics	2018	94		57	90
41	K. Saikia, M. Pandey, D.N. Basu	Numerical investigation of the effect of inlet subcooling on flow instabilities in a parallel channel natural circulation boiling system	Nuclear Engineering and Design	2019	114		13	21
42	A. Iqbal, M. Pandey	Effect of local thermophysical properties and flashing on flow boiling pressure drop in microchannels	International Journal of Multiphase Flow	2018	106		311	324
43	A. Iqbal, M. Pandey	A simple methodology to incorporate flashing and variation of thermophysical properties for flow boiling pressure drop in a microchannel	International Journal of Thermal Sciences	2018	132		137	145
44	S. Singh, D. Kumar, M. Ravi Sankar, K. Rajurkar	Nanofinishing of Microslots on Surgical Stainless Steel by Abrasive Flow Finishing Process: Experimentation and Modeling	ASME Journal of Micro-Nano Manufacturing	2018	6	2	21005-1	21005-12
45	K.K. Gajrani, M.R. Sankar and U.S. Dixit	Environmentally friendly machining with MoS ₂ filled mechanically micro-textured cutting tools	Journal of Mechanical Science and Technology	2018	32	8	3797	3805
46	K.K. Gajrani, S. Suresh and M.R. Sankar	Environmental friendly hard machining performance of uncoated and MoS ₂ coated mechanical micro-textured tungsten carbide cutting tools	Tribology International	2018	125		141	155
47	Apurba Das, Anil Kumar Chikkala, Gyan	Effect of Thickness on Optical and Microwave Dielectric Properties of	Journal of Alloys and Compounds	2018	739		729	736

	Prakash Bharti, Rasmi Ranjan Behera, M. Ravi Sankar, Alika Khare, Pamu Dobbidi	Hydroxiapatite Films Deposited by RF Magnetron Sputtering						
48	Rasmi Ranjan Behera, A. Das, D. Pamu, L.M. Pandey, M. Ravi Sankar	Mechano-tribological properties and in vitro bioactivity of biphasic calcium phosphate coating on Ti-6Al-4V	Journal of the Mechanical Behavior of Biomedical Materials	2018	86		143	157
49	Anwesa Barman, Manas Das	Nano-finishing of bio-titanium alloy to generate different surface morphologies by changing Magnetorheological polishing fluid compositions	Precision Engineering	2018	51		145	152
50	Anwesa Barman, Manas Das	Simulation and experimental investigation of finishing forces in magnetic field assisted finishing process	Journal of Materials and Manufacturing Processes	2018	133	11	1223	1232
51	Chandan Kumar, Manas Das, C.P. Paul, K.S. Bindra	Characteristics of fiber laser weldments of two phases ($\alpha+\beta$) titanium alloy	Journal of Manufacturing Processes	2018	35		351	359
52	Chandan Kumar, Manas Das, C.P. Paul, K.S. Bindra	Comparison of bead shape, microstructure and mechanical properties of fiber laser beam welding of 2 mm thick plates of Ti-6Al-4V alloy	Optics and Laser Technology	2018	105		306	321
53	P. Dinesh, M.R. Behera, P.G. Ranjith, N. Muthu	An element-free Galerkin method using vertically averaged multiphase flow model for carbon sequestration	Computers and Geotechnics	2018	105		195	210
54	S. Brahmachary, G. Natarajan and N. Sahoo	On maximum ballistic coefficient axisymmetric geometries in hypersonic flows	Journal of Spacecraft and Rockets	2018	55		518	522
55	S. Brahmachary, G. Natarajan, V. Kulkarni and N. Sahoo	A sharp-interface immersed boundary framework for simulations of high-speed inviscid compressible flows	International Journal of Numerical Methods in Fluids	2018	86		770	791
56	N. Sahoo, V. Kulkarni and R. K. Peetala	Conjugate heat transfer study in hypersonic flows	Journal of the Institution of Engineers (India): Series C	2018	99	2	151	158
57	S. Agarwal and N. Sahoo	An experimental investigation towards calibration of a shock tube and stagnation heat flux determination	International Journal of Aerodynamics	2018	6	1	18	40
58	S. Pandian, S. L. N. Desikan and N. Sahoo	Experimental investigation of starting characteristics and wave propagation from a shallow open cavity and its acoustic emission at supersonic speed	Physics of Fluids	2018	30		16104-1	16104-11
59	Vigneshwaran K, Gurpreet Singh Sodhi,	Experimental investigation of a Cast-Steel based Thermal Energy Storage System, Energy Procedia	Energy Procedia	2018	176		627	

	Muthukumar P, Arvind VK, Balamurugan G, Sriram S, Senthilmurugan S							
60	B Kiran Naik, P Muthukumar, P Sunil Kumar	A novel finite difference model coupled with recursive algorithm for analyzing heat and mass transfer processes in a cross flow dehumidifier/regenerator	International Journal of Thermal Sciences	2018	131		1	
61	P Muthukumar, Alok Kumar, Nithin N Raju, K Malleswararao, Muhammad M Rahman	A critical review on design aspects and developmental status of metal hydride based thermal machines	International Journal of Hydrogen Energy	2018	43	37	17753	
62	Lav Kumar Kaushik, P Muthukumar	Life cycle Assessment (LCA) and Techno-economic Assessment (TEA) of medium scale (5–10 kW) LPG cooking stove with two-layer porous radiant burner	Applied Thermal Engineering	2018	133		316	
63	Niraj Kumar Mishra, P Muthukumar, Snehasish Panigrahy	A Review on Clean Combustion Within Porous Media	Air Pollution and Control	2018			209	
64	S. Shyam, B. Mehta, P. K. Mondal, S. Wongwises	Investigation into the thermo-hydrodynamics of ferrofluid flow under the influence of constant and alternating magnetic field by InfraRed Thermography	International Journal of Heat and Mass Transfer	2019	135		1233	17779
65	P. Kaushik, P. K. Mondal, P. K. Kundu, S. Wongwises	Rotating electroosmotic flow through a polyelectrolyte-grafted microchannel: An analytical solution	Physics of Fluids	2019	31	2	22009	18
66	H. Gaikwad, P. Baghel, R. Sarma, P. K. Mondal	Transport of neutral solutes in a viscoelastic solvent through a porous microchannel	Physics of Fluids	2019	31	2	22006	34
67	S. Dutta, P. K. Mondal, P. Goswami	Slipping hydrodynamics of Powell-Eyring fluid in a cylindrical microchannel under electrical double layer phenomenon	Physica Scripta	2019	94	2	25002	326
68	A. Gogoi, K. Anki Reddy, P. K. Mondal	Multilayer Graphene Oxide Membrane in Forward Osmosis: Molecular Insights	ACS Applied Nano Materials	2018	1	9	4450	224
69	R. Sarma, N. Deka, K. Sarma, P. K. Mondal	Electroosmotic flow of Phan-Thien–Tanner fluids at high zeta potentials: An exact analytical solution	Physics of Fluids	2018	30	6	62001	
70	G. Kunti, P. K. Mondal, A. Bhattacharya, S. Chakraborty	Electrothermally modulated contact line dynamics of a binary fluid in a patterned fluidic environment	Physics of Fluids	2018	30	9	92005	

71	P. K. Mondal, S. Chaudhry	Effects of gravity on the thermo-hydrodynamics of moving contact lines	Physics of Fluids	2018	30	4	42109	
72	H. S. Gaikwad, P. K. Mondal, S. Wongwises	Softness induced enhancement in net throughput of non linear bio fluids in nanofluidic channel under EDL phenomena	Scientific Reports - Nature	2018	8	1	7893-1	
73	H. S. Gaikwad, A. Roy, P. K. Mondal, N. Chimres, S. Wongwises	Irreversibility analysis in a slip aided electroosmotic flow through an asymmetrically heated microchannel: The effects of joule heating and the conjugate heat transfer	Analytica Chimica Acta	2018	1045		85	
74	A. Mukherjee, P. K. Mondal	Analysis of Heat Transfer Through Optically Participating Medium in a Concentric Spherical Enclosure: The Role of Dual-Phase-Lag Conduction and Radiation	Journal of Thermal Science and Engineering Applications	2018	10	4	41022	
75	R. Sarma, A. Nath, T. Konwar, P. K. Mondal, S. Wongwises	Thermo-hydrodynamics of a viscoelastic fluid under asymmetrical heating	International Journal of Heat and Mass Transfer	2018	125		515	
76	Purnendu Kumar Mandal, P.S. Robi,	Influence of micro-alloying with silver on microstructure and mechanical Properties of Al-Cu alloy	Materials Science and Engineering A.	2018	A722	1	99	
77	D. G. Gunjo, P. Mahanta and P. S. Robi	Melting enhancement of a latent heat storage with dispersed Cu, CuO and Al ₂ O ₃ nanoparticles for solar thermal applications	Renewable Energy. 121C (2018)pp: 652-665.	2018	121		652	
78	S. Behera, P. Kumari	Free Vibration of Levy-type Rectangular Laminated Plates using Efficient Zig-Zag Theory	Advances in Computational Design	2018	3		213	
79	Poonam Kumari, Shranish Kar	Static behavior of arbitrarily supported composite laminated cylindrical shell panels: An analytical 3D elasticity approach	Composite Structures	2019	207		949	043105-13
80	Agyapal Singh, Poonam Kumari, and Rupam Hazarika	Analytical Solution for Bending Analysis of Axially Functionally Graded Angle-Ply Flat Panels	Mathematical Problems in Engineering	2018	ID 2597484		1	
81	Sandeep Singh, R. Tiwari	Model Based Identification of Crack and Bearing Dynamic Parameters In Flexible Rotor Systems Supported with an Auxillary Active Magnetic Bearing	Mechanism and Machine Theory	2018	122	https://doi.org/10.1016/j.mechmachtheory.2018.01.006	292	524
82	P. Gangsar, R. Tiwari	Multi-fault Diagnosis of Induction Motor at Intermediate Operating Conditions using Wavelet Packet Transform and Support Vector Machine	ASME, Journal of Dynamic Systems, Measurement and Control	2018	140	8		50-18
83	J. S. Rapur, R. Tiwari	Automation of Multi-Fault Diagnosing of Centrifugal Pumps	Journal of the Brazilian Society	2018	40	https://doi.org/1	278	111

