

# **MECHANICAL ENGINEERING**

## **DEPARTMENTAL NEWSLETTER**



**ACADEMIC YEAR 2021-22**

**National Institute of Technology Srinagar  
Srinagar, Jammu and Kashmir 190006**

# About Mechanical Engineering Department



The Department of Mechanical Engineering is one of the oldest departments of NIT Srinagar and has evolved into one of the finest in terms of teaching curriculum and methodology supported by a well-organised and adequately funded research program.

We have a very well-established B. Tech program complemented by M. Tech programs in Mechanical System Design and Industrial Tribology & Maintenance Management. The department also offers doctoral programmes in various field of Mechanical Engineering.

Our curriculum is designed to cater to the needs and aspirations of the industry, and our top-class faculty ensures that the students acquire the necessary technical and decision-making skills to be leaders in the dynamic world of industry.

Prof. Nazir Ahmad Shiekh is the present Head of Department. The real strength of the Department lies in its qualified, dedicated and motivated faculty.



**Prof. Rakesh Sehgal**  
Director NIT Srinagar

Dear Readers & members of the Department of Mechanical Engineering, It gives me immense pleasure to address you in this issue for the academic year 2021-22 of the Department's Newsletter. This Newsletter serves as a valuable platform to showcase the Department's achievements, ongoing research endeavours, & the vibrant academic environment that fosters innovation and excellence. I commend the Mechanical Department for its efforts in bringing out this Newsletter.

The Department of Mechanical Engineering has consistently been at the forefront of technological advancements, making significant contributions to the field of Mechanical Engineering.

The publication of this Newsletter is a significant milestone for the Department. It serves as a platform to share its research findings with the wider community and connect with its alumni and stakeholders. The Newsletter will also provide insights into the Department's plans and aspirations for the future leading to prospective collaborations.

Once again, I extend my sincere congratulations to the Department on the launch of this Newsletter. I wish the Mechanical Department continued success in its pursuit of excellence in education, research, and innovation.

**Prof. Dr. Nazir Ahmad Sheikh**  
Head, Mechanical Engineering  
Department



It gives me immense pleasure to address you in this Edition of the Department's Newsletter. This Newsletter serves as a valuable platform to showcase the Department's achievements, ongoing research endeavors, and the vibrant academic environment that fosters innovation and excellence. It is a testament to the Department's dedication to communication, collaboration, and transparency.

The Department of Mechanical Engineering has consistently been at the forefront of technological advancements, making significant contributions to the field of engineering. The Newsletter serves as a platform to share Department's research findings with the wider community and connect with its alumni and stakeholders. The Newsletter will also provide insights into the Department's plans and aspirations for the future.

Through this edition of the Newsletter, I want to bring forth some of the recent initiatives taken by the Department to enhance efficiency in the learning process.

Once again, I extend my sincere congratulations to the Department on the launch of this edition of the Newsletter. I wish the Department continued success in its pursuit of excellence in education, research, and innovation.

# Vision, Mission & PEOs of the Department



## Vision of the Department

To nurture Mechanical Engineers with a passion for professional excellence, who are ready to take on global challenges and serve the society with high human values.

## Mission of the Department

- To provide facilities and infrastructure for academic excellence in the field of Mechanical Engineering.
- To inculcate in the students a passion for understanding professionalism, ethics, safety, and sustainability, and enable them to contribute to the society.
- To nurture creativity of the students and encourage them to come up with innovative solutions to real life problems.
- To prepare the student for lifelong learning with global perspective.

## Program Educational Objectives (PEOs)

- To prepare students to get employment and pursue research in Mechanical Engineering and allied fields.
- To train students to identify and analyze Mechanical Engineering problems using an iterative approach that involves defining, quantifying, testing and review of the identified challenges.
- To enable students to plan, organize, schedule, execute and communicate effectively as an individual, as a team member, or as a leader in a multidisciplinary environment.
- To provide the students an academic environment that makes them appreciate excellence in the field of Mechanical Engineering & empowers them to understand the significance of lifelong learning.



**Prof. N. A. Sheikh**

Professor & Head

Aircraft wing vibration, Smart Structures, Finite Elements.



**Prof. G.A. Harmain**

Professor (HAG)

Computational Mechanics, FEM, Thermo elasticity and Second Sound, Fracture Mechanics and Material Fatigue



**Prof. M. Marouf Wani**

Professor

Internal Combustion Engines, Combustion of Alternative fuels, Emission control.; CFD Applications in I C Engines



**Dr. Mohammad Hanief**

Associate Professor

Wear modeling, Materials, Tribology

**Prof. M. F. Wani**

Professor (HAG)

Tribology, Nano Tribology, Life Cycle Engineering



**Prof. Adnan Qayoum**

Professor

Experimental Fluid Mechanics, Heat Transfer Augmentation, Design of