		using Multi-Class Support Vector Machine with Vibration and Motor-Current Signals in Frequency Domain	of Mechanical Sciences and Engineering (BMSE)			0.1007/s40430-018-1202-9		
84	R. S. Srinivas, R. Tiwari and Ch. K. Babu	Application of Active Magnetic Bearings in Flexible Rotordynamic Systems - A State-of-the-Art Review	Mechanical Systems and Signal Processing	2018	106		537	665
85	A. Panda, J. S. Rapur and R. Tiwari	Prediction of Flow Blockages and Impending Cavitation in Centrifugal Pumps using Support Vector Machine (SVM) Algorithms Based on Vibration Measurements	Measurement	2018	130		44	
86	P. Gangsar and R. Tiwari	A Support Vector Machine based Fault Diagnostics of Induction Motors for Practical Situation of Multi-Sensor Limited Data Case Measurement	Measurement	2018	135		694	
87	Arnab Chanda and S. K. Dwivedy	Nonlinear dynamic analysis of flexible workpiece and tool in turning operation with delay and internal resonance	Journal of Sound and Vibration	2018	434		358	17
88	Devarshi Kashyap, P. Kishore Kumar, and S. Kanagaraj	4D printed porous radiopaque shape memory polyurethane for endovascular embolization	Additive Manufacturing	2018	24		687	
89	R. Vignesh Babu, S. Kanagaraj	Thermal, electrical and mechanical characterization of microwave sintered Copper/carbon nanotubes (CNT) composites against sintering duration, CNT diameter and its concentration	Journal of Materials Processing Tech	2018	258		296	298
90	R. Vignesh Babu, Avnish Verma Kunwar, M. Charan, S. Kanagaraj	Tweaking the diameter and concentration of carbon nanotubes and sintering duration in Copper based composites for heat transfer applications	Advanced Powder Technology	2018	29		2356	572
91	S Pushp, A Saikia, A Khan, SM Hazarika	A cognitively enhanced collaborative control architecture for an intelligent wheelchair: Formalization, implementation and evaluation	Cognitive Systems Research	2018	49		114	
92	R Bhattacharyya, SM Hazarika	Object affordance driven inverse reinforcement learning through conceptual abstraction and advice	Paladyn Journal of Behavioral Robotics	2018	9	1	277	56
93	U Talukdar, SM Hazarika, JQ Gan	A Kernel Partial least square based feature selection method	Pattern Recognition	2018	83		91	
94	U Talukdar, SM Hazarika, JQ Gan	Motor imagery and mental fatigue: inter-relationship and EEG based estimation	Journal of computational neuroscience	2019	46	1	55	711
95	Dipankar Bora, Manoj Kumar, Sachin Singh Gautam	Ductile fracture at high velocity impact of cylindrical tubes	Materials Today: Proceedings	2018	5		18983	309

96	S. Panda, A Kumar	A design of active constrained layer damping treatment for vibration control of circular cylindrical shell structure	Journal of Vibration and Control	2018	24	24	5811	2367
97	A Kumar, S Panda, V Narsaria, A Kumar	Augmented constrained layer damping in plates through the optimal design of a 0-3 viscoelastic composite layer.	Journal of Vibration and Control	2018	24	23	5514	127
98	A Kumar, S Panda, A Kumar, V Narsaria	Performance of a graphite wafer-reinforced viscoelastic composite layer for active-passive damping of plate vibration	Compoiste Structures	2018	186		303	294
99	Manish Kumar Dubey and Satyajit Panda	Electromechanical properties and actuation capability of an extension mode piezoelectric fiber composite actuator with cylindrically periodic microstructure	Archive of Applied Mechanics	2018	88		2261	106
100	Singh S. S., Baruah P. K., Khare A. and Joshi S. N.	Incubation studies and the threshold for surface damage and cavity formation in the processing of polycarbonate by Nd:YAG laser	Optics and Laser Technology	2018	108		592	
101	N Devarani, SN Joshi	Surface Alloying of Ti-6Al-4V on P20 Mold Steel using Electric Discharge Processing (EDP)	Materials Today: Proceedings	2018	5	2	8523	
102	G Bolar, M Mekonen, A Das, SN Joshi	Experimental Investigation on Surface Quality and Dimensional Accuracy during Curvilinear Thin-Wall Machining	Materials Today: Proceedings	2018	5	2	6461	
103	G Bolar, A Das, SN Joshi	Measurement and analysis of cutting force and product surface quality during end-milling of thin-wall components	Measurement	2018	121		190	
104	R. Kant and S N Joshi	Numerical investigations into influence of scanning path curvature on deformation behavior during curvilinear laser bending of magnesium sheets	Journal of Thermal Stresses	2018	41	3	313	18991
105	SS Singh, PK Baruah, A Khare, SN Joshi	Effect of laser beam conditioning on fabrication of clean micro-channel on stainless steel 316L using second harmonic of Q-switched Nd: YAG laser	Optics and Laser Technology	2018	99		107	5841
106	Bipul Das, Sukhomay Pal, Swarup Bag	Monitoring of friction stir welding process using main spindle motor current	Journal of The Institution of Engineers (India): Series C	2018	99	6	711	
107	R. Shufen and U.S. Dixit	A review of theoretical and experimental research on various autofrettage processes	ASME Journal of Pressure Vessel Technology	2018	140	5		8531
108	R. Shufen and U.S. Dixit	A review of theoretical and experimental research on various autofrettage processes	ASME Journal of Pressure Vessel Technology	2018	140	5	50802-1	287
109	U.S. Dixit, V. Yadav, R.G. Naryanan and N. Bhardwaj	Friction in micromanufacturing: a review	Journal of Micromanufacturin g	2018	1	1	76	716

110	K.K. Gajrani, M.R. Sankar and U.S. Dixit	Environmentally friendly machining with MoS ₂ filled mechanically micro-textured cutting tools	Journal of Mechanical Science and Technology	2018	32	8	3797	
111	P.P. Dutta, K. Kalita and U.S. Dixit	Electromagnetic-force-assisted bending and straightening of AH36 steel strip by laser irradiation	Lasers in Manufacturing and Materials Processing	2018	5	3	201	300
112	R. Shufen and U.S. Dixit	An analysis of thermal autofrettage process with heat treatment	International Journal of Mechanical Sciences	2018	144		134	226
113	V. Kumar and U.S. Dixit	A model for the estimation of hardness of laser bent strips	Optics and Laser Technology	2018	107		491	16
114	A. Bisht, V. Yadav, S. Suwas and U.S. Dixit	Deformation behavior of AM30 magnesium alloy	Journal of Materials Engineering and Performance	2018	27	9	4900	6550
115	N. Alom and U. K. Saha	Influence of blade profiles on Savonius rotor performance: Numerical simulation and experimental validation	Energy Conversion and Management	2019	186		267	50802-15
116	N. Alom and U. K. Saha	Evolution and progress in the development of Savonius wind turbine rotor blade profiles and shapes	ASME Journal of Solar Energy Engineering	2019	141	6	030801-15	91
117	N. Alom and U. K. Saha	Examining the aerodynamic drag and lift characteristics of a newly developed elliptical-bladed Savonius rotor	ASME Journal of Energy Resources Technology	2018	141	5	051201-12	
118	N. Alom and U. K. Saha	An insight into the drag and lift characteristics of modified Bach and Benesh profiles of Savonius wind rotor	Energy Proredia	2018	144		50	221
119	A. Sarkar and U. K. Saha	A critique on the research activities and potential benefits of dual fuel diesel engine run on biogas and biofuel-blended biodiesel	ASME Journal of Engineering for Gas Turbines and Power	2019	141		6	14
120	A. Sarkar and U. K. Saha	Role of global fuel-air equivalence ratio and preheating on the behavior of biogas fueled diesel engine under dual fuel mode	Fuel	2018	232		743	145
121	P. K. Talukdar, V. Kulkarni and U. K. Saha	Performance estimation of Savonius wind and Savonius hydrokinetic turbines under identical power input	AIP Journal of Renewable and Sustainable Energy Reviews	2018	10	5	064704-1	277
122	P. K. Talukdar, V. Kulkarni and U. K. Saha	Field testing of model helical-bladed hydrokinetic turbine for small-scale power generation	Renewable Energy	2018	127		158	
123	A. Zayoud, P. Mahanta and U. K. Saha	A Novel method of pure oxy-fuel circulating fluidized bed combustion with zero recirculation flue gas – Experimental validation	Materials Today: Proceedings	2018	5		50	050801-14
124	Ashish J. Chaudhari, Vinayak	State-of-the-art technology in variable compression ratio	Sadhana	2018	43	211		090801-26

	Kulkarni and Niranjana Sahoo	mechanism for spark ignition engine						
125	Hotta, S.K., Sahoo, N., Mohanty, K. and Mahanta, P.	Effect of Compression Ratio on the Performance of a Constant Speed Spark Ignition Engine Operating on Raw Biogas	Journal of Energy and Environmental Sustainability	2018	5		53	754
126	Hotta, S.K., Sahoo, N., Mohanty, K. and Mahanta, P.	Effect of Compression Ratio on the Performance of a Constant Speed Spark Ignition Engine Operating on Raw Biogas	Journal of Energy and Environmental Sustainability	2018	5		53	4018031-13
127	Hotta, S.K., Sahoo, N. and Mohanty, K.	Ignition Advancement Study for Optimized Characteristics of a Raw Biogas Operated Spark Ignition Engine	Journal of green energy	2018	16	1	101	064704-15
128	Kumar, A., Singh, A., Kumar, A., Singh, M.K., Mahanta, P. and Mukhopadhyay, S.C.	Sensing Technologies for Monitoring Intelligent Buildings: A Review.	Bioresource technology	2018	261		294	49
129	Gunjo, D.G., Jena, S.R., Mahanta, P. and Robi, P.S.,	Melting enhancement of a latent heat storage with dispersed Cu, CuO and Al ₂ O ₃ nanoparticles for solar thermal application.	IEEE Sensors Journal,	2018	18	12	4847	56
130	Deb, S., Tammi, K., Kalita, K. and Mahanta, P.,	Impact of Electric Vehicle Charging Station Load on Distribution Network.	Renewable Energy	2018	121		652	127
131	Zayoud, A., Mahanta, P. and Saha, U.K.,	A Novel Method of Pure Oxy-fuel Circulating Fluidized Bed Combustion with Zero Recirculation Flue Gas– Experimental Validation.	Energies	2018	11	1	178	
132	Deb, S., Tammi, K., Kalita, K., & Mahanta, P.	Review of recent trends in charging infrastructure planning for electric vehicles	Wiley Interdisciplinary Reviews: Energy and Environment	2018	7	6		
133	Kumar, G., Kalita, K., Tammi, K.	Analysis of Bridge Currents and UMP of an Induction Machine With Bridge Configured Winding Using Coupled Field and Circuit Modeling	IEEE Transactions on Magnetics	2018	54	9		57
134	Rakesh Bhadra, Pardeep Pankaj, Pankaj Biswas and U. S. Dixit	Thermo-mechanical analysis of CO ₂ Laser butt welding on AISI 304 steel thin plates	International Journal of Steel Structures	2018	DOI 10.1007/s13296-018-0085-z, pp 1-14 (accepted). February 2019, Volume 19, Issue 1, pp 14–27			305

135	Arun Kadian & Biswas Pankaj	The study of material flow behaviour in dissimilar material FSW of AA6061 and Cu-B370 alloys plates	Journal of Manufacturing Processes	2018	34, Part A			4860
136	V. Kumar, U.S. Dixit and J. Zhang	Determination of thermal conductivity, absorptivity and heat transfer coefficient during Laser-based manufacturing	Measurement	2019	131	January	319	
137	V. Kumar, U.S. Dixit and J. Zhang	Determination of thermal conductivity, specific heat capacity and absorptivity during Laser-based materials processing	Measurement	2019	139	June	213	

Conference/Workshop/Seminar/Symposia (PERIOD: 1 APRIL 2018 – 31 MARCH 2019)

Total No. of papers published in Conference Proceedings: 122


Format for submission of papers published in Conference Proceedings

Sl. No.	Authors	Paper Title	Name of Conference/ Workshop/ Seminar/ Symposia Proceedings	Year	Starting Page	Ending Page
1	Deka, H., Biswas, G., and Dalal, A.,	Oscillation Dynamics of Falling Drops”	Paper No. FMFP2018-148, Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, 2018, Indian Institute of Technology Bombay, Mumbai, India	2018		
2	Sarma, B., Basu, D. N., and Dalal, A.,	“Universal Scaling Laws in Drop-on-demand Generation from A Yarn”	Paper No. FMFP2018-467, Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, 2018, Indian Institute of Technology Bombay, Mumbai, India.	2018		
3	Shahapure, V., Sarma, B., Basu, D. N., and Dalal, A.,	“High Speed Imaging and Analysis of Drop Formation”	”, Paper No. FMFP2018-680, Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, 2018, Indian Institute of Technology Bombay, Mumbai, India.	2018		
4	Deka, H., Biswas, G., and Dalal, A.,	“A Coupled Level Set and Volume-of-fluid Method for Modelling Two-phase Flows”,	Paper No. IC-RIDME18: 194, International Conference on Recent Innovations and Developments in Mechanical Engineering, National Institute of Technology Meghalaya, Shillong, India, November 8 – 10, 2018.	2018		
5	Kotoky, S., Dalal, A., and Natarajan, G., 2018	, “The Role of Particle Diameter on the Fluidization Behavior in a Bubbling Gas-Solid Fluidized Bed”	”, Paper No. FMFP2018-680, Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, 2018, Indian Institute of Technology Bombay, Mumbai, India.	2018		
6	Nath, B., Borthakur, M.P., Biswas, G., and Dalal, A.,	, “Influence of Electric Field in the Lateral Migration of a Drop Inside a Microchannel”	Paper No. IC-RIDME18: 245, International Conference on Recent Innovations and Developments in Mechanical Engineering, National Institute of Technology Meghalaya, Shillong, India, November 8 – 10, 2018.	2018		
7	Sarma, B., Pokhrel, S., Kumar, S., Dalal,	“Prediction of Sauter Mean Diameter of Spray During	”, Paper No. IC-RIDME18: 251, International Conference on Recent	2018		

	A., Bandyopadhyay, D., and Basu, D. N.	Electric Discharge Mediated Bursting of a Droplet”	Innovations and Developments in Mechanical Engineering, National Institute of Technology Meghalaya, Shillong, India, November 8 – 10, 2018.			
8	Parmananda, P., Dalal, A., and Natarajan, G.	“Three-dimensional Analysis of Non-Boussinesq Natural Convection with Radiative Heat Transfer in a Vertical Seven Rod Bundle”	Paper No: IHTC16-23267, 16th International Heat Transfer Conference, Beijing, China.	2018		
9	Dalal, A., Gupta, A., Gupta A., Mukherjee, P.P.	“Modeling of Thermal Management in Automotive Battery Modules”	Paper No: 538, 4th International Conference on Computational Methods for Thermal Problems, Indian Institute of Science, Bangalore, India.	2018		
10	Chayanika Nath and S. M. Hazarika	A Hybrid Visual Information Representation and Reasoning Paradigm Towards Video Analysis.	, Lecture Notes in Computer Science, (To Appear). Springer, June 18-22, 2018, Edinburgh, UK.	2018		
11	D.V.N. Lakshmi, Muthukumar P	Design and development of mixed mode forced convection solar dryer for drying of curcuma zeodaria	Presented at 12th International Conference on Thermal Engineering: Theory and Applications, February 23-26, 2019, Gandhinagar, India	2019		
12	Kiran Naik B and Muthukumar P	Energy Exergy and Entransy Analyses of an Air Cooled Condenser Employed in a Vapour Compression Chiller	Presented at 12th International Conference on Thermal Engineering: Theory and Applications, February 23-26, 2019, Gandhinagar, India	2019		
13	Sunku Prasad J, Saurabh Dongare, Anandalakshmi R, Muthukumar P	Numerical Investigation of PCM based Heat Sinks under Constant and Variable Heat Load Conditions	Presented at 12th International Conference on Thermal Engineering: Theory and Applications, February 23-26, 2019, Gandhinagar, India	2019		
14	Lakshmi DVN, Apurba Layek, Muthukumar, P	Evaluation of Convective Heat Transfer Coefficient of Herbs Dried in a Mixed Mode Solar Dryer	. Presented at ICUE 2018 on: Green Energy for Sustainable Development, Phuket, Thailand, 24-26 Oct 2018	2018		
15	Kaushik L K, Muthukumar P	Experimental Analysis of a Porous Radiant Pressurized Cook Stove by Using a Blend of Waste Cooking Oil (WCO) and Kerosene	Presented at ICUE 2018 on: Green Energy for Sustainable Development, Phuket, Thailand, 24-26 Oct 2018	2018		
16	Lav Kumar Kaushik, Muthukumar P	Performance Assessment of a Porous Radiant Cook Stove Fueled with Blend of Waste Vegetable Oil (WVO) and Kerosene	Presented at The 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong	2018		
17	Sangjukta Devi, Nirajan Sahoo, Muthukumar P	Combustion of biogas in Porous Radiant Burner: Low emission combustion	. Presented at The 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong	2018		
18	Gurpreet Singh Sodhi, Vigneshwaran K, Abhishek Kumar Jaiswal, Muthukumar P	Assessment of Heat Transfer Characteristics of a Latent Heat Thermal Energy Storage System: Multi Tube Design	. Presented at The 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong	2018		
19	Nithin N. Raju, Muthukumar P, K. Malleswararao	Determination of Absorption Conditions for LaNi _{4.7} Al _{0.3} Based Hydrogen Storage	5th International Conference on Computation Methods for Thermal Problems (Thermacomp 2018), Bangalore, India, July 9-11, 2018	2018		

		Device: A Numerical Investigation			
20	Gurpreet Singh Sodhi, Muthukumar P	Effect of eccentricity on the charging of a multi tube Latent Heat Storage System	Presented at 5th International Conference on Computational Methods for Thermal Problems (THERMACOMP – 2018), Indian Institute of Science, Bangalore, July 9-11, 2018	2018	
21	Mrinal Bhowmik, Muthukumar P, R Anandalakshmi	“Numerical Study on Dehumidification Performance of a Cross-Flow Liquid Desiccant Adiabatic Dehumidifier with Various Halide Salt desiccants”	Presented at 5th International Conference on Computational Methods for Thermal Problems (THERMACOMP – 2018). IISc Bangalore - 9-11 July, 2018	2018	
22	M. Ravi Sankar	“Nano-finishing of Bio-Implants using Polymer Rheological Abrasive Complex Suspensions”	4th International Symposium on Advances in Sustainable Polymers (ASP-2018), 8-11 January, 2018, IIT Guwahati, India.	2018	
23	R.R. Behera, A.H., L.Pandey., M. Ravi Sankar,	“Laser Surface Bio-Coating of Functionally Graded TiO ₂ -HA _p on Textured Ti Alloy for Enhancing Bioactivity and	Cell Proliferation” 2018.	2018	
24	Sahu A., Thakur, R, Agrawal V., and Gautam S. S.	A comparative study of explicit time integration algorithms for non-linear systems	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida, October 3rd – 5th , 2018.	2018	
25	Saipraneeth G. and Gautam S. S.	Nonlinear finite element analysis of a gecko spatula adhesion on a rigid substrate	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida, October 3rd – 5th , 2018	2018	
26	Bora D., Kumar M., and Gautam S. S.	Simulation of ductile fracture at high velocity impact of cylindrical tubes	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida, October 3rd – 5th , 2018.	2018	
27	Agrawal V., and Gautam S. S.	An isogeometric based study of mortar contact algorithm for frictionless sliding	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida, October 3rd – 5th , 2018.	2018	
28	Agrawal. V, and Gautam S. S.	A Comparative Study of Contact Problem Solution Based on Different Isogeometric Contact Formulations	13th World Congress on Computational Mechanics / 2nd Pan American Congress on Computational Mechanics (WCCM 2018)., July 23rd – 27th , 2018..	2018	
29	Deepak Sharma, Syed Zaheer Basha and Sandula Ajay Kumar, EMO 2019.	Diversity Over Dominance Approach for Many-Objective Optimization On Reference-Points-based Framework” “In: Deb K. et al. (eds) Evolutionary Multi-Criterion Optimization	Lecture Notes in Computer Science, 11411, pp 278 – 290. Springer, Cham	2019	
30	Deepak Sharma, Sukhomay Pal, Aayush Sahay, Puneet Kumar, Gaurav	“Local Search Heuristics based Genetic Algorithm for Capacitated Vehicle Routing Problem”	2nd International Conference on Computational Methods in Manufacturing (ICMCM), 8 – 9 March 2019, IIT Guwahati, India.	2019	

	Agarwal, and Katravath Vignesh					
31	Riddhiman Saikia and Deepak Sharma	“Hybridizing Evolutionary Multi-Objective Algorithm Using Random Mutations and Local Searches”	in 2nd International Conference on Computational Methods in Manufacturing (ICMCM), 8 – 9 March 2019, IIT Guwahati, India.	2019		
32	Utpal Kiran, Subhajit Sanfui, Shashi Kant Ratnakar, Sachin Singh Gautam, and Deepak Sharma	“Comparative Analysis of GPU-based Solver Libraries for A Sparse Linear System of Equations”	2nd International Conference on Computational Methods in Manufacturing (ICMCM), 8 – 9 March 2019, IIT Guwahati, India	2019		
33	P. Paul, K.S.R.K. Murthy and D. Chakraborty	Influence of the notch length on the optimal radial location of strain gage in a single edged notched plate	1st International Conference of Emerging Trends in Mechanical Engineering (ICETME 2018), 20-22 December, SRIT, Anantapur, Andhra Pradesh.	2018		
34	P. Paul, K.S.R.Krishna Murthy, and Debabrata Chakraborty	Effect of material properties on optimal radial strain gage locations in sharp V-notched configurations	3rd International Conference on Design, Analysis, Manufacturing & Simulation (ICDAMS-2018), 6–7 April, Saveetha School of Engineering, Chennai.	2018		
35	S. Sajith, K.S.R.K. Murthy, P.S. Robi	Accurate Estimation of Mixed Mode Stress Intensity Factors using Crack Flank Displacements	International Conference on Advances in Material and Manufacturing Engineering (ICAMME-2019), 15-17 March, Kalinga Institute of Industrial Technology, Bhubaneswar	2019		
36	S. Sajith, K.S.R.K. Murthy, P.S. Robi	Fatigue life prediction under mixed mode loading using equivalent stress intensity factor models	Proceedings of 3rd International Conference of Design, Analysis, Manufacturing & Simulation (ICDAMS 2018). April 6-7, Saveetha University, Chennai, India	2018		
37	S Sajith, KSRK Murthy, PS Robi	Estimation of stress intensity factors from crack flank displacements	3rd International Conference on Advances in Materials and Manufacturing Applications (IConAMMA 2018) August 16-18, Amrita School of Engineering, Bengaluru, India	2018		
38	K Gopala Krishna, K Yaswanth, B V K Patnaik, D Chakraborty, K S R K Murthy	Finite element FCG simulations of turbine disk	2nd National Aero Propulsion Conference NAPC-2018Dec 17-19, 2018, IIT Kharagpur, West Bengal	2018		
39	M.K. Hussain and K.S.R.K. Murthy	Numerical examination of sharp V-notches using notch-flank displacement collocation method	International Conference on Advances in Material and Manufacturing Engineering (ICAMME-2019), 15-17 March, Kalinga Institute of Industrial Technology, Bhubaneswar	2019		
40	M.K. Hussain and K.S.R.K. Murthy	Numerical estimation of notch stress intensity factors of sharp V-notches	Proceedings of 3rd International Conference on Design, Analysis, Manufacturing & Simulation (ICDAMS-2018), 6-7 April, Saveetha School of Engineering, Chennai.	2018		
41	M. K. Hussain and K. S. R. K. Murthy	Comparison of some least-squares methods for evaluation of the notch stress intensities of sharp V-notched configurations	3rd International Conference on Advances in Materials and Manufacturing Applications (IConAMMA-2018), 16–18 August, Amrita School of Engineering, Bengaluru, India	2018		

42	M.K. Hussain and K.S.R.K. Murthy	Evaluation of notch stress intensities at sharp V-notches using a point substitution method	Second International Conference On Structural Integrity (ICONS-2018), 14-17 December, Indian Institute of Technology Madras, Chennai.	2018		
43	Debabrata Gayen, D. Chakraborty and R. Tiwari	Parametric study on free vibration and instability of a functionally graded cracked shaft in a rotor-disc-bearing system: finite element approach	3rd International Conference on Design, Analysis, Manufacturing & Simulation (ICDAMS 2018), April 6-7, 2018, Saveetha University, Chennai, India. Paper No. 161	2018		
44	Kishor Kumar Gajrani, Y. Bishal Singha, Mamilla Ravi Sankar and Uday Shanker Dixit,	Tribological Performance of Graphite, CaF ₂ and MoS ₂ Coated Mechanical Micro-Textured Self-Lubricating Cutting Tool Material	CPIE-2018, 27th June 2018, Bangkok.	2018		
45	Kishor Kumar Gajrani, Y. Bishal Singha, Mamilla Ravi Sankar and Uday Shanker Dixit	Tribological Performance of Graphite, CaF ₂ and MoS ₂ Coated Mechanical Micro-Textured Self-Lubricating Cutting Tool Material	CPIE-2018, 27th June 2018, Bangkok.	2018		
46	M. Ravi Sankar, Vijay Kumar Jain, K.P. Rajukar, 	"Rheological and Nano-finishing Studies of Elastically Dominant Multiple Polymers Blend Abrasive Flow Finishing Medium	19th CIRP Conference on Electro Physical and Chemical Machining, 23-27 April 2018, Bilbao, Spain.	2018		
47	Monami Bhuyan, Arnab Sarmah, Kishor Kumar Gajrani, Ashutosh Pandey, Tushar G. Thulkar, M. Ravi Sankar	"State of Art on Minimum Quantity Lubrication in Grinding Process"	8th International Conference of Materials Processing and Characterization (ICMPC), 16-18 March, 2018, GRIET, Hyderabad, India.	2018		
48	Swarup Banik, Navneet Kalita, Kishor Kumar Gajrani, Ramchandra Kumar, M. Ravi Sankar	"Recent Trends in Laser Assisted Machining of Ceramic Materials"	, 8th International Conference of Materials Processing and Characterization (ICMPC), 16-18 March, 2018, GRIET, Hyderabad, India	2018		
49	Kishor Kumar Gajrani, M. Ravi Sankar,	"Cutting Fluids Emissions in Mechanical Machining and its Adverse Effects on Biodiversity"	21stADNAT Convention and International Symposium on Biodiversity and Biobanking (BIODIVERSE-2018), 27-29 January, IIT Guwahati, India, 2018	2018		
50	Sarita Bharti, S Senthilvelan,	SURFACE DURABILITY OF POLYAMIDE 66 SPUR GEAR UNDER DRY AND OIL LUBRICANT CONDITION	FISITA 2018 World Automotive Congress, 2-5 October 2018, Chennai,India	2018		
51	Adidtya Kumar, Karthick Pandia, S Senthilvelan	BENDING FATIGUE PERFORMANCE OF INJECTION-MOLDED CARBON NANOTUBE REINFORCED POLYPROPYLENE SPUR GEARS	FISITA 2018 World Automotive Congress, 2-5 October 2018, Chennai,India	2018		
52	Anwesa Barman, Manas Das	Analysis of forces during spot finishing of titanium alloy using novel tool in magnetic	Proceedings of the 13th Manufacturing Science and Engineering Conference MSEC2018, June 18-22, 2018, Texas	2018		

		field assisted finishing process,	A&M University, College Station, TX, USA, paper ID MSEC2018-6352.			
53	S. Shyam, B. Mehta and P. K. Mondal	“Thermohydrodynamics of ferrofluidic flow with periodic pulsation under the effect of static and alternating magnetic field-: a numerical study”	Proceedings of the 16th International Heat Transfer Conference, IHTC-16 August 10-15, 2018.	2018		
54	P.V.S.S.Sridhar, Shailesh kumar, Kaushik Pal, Bhaskar Kumar Chakraborty, Rituraj Bhattacharjee, Subhashis Majumder, Pankaj Biswas, Pinakeswar Mahanta	Experimental Investigation and Mechanical Characterization of Double Sided Submerged Arc Welding of AISI 304 Austenitic Stainless Steel”	AIMTDR-2018, December 13-15, College of Engineering, Anna University, Chennai	2018		
55	Pardeep Pankaj and Pankaj Biswas	Study of thermally induced residual stress and deformation in the CO2 laser welding of AISI 304 stainless steel thin plates	AIMTDR-2018, December 13-15, College of Engineering, Anna University, Chennai	2018		
56	Pardeep Pankaj and Pankaj Biswas	Dissimilar FSW of DH36 shipbuilding steel and mild steel	AIMTDR-2018, December 13-15, College of Engineering, Anna University, Chennai	2018		
57	Nandan Kanan Das, Arun Kadian, Avinish Tiwari, Pardeep Pankaj and Pankaj Biswas	“Transient Thermal Analysis of Friction stir welding of AA6061”	CPIE-2018, Thailand, Bangkok.	2018		
58	Avinish Tiwari, Pardeep Pankaj, Nandan Kanan Das and Pankaj Biswas,	“ Joint Quality Evaluation of Shipbuilding Grade DH36 Steel Using WC-10% Co Alloy Based FSW Tool	AIMTDR 2018, Anna University, Chennai	2018		
59	Kumar Abhishek and Biswas Pankaj	“Effect of Process Parameters of Plasma Arc Preheating on Low Carbon Steel”,	International Conference on Computational Methods in Manufacturing March 8-9, IIT Guwahati	2018		
60	Avinish Tiwari, Pardeep Pankaj, Piyush Singh, Pankaj Biswas and Sachin D. Kore	FSW of DH36 shipbuilding grade steel	5th International Conference on Production and Industrial Engineering (CPIE-2018), 26-29 June Bangkok, Thailand	2018		
61	Sridhar P V S S, Vishnu Nair, Pankaj Biswas, and Pinakeswar Mahanta	Thermomechanical analyses of Single Sided Single pass Submerged arc welding of AISI 304 Austenitic Stainless Steel	ICMM 2019, Mar 8-9, IIT Guwahati.	2019		
62	Saurav Suman, Avinish Tiwari, Pardeep Pankaj, Pankaj Biswas	Numerical study of welding distortion in saw welded creep strength enhanced ferrite steel joint	International Conference on Recent Innovations and Developments in Mechanical Engineering, Nov-18, NIT Meghalaya.	2018		
63	Saurav Suman, Avinish Tiwari, Pardeep Pankaj, Pankaj Biswas, Basil Kuriachen, Abhijit Sinha	Modelling of welding sequences for minimization of weld induced distortions and residual stresses	AIMTDR, Dec-18, Anna University	2018		

64	Saurav Suman, Pardeep Pankaj, Avinish Tiwari, Pankaj Biswas, Basil Kuriachen, Abhijit Sinha	Effect of pre and post welding processes on the distortion pattern in a SAW welded butt joint of P91 steel plate	AIMTDR, Dec-18 Anna University	2018		
65	Bordoloi D.J. and R. Tiwari	Monitoring of Induction Motor Mechanical and Electrical Faults by Optimum Multiclass-Support Vector Machine Algorithms Using Genetic Algorithm, Proceedings of IFToMM	10th International Conference on Rotordynamics, September 23-27, 2018, Rio de Janeiro, Brazil.	2018		
66	P. Gangsar and R. Tiwari	Performance Analysis of Support Vector Machine and Wavelet Packet Transform based Fault Diagnostics of Induction Motor at Various Operating Conditions	Proceedings of IFToMM 9th International Conference on Rotordynamics, September 23-27, 2018, Rio de Janeiro, Brazil	2018		
67	J. S. Rapur and R. Tiwari, Multi Fault,	Diagnosis of Centrifugal Pumps with Time, Frequency and Wavelet based Features using Support Vector Machines	Proceedings of IFToMM 9th International Conference on Rotordynamics, September 23-27, 2018, Rio de Janeiro, Brazil.	2018		
68	N. Sarmah and R. Tiwari	Identification of Crack and Internal Damping Parameters using Full Spectrum Responses from a Jeffcott Rotor Integrated with an Active Magnetic Bearing	Proceedings of IFToMM 9th International Conference on Rotordynamics, September 23-27, 2018, Rio de Janeiro, Brazil	2018		
69	Siva Srinivas R. and R. Tiwari	Identification of Coupling Parameters in Flexibly Coupled Jeffcott Rotor Systems with Angular Misalignment and Integrated Through Active Magnetic Bearing,	Proceedings of IFToMM 9th International Conference on Rotordynamics, September 23-27, 2018, Rio de Janeiro, Brazil.	2018		
70	P. Dinesh, M.R. Behera, P.G. Ranjith, N. Muthu	Multiscale modelling of fracture in wet porous media	1st International Symposium on In-situ Modification of Deposit Properties for Improving Mining 2018 (IMDPIM2018), Taiyuan, China, 2018.	2018		
71	Saurav Suman, Avinish Tiwari, Pardeep Pankaj, Pankaj Biswas	Numerical study of welding distortion in saw welded creep strength enhanced ferrite steel joint	International Conference on Recent Innovations and Developments in Mechanical Engineering, Nov-18, NIT Meghalaya.	2018		
72	Saurav Suman, Avinish Tiwari, Pardeep Pankaj, Pankaj Biswas, Basil Kuriachen, Abhijit Sinha	Modelling of welding sequences for minimization of weld induced distortions and residual stresses	AIMTDR, Dec-18, Anna University.	2018		
73	Saurav Suman, Pardeep Pankaj, Avinish Tiwari, Pankaj Biswas, Basil Kuriachen, Abhijit Sinha	Effect of pre and post welding processes on the distortion pattern in a SAW welded butt joint of P91 steel plate,	AIMTDR, Dec-18 Anna University	2018		

74	A Mahapatro, P. Mahanta	Effect of Distributor Plate Design on The Hydrodynamics of A Pressurized Circulating Fluidized Bed	International Conference on Sustainable Energy and Environment Sensing, SEES-2018, 18-19 June, 2018 at Fitzwilliam College, University of Cambridge, in Cambridge city, United Kingdom	2018		
75	Bhaben Kalita and S. K. Dwivedy	Dynamic Analysis of a Parametrically Excited Golden Muga Silk Embedded Pneumatic Artificial	The 14th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC XIV), Lisbon, Portugal, September 10-13, 2018	2018		
76	Bhaben Kalita and S. K. Dwivedy	Forced Vibration Analysis of a Silk Fibre Embedded Pneumatic Artificial Muscle	The 6th International Conference on Robot Intelligence Technology and Applications (RITA 2018), Putrajaya, Malaysia, December 16-18, 2018	2018		
77	S. Mohanty, S. Sikder and S. K Dwivedy	Nonlinear analysis of rotational inertial double tuned mass damper by Harmonic balance method.	First International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018), NIT Meghalaya, India, November 2018	2018		
78	S. Mohanty and S. K Dwivedy,	Nonlinear analysis of a hybrid vibration absorber for super-harmonic resonance condition Western Pacific Commission for Acoustics (WESPAC 2018), CSIR-National Physical Laboratory	New Delhi, India, November 2018	2018		
79	A. Garg and S. K. Dwivedy	Theoretical and Experimental Investigation of Parametrically Excited Piezoelectric Energy Harvester	The 14th International Conference on Vibration Engineering and Technology of Machinery, VETOMAC XIV 2018, Lisbon, Portugal. DOI: 10.1051/mateconf/201821102009	2018		
80	Y Gawade, Sudip Shyam, Balkrishna Mehta	Pressure Characteristics of Single Isolated Ferrofluidic Slug under the Influence of External Magnetic Field	, 7th International and 45th national conference on Fluid Mechanics and Fluid power, Dec 10-12, 2018, IIT Bombay	2018		
81	Sudip Shyam, Balkrishna Mehta and Pranab Mondal	Thermo-hydrodynamics of ferrofluidic flow with periodic pulsation under the effect of static and alternating magnetic field	conference, IHTC 18, Beijing China, August 2018	2018		
82	Debabrata Chakraborty, Debaleena Chakraborty, and K. S R. K. Murthy	A finite element based procedure for accurate determination of mode I SIF of orthotropic materials based on two parameter strain series	9th ICCM 2018, August 6-10, 2018, University of Sapienza, Rome, Italy	2018		
83	Debabrata Gayen, D Chakraborty and Rajiv Tiwari	, Parametric study on free vibration and instability of a functionally graded cracked shaft in a rotor-disc-bearing system: finite element approach	3rd International Conference on Design, Analysis, Manufacturing & Simulation (ICDAMS 2018), April 6-7, 2018, Saveetha University, Chennai, India. Paper No. 161	2018		
84	D. Shankar, M. Pandey, D.N. Basu	Coupled-Neutronic-Thermalhydraulic Stability Appraisal of Supercritical Forced Flow Channels Following Lumped Parameter Approach	Proceedings of 16 International Heat Transfer Conference (IHTC-16), Beijing, China, August 10-15, 2018, Paper ID IHTC16-23961.	2018		

85	D. Shankar, M. Pandey, D.N. Basu	Coupled-Neutronic-Thermalhydraulic Stability Appraisal of Supercritical Forced Flow Channels Following Lumped Parameter Approach	Proceedings of 16 International Heat Transfer Conference (IHTC-16), Beijing, China, August 10-15, 2018, Paper ID IHTC16-23961	2018		
86	D. Hirakh, Mahanta. P	EFFECT of SUPERFICIAL VELOCITY on the HYDRODYNAMIC BEHAVIOUR of a CONICAL FLUIDIZED BED: EXPERIMENTAL and NUMERICAL STUDIES	Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP) December 10-12, 2018, IIT Bombay, Mumbai, India, PAPER NO. 826	2018		
87	Haque N, Singh A, and Saha UK	Particle image velocimetry investigation of fluid flow in fractured porous media	7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, IIT Bombay, Mumbai, India.	2018		
88	Talukdar PK, Rathod UH, Kulkarni V, and Saha UK	Performance evaluation of vented Savonius wind turbines through wind tunnel testing	7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, IIT Bombay, Mumbai, India.	2018		
89	Dabi M and Saha UK	Performance and emission characteristics of a compression ignition engine run on vegetable oil-diesel blends and diethyl ether,	7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, IIT Bombay, Mumbai, India.	2018		
90	Haque N, Singh A, and Saha UK	A noble method for rapid prototyping of porous micromodels applicable to enhanced oil recovery,	International Conference on Recent Advances in Fluid and Thermal Sciences, December 5 – 7, Dubai, UAE	2018		
91	Talukdar PK, Kulkarni V, and Saha UK	Performance characteristics of vertical-axis off-shore Savonius wind and Savonius hydro-kinetic turbines	Paper No. OMAE2018-78497, ASME 37th International Conference on Ocean, Offshore and Arctic Engineering, June 17 – 22, Madrid, Spain	2018		
92	Alom N, Borah B, and Saha UK	An insight into the drag and lift characteristics of modified Bach and Benesh profiles of Savonius wind rotor	4th International Symposium on Hydrogen Energy, Renewable Energy and Materials (HEREM), June 13 – 14, Bangkok, Thailand	2018		
93	Hotta, S. K., Sahoo, N., Mohanty K., Mahanta, P	Effect of compression ratio on the performance of a constant speed spark ignition engine operating on raw biogas	2nd International Conference on Sustainable Energy and Environmental Challenges, Jan 01-03, 2018, Indian Institute of Science, Bangalore, India	2018		
94	Hotta, S. K., Sahoo, N., Mohanty K., Mahanta, P	Effect of compression ratio on the performance of a constant speed spark ignition engine operating on raw biogas	2nd International Conference on Sustainable Energy and Environmental Challenges, Jan 01-03, 2018, Indian Institute of Science, Bangalore, India	2018		
95	Hotta, S. K., Rout, A. K., Sahoo, N., Mohanty K	Effect of compression ratio on the cyclic variability and thermal efficiency of a biogas fueled spark igniton engine	7th International and 45th National Conference on Fluid Mechanics and Fluid Power, Dec 10-12, 2018, Indian Institute of Technology, Bombay, India	2018		
96	Gunjo, D.G., Mahanta, P	and Robi, P.S., 2019. Designing and Utilizing of the Solar Water Heater for Digestion of Lignocellulosic Biomass.. In Advances in Waste Management (pp. 91-105). Springer, Singapore		2019		

97	N. Bhardwaj, R. Ganesh Narayanan and U.S. Dixit	Refilling of pinhole in friction stir spot welding using waste chips,	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
98	G.C. Verma, P.M. Pandey and U.S. Dixit,	Experimental investigations to evaluate machining accuracy of ultrasonic assisted milling on thin-walled structures	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
99	F. Chen, J. Zhang, M. Wu, X. Chu and U.S. Dixit	Design of open battery pack interface for electric vehicle personalization	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
100	A. Raj, A. Ch Borsaikia and U.S. Dixit	Manufacturing of autoclaved aerated concrete (AAC): present status and future trends	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
101	A. Bisht, A. Roy, U. S. Dixit, S. Suwas and V.V. Silberschmidt	Small-scale machining simulations	2nd International Conference on Computational Methods in Manufacturing March 8-9, 2019, IIT Guwahati.	2019		
102	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, Singapore from 23 to 28 June, 2019	2019		
103	Agyapal SINGH, Poonam KUMARI, Ehtesham HUSSAIN	Analytical Free Vibration Solution Of Functionally Graded Beam Having Longitudinal Stiffness Variation	10th International Conference on Material for Advanced Technologies, Singapore from 23 to 28 June, 2019	2019		
104	Susant Behera, Poonam Kumari	Free Vibration Analysis of Levy-type Hybrid Plates using Three-dimensional Extended Kantorovich Method	Second International Conference On Structural Integrity, ICONS2018, IIT Madras, 14-18 December, 2018	2018		
105	Ahmed F. and Kalita K	Controllability of Radial Displacement in Bearingless Switched Reluctance Motor with Bridge Configured Winding	August 2018, International symposium on Magnetic Bearings 16 (ISMB16), Beijing, China.	2018		
106	Arnab Kr. De	, A diffuse interface immersed boundary method for complex moving boundary problems	Journal of computational Physics , Vol. 366, 226-251, 2018.	2018		
107	A. K. De, V. Eswaran and P. K. Mishra	Dynamics of plumes in turbulent Rayleigh-Bénard convection	European Journal of Mechanics - B/Fluids , vol. 72, 164-178, 2018	2018		
108	G. Bolar and S. N. Joshi	An Experimental Investigation on Productivity and Product Quality during Thin-Wall Machining of Aluminum alloy 2024-T351	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
109	U. Sarma and S. N. Joshi	Effect of Laser Parameters on Laser Induced Plasma	7th International and 28th All India Manufacturing Technology, Design and	2018		

		Assisted Ablation (LIPAA) of Glass	Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.			
110	S. Das and S N Joshi	Thermal modelling and simulation of crater generation on wire electrode during wire EDM operation	7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	2018		
111	V. Singh and S N Joshi	Computation of End-Cutting-Edge Wear of Single Point Cutting Tool using Image processing	International Conference on Computational Methods in Manufacturing, March 8-9, 2019, IIT Guwahati	2019		
112	B Barkachary and S N Joshi	Numerical Simulation and Experimental Validation of Nanoindentation of Silicon using Finite Element Method	International Conference on Computational Methods in Manufacturing, March 8-9, 2019, IIT Guwahati	2019		
113	B. Barkachary and S N Joshi	Numerical modeling and simulation of plunge cutting of silicon using finite element method	, International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018) during November 8-10, 2018, NIT Meghalaya	2018		
114	J. Kumar, S. Das and S N Joshi	Three-dimensional numerical modelling of temperature profiles on the wire electrode during wire electric discharge machining process	, International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018) during November 8-10, 2018, NIT Meghalaya	2018		
115	U. Sarma and S N Joshi	Two-dimensional numerical investigation on the effect of laser parameters during laser indirect machining of glass	, International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018) during November 8-10, 2018, NIT Meghalaya	2018		
116	A. Iqbal, S. K. Sarma and M. Pandey	. Non-adiabatic Flow Characteristics of Dielectric Fluids in Trapezoidal Microchannel	Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power December 10-12, 2018, IIT Bombay, Mumbai, India	2018		
117	A. Kumar, R. Gupta, A. Iqbal, S. K. Sarma and M. Pandey	μ -PIV Measurement in a Microtube.	Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power December 10-12, 2018, IIT Bombay, Mumbai, India	2018		
118	K. Saikia, D.N. Basu, M. Pandey	Effect of Subcooling on the Instabilities of a Two-Phase Natural Circulation System	Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power December 10-12, 2018, IIT Bombay, Mumbai, India	2018		
119	R. Kumar, M. Pandey	Three Dimensional Simulation of a Condensing Taylor Bubble in a Microchannel	Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power December 10-12, 2018, IIT Bombay, Mumbai, India	2018		
120	S. Ahmed, M. Pandey	Study of Transport Phenomena in the Evaporator of Two-phase Capillary Devices using Thin Film Evaporation Model,	Joint 19th International Heat Pipe Conference and 13th International Heat Pipe Symposium, Pisa, Italy, June 10-14, 2018	2018		
121	R. Kalule, S.K. Sarma, A. Iqbal, M. Pandey	, A Study on the Onset of Annular Two-Phase Flow in a Microchannel,	12th International Conference on Thermal Engineering: Theory and Applications February 23-26, 2019, Gandhinagar, India	2019		

122	M.Pandey	Coupled-Neutronic-Thermalhydraulic Stability Appraisal of Supercritical Forced Flow Channels Following Lumped Parameter Approach	Proceedings of the 16th International Heat Transfer Conference, IHTC-16, August 10-15, 2018, Beijing, China	2018		
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Book, Book Chapter, etc. (PERIOD: 1 APRIL 2018 – 31 MARCH 2019)

Total No. of Books published: 6

Total No. of Book Chapters published: 36

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	S.S. Pande and U.S. Dixit (Editors)	Precision Product-Process Design and Optimization: Select Papers from AIMTDR 2016	Springer, Singapore	434		9789811087677	2018
2	U.S. Dixit and R. Kant (Editors)	Simulations for Design and Manufacturing: Select Papers from AIMTDR 2016	Springer, Singapore	292		9789811085178	2018
3	U.S. Dixit, S.N. Joshi and J. Paulo Davim (Eds.)	Application of Lasers in Manufacturing: Select Papers from AIMTDR 2016	Springer, Singapore	253		9789811305566	2018
4	U.S. Dixit and R. Ganesh Narayanan	Strengthening and Joining by Plastic Deformation: Select Papers from AIMTDR 2016	Springer, Singapore	246		978-981-13-0378-4	2019
5	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	563		978-981-13-3122-0	2019
6	P Muthukumar (Editor)	International Conference on Advanced Functional Materials 2017 (ICAFM'17),	Materials today (Elsevier), Volume 5, Issue 6, Part 2, Pages 14215-14638 (2018),				

Format for submission of Book Chapter, etc.

Sl. No.	Name of Author/s	Name of Paper	Name of Book	Publisher	Volume and Issue No. (If any)	Page No.	ISBN	Year and Date of Publication
1	Sathisha, H.M., Dalal, A.	An Unsteady Model to Study the Effects of Porosity and	Sustainable Energy Technology and Policies – A	Springer	2	379-396	978-981-10-8392-1	2018

		Temperature in All-Vanadium Redox Flow Battery with Mass Transfer and Ion Diffusion	Transformational Journey					
2	Kishor Kumar Gajrani, Mamilla Ravi Sankar	Sustainable cutting fluids: Thermal, Rheological, Biodegradation, Anti-corrosion, Storage Stability Studies and its Machining Performance	Encyclopedia of Renewable and Sustainable Materials	Elsevier			DOI: 10.1016/B978-0-12-813195-4.11152-X	2018
3	Kishor Kumar Gajrani, Mamilla Ravi Sankar	Sustainable Machining with Self-Lubricating Coated Mechanical Micro-Textured Cutting Tools	Encyclopedia of Renewable and Sustainable Materials	Elsevier			DOI: 10.1016/B978-0-12-813195-4.11325-2	2018
4	Kishor Kumar Gajrani, Y Bishal Singha, Mamilla Ravi Sankar, Uday Shanker Dixit	Tribological and Machining Performance of Graphite, CaF ₂ and MoS ₂ Coated Mechanical Micro-textured Self-Lubricating Cutting Tool	Manufacturing Engineering	Springer Nature Singapore		151-165	978-981-13-6287-3	2019
5	Chandan Kumar, Manas Das, C. P. Paul, B. Singh	Experimental study of fiber laser beam welding of 5 mm thick Ti-6Al-4V alloy,	Applications of Lasers in Manufacturing	Springer			978-981-13-0556-6_3.	2018
6	D. Sam Dayala Dev, Enni Krishna, Manas Das	Novel Finishing Process Development for Precision Complex-Shaped Hemispherical Shell by Bulk Plasma Processing	Precision Product-Processes Design and Optimization	Springer			978-981-10-8767-7_12	2018
7	Manas Das, U. S. Dixit	Advanced Machining Processes	Introduction to Mechanical Engineering	Springer		45-67	978-3-319-78488-5_9	2018

8	Jana, K., Mahanta, P. and De, S	Role of Biomass for Sustainable Energy Solution in India	Sustainable Energy and Transportation	Springer, Singapore.				2018
9	Mallick, D., Buragohain, B., Mahanta, P. and Moholkar, V.S.,	Gasification of Mixed Biomass: Analysis Using Equilibrium, Semi- equilibrium, and Kinetic Models	Coal and Biomass Gasification	Springer, Singapore.		269- 296		2018
10	Mallick, D., Mahanta, P. and Moholkar, V.S	Synergistic Effects in Gasification of Coal/Biomass Blends: Analysis and Review	Coal and Biomass Gasification	Springer, Singapore.		209- 233		2018
11	NK Mishra, Snehasi sh Panigrahy , P Muthukumar	A Review on Clean Combustion Within Porous Media	Air Pollution and Control	Springer Nature Singapore Pte Ltd.		223- 241		2018
12	Muthukumar P, Hakeem Niyas	Materials, Design and Development of Latent Heat Storage Systems for Medium and Large-scale Applications: Issues and Challenges	Reference Module in Materials Science and Materials Engineering	Elsevier		473- 497		2018
13	Avinish Tiwari, Piyush Singh, Pankaj Biswas, and Sachin D. Kore,	Friction stir welding of low carbon steel	Advances in Materials, Mechanical and Industrial Engineering	Springer		209- 226		2018
14	Avinish Tiwari, Pardeep Pankaj, Abhishek Bharadwaj, Piyush Singh, Pankaj Biswas and Sachin D. Kore	Friction stir welding of shipbuilding grade DH36 steel	Manufacturing Engineering	Springer		17-34		2018
15	Pardeep Pankaj, Rakesh Bhadra, Avinish Tiwari, Pankaj Biswas, and Sachin D. Kore	Transient Thermal Analysis of CO2 Laser Welding of AISI 304 Stainless Steel Thin Plates	Manufacturing Engineering	Springer		49-65		2019

16	Pardeep Pankaj, Rakesh Bhadra, Avinish Tiwari, Pankaj Biswas, and Sachin D. Kore,	Dissimilar friction stir welding of DH36 shipbuilding steel and Mild steel	Advances in Additive Manufacturing and Joining	Springer				2019
17	Nandan Kanan Das, Arun Kadian, Avinish Tiwari, Pardeep Pankaj and Pankaj Biswas,	Transient Thermal Analysis of Friction stir welding of AA606	Manufacturing Engineering					2018
18	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	Springer, Singapore.		61-71		2018
19	S.M. Hazarika and U.S. Dixit	Robotics: history, trends and future directions	Introduction to Mechanical Engineering, Edited by J. Paulo Davim	Springer London		213-239	978-3-319-78488-5	2018
20	A Bhowmick, SM Hazarika	E-mail spam filtering: a review of techniques and trends	Advances in Electronics, Communication and Computing	Springer		583-590		2018
21	Devarshi Kashyap, Charan Mukundan and S.Kanagaraj	Manufacturing and characterization of shape memory polymers and composites	Primary and Secondary Manufacturing of Polymer Matrix Composites	CRC press		43-73		2018
22	Bolar G. and Joshi S. N	Numerical Modeling and Experimental Validation of Machining of Low-Rigidity Thin-Wall Parts	Precision Product-Process Design and Optimization	Springer		99-122		2018
23	Kant R. and Joshi S. N.	A Numerical Investigation into the Effect of Forced Convection Cooling on the Performance of Multi-scan Laser Bending Process	Application of Lasers in Manufacturing	Springer		21-43		2018

24	P. S. Robi, Sukhomay Pal, and Biswajit Parida	Recent Trends and Advances in Friction Stir Welding and Friction Stir Processing of Metals	Manufacturing Techniques for Materials	CRC Press		715-751		2018
25	Varun Sharma, Pulak M. Pandey, Uday S. Dixit, Anish Roy, Vadim V. Silberschmidt,	Ultrasonic assisted turning: a comparative study of surface integrity	Precision Product-Process Design and Optimization: Select Papers from AIMTDR 2016,	Springer Singapore		337-360		2018
26	T.K. Gogoi and U.S. Dixit	Basics and applications of thermal engineering	Introduction to Mechanical Engineering, Edited by J. Paulo Davim	Springer London		137-178	978-3-319-78488-5	2018
27	M. Das and U.S. Dixit	Advanced machining processes	Introduction to Mechanical Engineering, Edited by J. Paulo Davim,	Springer London		269-296	978-3-319-78488-5	2018
28	Achinta Sarkar, Maryom Dabi and Ujjwal K. Saha	Supplementing the energy need of diesel engines in Indian transport and power sectors	Sustainable Energy and Transportation	Springer		61-86	978-981-10-7508-7	2018
29	Deb, S., Kalita, K., & Mahanta, P	Distribution Network Planning in presence of Electric Vehicle Charging station loads	Smart Power Distribution Systems	Elsevier		529-553	9.78E+12	2018
30	M. Hazarika, U.S. Dixit and J. Paulo Davim	History of production and industrial engineering through contributions of stalwarts	Manufacturing Engineering Education	Chandos Publishing		29	978-0-08-101247-5	2019
31	Ashutosh Kumar, S.K. Kakoty	A Variable Viscosity Technique for the Analysis of Static and Dynamic Performance Parameters of Three-Lobe Fluid Film Bearing Operating with TiO ₂ -	Manufacturing Engineering	Springer Singapore	Manufacturing Engineering Select Proceedings of CPIE 2018	pp 1-16	ISBN 978-981-13-6287-3	2019

		Based Nanolubricant						
32	Hakeem N, Muthukumar P	Comparison of Thermal Characteristics of Sensible and Latent Heat Storage Materials Encapsulated in Different Configurations	Springer Proceedings in Energy	Springer	Springer Proceedings in Energy		DOI 10.1007/978-981-10-4576-9_2	
33	Chilaka RCR, Hakeem N, Likhendra P and Muthukumar P	Performance Investigation of Lab-Scale Sensible Heat Storage System	Springer Proceedings in Energy	Springer	Springer Proceedings in Energy		DOI 10.1007/978-981-10-4576-9_16.	
34	Muthukumar P, Hakeem Niyas	Materials, Design and Development of Latent Heat Storage Systems for Medium and Large-scale Applications: Issues and Challenges	Reference Module in Materials Science and Materials Engineering	Elsevier				
35	Kishor Kumar Gajrani, Mamilla Ravi Sankar	Role of Eco-friendly Cutting Fluids and Cooling Techniques in Machining	Materials Forming, Machining and Post Processing	Springer Nature Switzerland AG		159-181	978-3-030-18853-5	

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

Name of Faculty	Name of Conf./Workshop	Place	Date	International/National
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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
Amaresh Dalal	Numerical Simulations of Two-Chamber Microbial Fuel Cell	Invited Lecture, National ILan University, Taiwan	ILan, Taiwan	8 th March, 2019
Amaresh Dalal	Anupravaha: Development of a General Purpose CFD Solver	Invited Lecture, NIT Meghalaya	Shillong, Meghalaya, India	19 th December, 2018
Amaresh Dalal	Lessons from AnuPravaha: Towards a General Purpose Computational Framework on Hybrid Unstructured Meshes for Multiphysics Applications	Keynote Lecture, 4th International Conference on Computational Methods for Thermal Problems, July 9-11, 2018, Indian Institute of Science, Bangalore	Bangalore, India	11 th July, 2018
Amaresh Dalal	Lessons from Anupravaha: Towards a General Purpose Computational Framework on Hybrid Unstructured Meshes for Multi-Physics Applications	TEQIP, Dibrugarh University	Dibrugarh, India	26 th May, 2018

Amaresh Dalal	Drop Impact on a Liquid Pool	TEQIP, Dibrugarh University	Dibrugarh, India	25 th May, 2018
U.S. Dixit	Manufacturing, Friction	Institute of Engineering and Technology, Dibrugarh University	Dibrugarh, India	27 th March, 2018
Sukhomay Pal	Sensor based weld defects detection system in friction stir welding	1st International Conference on Emerging Trends on Engineering and Science (ETES:2018)	Asansol, West Bengal	24 th March, 2018
S Kanagaraj	Synthesis and characterization of ceria based solid solution as a radical scavenger in cochlear implants	Madras University	Chennai	16 th March, 2018
Ujjwal K. Saha	Understanding Aerospace Engineering (6 Lectures)	Dibrugarh University	Dibrugarh	26 th March, 2018
Ujjwal K. Saha	Aeronautics for Beginners (One-day Workshop)	IIIT Bhagalpur, Bihar	Bhagalpur	13 th April, 2018
S. K. Dwivedy	Recent Advances in Dynamic Analysis of Flexible Robotic Manipulators	workshop on Recent Advances in Mechatronics and Robotics	NIT Meghalaya	22 nd – 24 th March, 2018
S. K. Dwivedy		NIT Silchar		
P Muthukumar	Green energy Technologies	NIT Jamshedpur	NIT Jamshedpur	9 th March
P Muthukumar	Green Hydrogen – A future Energy Career	12th Int Conf on Thermal Engineering: Theory and Applications, February 23-26, 2019,	Gandhinagar, India	26 th February, 2019
P Muthukumar	Development and testing of large scale metal hydride based hydrogen storage device for automobile and stationary applications	Indian Oil Corporation	Delhi	7 th December, 2018
P Muthukumar	Green Energy Technologies: A summary of Research Activates on Hydrogen and Thermal Energy Storage Systems carried out at IIT Guwahati		USA	27 th April, 2018
P Muthukumar	Thermal Energy Storage Systems for Concentrated Solar Thermal Power Plant Applications	Wichita state University, USA	USA	24 th April, 2018
P Muthukumar	Hydrogen - A Future Green Energy Carrier	Wichita state University, USA	USA	27 th March, 2018
U.S. Dixit	laser forming and coating	National Seminar on Advanced Research in Mechanical Engineering (NSARME-2018), at NIT Manipur		4 th - 5 th April, 2018
U.S. Dixit	Elasticity	TEQUIP at Institute of Engineering and Technology, Dibrugarh University,	Dibrugarh	24 th May, 2018.
U.S. Dixit	Modelling of Manufacturing Processes: A Historical Perspective,	at CPIE 2018 in Bangkok	Bangkok	27 th June, 2018
U.S. Dixit	“Lasers Based Manufacturing”	NERIST Nirjuli	Itanagar	17 th September, 2018
U.S. Dixit	How Can We Use Soft Computing in Design and Manufacturing?”	Shantou University	China	16 th October, 2018
U.S. Dixit	Sustainable Machining Processes	IIT Guwahati (TEQUIP)	IIT Guwahati	22 nd – 24 th October, 2018

U.S. Dixit	Soft Computing Applications in Design and Manufacturing	NIT Patna	Patna	4 th June, 2018
G. Biswas	Different Regimes of Pool Boiling	I2CNER Annual Symposium on Challenges in Thermal Science and Engineering, Towards a Sustainable Society	Kyushu University	31 st January – 2 nd February
G. Biswas	Bubble Dynamics in Various Regimes of Boiling	Fifth International; Conference in Thermal Problems 2018	IISc Bangalore	9 th – 11 th July
G. Biswas	Dynamics of Vapor Bubbles in Film and Nucleate Boiling	Advanced Measurements and Multiscale CFD Simulations for Intensification of Multiphase Flow Processes, Indo-German Symposium,	IIT Delhi	3 rd – 5 th October
P. K. Mondal	Recent Advances in Heat and Fluid Flow	Govt. College of Engineering and Textile Technology, Berhampore	West Bengal	18 th – 22 nd October
P. K. Mondal	Microscale multiphase transport	TEQIP, NIT Arunachal Pradesh	Arunachal Pradesh, India	9 th March, 2018
Shrikrishna N Joshi	Industry 4.0,	National Productivity Week - 2018	Bongaigaon Refinery Indian Oil Corporation Limited (IOCL), Bongaigaon, Assam, India.	
Shrikrishna N Joshi	ED based surface alloying	TEQIP3 MPST 2018	NIT Silchar	1 st October, 2018
Shrikrishna N Joshi	Laser based forming	TEQIP3 MPST 2018	NIT Silchar	2 nd October, 2018
Shrikrishna N Joshi	Sensors used in manufacturing automation	TEQIP3 lecture series	NIT Arunachal Pradesh	1 st November, 2018
Shrikrishna N Joshi	Laser micro-bending	TEQIP3 lecture series	NIT Arunachal Pradesh	
S K Dwivedy		TEQIP Lecture	NIT Silchar	
S K Dwivedy		TEQIP Lecture	NIT Meghalaya	
S K Dwivedy	Introduction to linear and nonlinear vibration Analysis of Mechanical Systems: Theory and Hands on Practice Session	TEQIP Lecture	IIT Guwahati	4 th December, 2018
S K Dwivedy	Nonlinear Dynamic Analysis of Smart piezoelectric and Magneto-Rheological Elastomer based Structures	National Workshop on Emerging Applications of Nonlinear Dynamics and Chaos in Science and Engineering	IIT Jodhpur	14 th December, 2018
Rajiv Tiwari	Vibration Analysis of Rotating Components Using Modern Tools	TEQIP 3	Jorhat Engineering College	7 th – 8 th September
Rajiv Tiwari	Condition Monitoring of Rotating Machineries Based on Vibrations	TEQIP Lecture	IIT Guwahati	4 th – 8 th December
S K Kakoty	Society and Technology	Prof A K Padmapati Memorial Lecture	Ban Theatre, Tezpur	8 th December
Pankaj Biswas	4-lectures on Welding Symbols and Joint Design, Physics of welding, Advanced Welding Research (Invited talk)	Assam Engineering College (28th August)		
Pankaj Biswas	2-lectures on Vibration and Noise Analysis using Ansys (Invited talk)	TEQIP-III- Short-term courses, IIT Guwahati on Vibration and Noise Analysis of Mechanical Systems, from 04-08 Dec, 2018,		
Pankaj Biswas	2-Lectures on Nomenclature of Butt welds and Fillet welds	Short Term Certificate Course in Welding Technology from Oct 3 to Oct 14, 2018 at ME workshop.(10th October)		

Pankaj Biswas	3-Lectures on SMAW consumables, types, identification	Short Term Certificate Course in Welding Technology from Oct 3 to Oct 14, 2018 at ME workshop.(7th October)		
Pankaj Biswas	3-lectures on Basics of welding and, Physics of welding, Metal transfer in welding (Invited talk)	"TEQIP-III- Short-term courses, IIT Guwahati on Advances in Welding Research and Technology		
Pankaj Biswas	Classification of Welding and Joints (Invited talk)	,from 26-30 Nov, 2018,"		
Satyajit Panda	"Passive damping of thin-walled structures through the design of viscoelastic composites	Workshop on basic welding technology, IIT Guwahati (July 2018)	NIT Jalandhar, India	22 nd December
Nelson Muthu	Analytical and Experimental Studies on Detection of Longitudinal, L and Inverted T Cracks in Isotropic and Bi-material Beams Based on Changes in Natural Frequencies	TEQIP Lecture - Vibration and Noise Analysis of Mechanical Systems	IIT Guwahati	4 th December, 2018
Nelson Muthu	Connecting Doctors, Researchers and Entrepreneurs for Indigenous Medical Device Innovation	QIP - Short Term Course On "Current Status and Requirements of Biomedical Devices	IIT Guwahati	25 th March, 2019

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
Prof. Atul Sharma	IIT Bombay, India	To conduct PhD Viva Voce	15 th November, 2018	
Prof. Partha P. Mukherjee	Purdue University, USA	To Deliver Departmental Lecture	27 th July, 2018	
Professor Narendra Dahotre	University Distinguished Research Professor of the Department of Materials Science and Engineering, University of North Texas (UNT)	To Deliver Departmental Lecture	25 th October, 2018	
Professor K. Ramamurthi	Former Scientist, ISRO and Former Professor, IIT Madras	To Deliver Departmental Lecture	29 th October, 2018	
Dr. Damodara Reddy	Institute of High Performance Computing (IHPC), A-STAR Singapore	To Deliver Departmental Lecture	12 th November, 2018	
Prof. A. M. Rajendran	University of Mississippi, Oxford, USA	Departmental seminar cum faculty interaction	9 th October, 2018	
Mr. Umashankar	Center for Simulation Excellence (CSE), Simulia, Bengaluru	Colloboration	4 th May, 2018	

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	P Muthukumar	ISHRAE-AICTE Five Day Refresher Course on Refrigeration and Air Conditioning		2 nd – 6 th July, 2018		

2	P Muthukumar	TEQIP III Short term course on “Energy Efficient and Green Energy Technologies”- IIT Guwahati		26 th – 30 th November, 2018		
3	U.S. Dixit and M. R. Sankar	TEQIP III Short term course on “Sustainable Machining Processes”- IIT Guwahati		22 th – 26 th October, 2018		
4	S K Dwivedy	TEQIP III Short Term Course on Vibration and Noise Analysis of Mechanical Systems		4 th – 8 th December, 2018		
5	S K Kakoty and Karuna Kalita	SERB School on Noise and Vibration				
6	P. C. Kalita, S. Pal and D. Sharma	Training Program on Marketing Management		24 th – 28 th September, 2018		
7	Panakj Biswas & S. Pal	TEQIP III Short term course on “Advances in welding research and technology”- IIT Guwahati		26 th – 30 th November, 2018		
8	S. M. Hazarika	TEQIP III Short Term Course on Fundamentals of Robotics and Artificial Intelligence		4 th – 8 th February, 2019		
9	S. M. Hazarika	Workshop on Artificial Intelligence, Robotics & Machine Learning under AICTE Teaching And Learning (ATAL) Academy		22 nd – 26 th February, 2019		

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 15

No. of Patents Granted with details

Sl. No.	Name of Faculty and co researcher	Name	Date Applied/Granted	Application No.	Remarks
1	Vimal Katiyar, M. Ravi Sankar, Arbind Prasad	Process for the preparation of resorbable polymeric composite U type bone staple			
2	Vimal Katiyar, M. Ravi Sankar, Arbind Prasad	Process for the preparation of polymer based Cancellous screws and pins			
3	Vimal Katiyar, M. Ravi Sankar, Arbind Prasad	Resorbable cortical screw			
4	Vimal Katiyar, M. Ravi Sankar, Arbind Prasad	Resorbable polymer composite bone plate			
5	Avilash Sahu, S K Dwivedy, P.S. Robi	Underwater vehicle			
6	Nandan Kanan Das and Pankaj Biswas,	“Design and development of JIG & FIXTURE for fabrication of cylindrical pin profile of FSW tool of tungsten carbide material using Wire EDM.		Ref. No. 240P1901	
7	U.S. Dixit, A.Ch. Borsaikia, A. Raj	Autoclaved aerated concrete(aac) block unit comprising in-built anchorage/frog on surface for enhancement of bonding and lateral/shear		patent 201831028883	

		strength in masonry wall system			
8	Juan Chowdhury, Gaurav Kumar, Karuna Kalita, Sashindra K Kakoty	Linear Switched Reluctance Actuator for Powerloom		201731045107	
9	Juan Chowdhury, Gaurav Kumar, Karuna Kalita, Sashindra K Kakoty	High Force Density Quad Air Gap Switched Reluctance Motor		201731045006	
10	Gaurav Kumar, Karuna Kalita, Kari Tammi, Seamus D Garvey, WKS Khoo	Generation of Selective Pole Pair Field and Selective Frequency Transverse Force in Bridge Configured Winding Electrical Machines		201831000913	
11	Mishra SC, Pantangi VK.	Porous Radiant Burner for Domestic LPG Cooking Device with Improved Thermal Efficiency and Reduced Emissions of CO and NOx. Patent Number		E-2/548/2013-KOL	
12	Mishra SC, Niraj Kumar Mishra	Self-Aspirated LPG Domestic Cooking Stove with a Two-Layer Porous Radiant Burner,		Indian Patent No: 543/KOL/2015	
13	Mishra SC, Niraj Kumar Mishra and Snehasish Panigrahi	. Medium-Scale Self-Aspirated Improved Air Entrainment LPG Cooking Stove with a Two-Layer Porous Radiant Burner,		Indian Patent No: 201631015526 dated on 4th May 2016	
14	Mishra SC, G.S. Sinha, M Sharma, N Mishra, P. Mahanta,	Self-Aspirated Pressurized Kerosene Cooking Stove with a Porous Radiant Burner,		Application No: 201631037245 dated on 31st October 2016.	
15	G.S. Sinha, L K Kaushik M Sharma, N Shanmuga Priya, S Kanagaraj	Self-Aspirated Pressurized Kerosene Cooking Stove with a Porous Radiant Burner with Nanoparticles blended.		Application No: 201831003156 (TEMP/E-1/3419/2018-KOL) dated on 27th Jan 2018	

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)
U,S, Dixit	Guest of honor	Technical festival of NIT Agartala		Certificate
U,S, Dixit	Chief Guest	International Conference on Advances and Soft Computing Applications in Design and Manufacturing, 4-6 June, 2018 at NIT Patna		
Gautam Biswas	Honorary Doctorate	Aristotle University of Thessaloniki, Greece on Nov 02, 2018		

S K Kakoty	Education Leadership Award	Business School Affaire & Dewang Mehta National Education Awards		Certificate
U.S. Dixit	Best paper award	AIMTDR	Paper quality adjudged best: G.C. Verma, P.M. Pandey and U.S. Dixit, Experimental investigations to evaluate machining accuracy of ultrasonic assisted milling on thin-walled structures, 7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, December 13-15, 2018, Anna University, Chennai.	Certificate and free e-books from Springer
P Muthukumar	Best Paper Award by PhD student Mr Mrinal Bhowmik	IISc Bangalore at THERMACOMP conference	Best paper award	Certificate and medal
M. Pandey	Session Chair	Joint 19th International Heat Pipe Conference and 13th International Heat Pipe Symposium, Pisa, Italy, June 10-14, 2018		

16. Students' Achievements:

Name of 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)
Amaresh Dalal	Best Paper Award (to student Bhaskarjyoti Sarma)	7th International and 45th National Conference on Fluid Mechanics and Fluid Power	Sarma, B., Basu, D. N., and Dalal, A., 2018, "Universal Scaling Laws in Drop-on-demand Generation from A Yarn", Paper No. FMFP2018-467, Proceedings of the 7th International and 45th National Conference on Fluid Mechanics and Fluid Power, December 10-12, 2018, Indian Institute of Technology Bombay, Mumbai, India.	Citation
Amaresh Dalal	Best Oral Presentation Award for the Session (to student Hiranya Deka)	International Conference on Recent Innovations and Developments in Mechanical Engineering	Deka, H., Biswas, G., and Dalal, A., 2018, "A Coupled Level Set and Volume-of-fluid Method for Modelling Two-phase Flows", Paper No. IC-RIDME18: 194, International Conference on Recent Innovations and Developments in Mechanical Engineering, National Institute of Technology Meghalaya, Shillong, India, November 8-10, 2018.	Citation
Amaresh Dalal	Best Oral Presentation Award for the Session (to student Subrat Kotoky)	International Conference on Recent Innovations and Developments in Mechanical Engineering	Kotoky, S., Dalal, A., and Natarajan, G., 2018, "The Role of Particle Diameter on the Fluidization Behavior in a Bubbling Gas-Solid Fluidized Bed", Paper No. IC-RIDME18: 203, International Conference on Recent Innovations and Developments in Mechanical Engineering, National Institute of Technology Meghalaya, Shillong, India, November 8-10, 2018.	Citation
P MUTHUKUMAR	Best paper award	IISc Bangalore, India	Mrinal Bhowmik, P. Muthukumar, R Anandalakshmi "Numerical Study on Dehumidification Performance of a	

			Cross-Flow Liquid Desiccant Adiabatic Dehumidifier with Various Halide Salt desiccants” 5th International Conference on Computational Methods for Thermal Problems, .”	
M R Sankar	Best poster award (1st)	Research Conclave' 2018, Indian Institute of Technology Guwahati, India	Kishor Kumar Gajrani, Y. Bishal Singha, Mamilla Ravi Sankar, Comparative Tribological Performance of Graphite, CaF ₂ and MoS ₂ Coated Mechanical Micro-Textured Cutting Tool Material during Dry Sliding Test.	
M R Sankar	Best poster award (2nd)	Research Conclave' 2018, Indian Institute of Technology Guwahati, India	Rasmi Ranjan Behera, A. Das, D. Pamu, L.M. Pandey, Mamilla Ravi Sankar, Calcium Phosphate Coating on Ti-6Al-4V alloy using RF magnetron Sputtering Process.	
S Senthilvelan	Outstanding Paper Award	FISITA 2018 Word Auotmotive Congress	Aditya Kumar, Karthick Pandia, S Senthilvelan BENDING FATIGUE PERFORMANCE OF INJECTION-MOLDED CARBON NANOTUBE REINFORCED POLYPROPYLENE SPUR GEARS	
Sachin Singh Gautam	2nd Best Presentation Award (to student D. Bora)	2nd International Conference on Structural Integrity and Exhibition 2018	Ductile fracture in tube impact problem using a Lode angle dependent failure criterion by D. Bora, M. Kumar and Sachin Singh Gautam	Certificate and Cash prize of 2500 Rs
Sachin Singh Gautam	Best Paper Award (to student Vishal Agrawal)	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida,	An isogeometric based study of mortar contact algorithm for frictionless sliding by Vishal Agrawal and Sachin Singh Gautam	
Sanghamitra Das	Best poster award	Recent Innovations and Developments in Mechanical Engineering (IC-RIDME-2018) November 8-10, 2018 at NIT Meghalaya.		Three-Dimensional Numerical Modelling of Temperature Profiles on the Wire Electrode During Wire Electric Discharge Machining Process
S Kanagaraj	International Travel Award	DST International travel award committee	To attend International Conference on Materials Science and Manufacturing Engineering (MSME 2018), 8-10 Nov, 2018, Novotel Paris Centre Tour Eiffel, Paris, France	Certificated and Medal
P MUTHUKUMAR	Best paper award for Mr Mrinal Bhowmik	IISC Bangalore, India - THERMACOMP – 2018	Best Paper and Presentation	
P MUTHUKUMAR	International Travel Award for Mr Nithin Narmada	To attend and present a paper at 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong.	To attend 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong.	

KSRK Murthy	Best Paper Award (to student Sajith S)	3rd International Conference on Design, Analysis, Manufacturing & Simulation (ICDAMS-2018), 6-7 April, Chennai		Certificate
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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	Bandopadhyaya, 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	Compliant Mechanism, Shape memory alloy, Bio-mimetic 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,	2010

				Application of soft computing techniques in manufacturing	
18	Kakoty, Sashindra K.	IIT Kharagpur	Professor & Dean, Infrastructure, Planning and Management	Tribology, Duct Acoustics, Mechanical System Design, Rural Technology	2000
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	Kore, Sachin D.	IIT Bombay	Associate Professor	Experimental and numerical study of electromagnetic pulse processing, Solid state welding, Joining of similar, dissimilar and lightweight metals like Al, Steel, Al-Li, and Mg	2009
24	Kulkarni, Vinayak	IISc Bangalore	Associate Professor	High enthalpy flows, scramjet engine, experimental, aerodynamics, measurement science, CFD simulations	2008
25	Kumar, Bhaskar	IIT Kanpur	Assistant Professor	Hydrodynamic Stability, Bluff Body Flows, Computational Fluid Dynamics	2015
26	Kumari, Poonam	IIT Delhi	Associate Professor	Theory of plates and shells, Computational mechanics, Smart structures	2013
27	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
28	Mahanta, Pinakeswar	IIT Guwahati	Professor	Thermal Radiation with Participating Media, Fluidization, Energy	2001

				Conservation and Renewable Energy	
29	Mehta, Balkrishna	IIT Kanpur	Assistant Professor	Experimental investigation of heat transfer in two-phase flow in mini/micro systems, Heat pipes, Thermosyphons, Heat transfer investigation of ferrofluids in presence of magnetic field, InfraRed thermography for temperature measurements.	2015
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, Satyajit	IIT Kharagpur	Associate Professor	Composite materials, Nonlinear vibrations, Smart materials and structures, FEM, Functionally Graded materials and structures, Micromechanics.	2009
39	Pandey, Manmohan	IIT Kanpur	Professor	Dynamics and Control of Fluid-Thermal Systems,	2000

				Nuclear Reactor Thermal-Hydraulics	
40	Robi, P. S.	IIT Bombay	Professor	Coating, Fracture Mechanics, Materials Processing, Metal Matrix composite, Metal Casting, P/M Processing	1997
41	Saha, Ujjwal K.	IIT Bombay	Professor	Propulsion, Turbomachinery, Wind Energy Conversion, Internal Combustion Engines	2000
42	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
43	Sahoo, Niranjana	IISc Bangalore	Professor	Fluid and Thermal Engineering, Aerodynamics, Gas Dynamics, Instrumentation, Measurements and Experiments in Fluid	2004
44	Sankar, Ravi M.	IIT Kanpur	Assistant Professor	Machining & Advanced Machining Processes, MEMS & NEMS, Sustainable Machining, Micromanufacturing, Composite Materials, Online monitoring of Manufacturing Processes, Tribology, Precision Engineering	2012
45	Senthilvelan, S.	IIT Madras	Professor	Composites, Fatigue, Wear and Failure Analysis	2006
46	Sharma, Deepak	IIT Kanpur	Associate Professor	Optimal Design: Modeling and Computation, Engineering Design and Optimization, Genetic Algorithms, Multi-objective Optimization	2012
47	Tiwari, Rajiv	IIT Kanpur	Professor	Rotor Dynamics, Vibrations, Identification 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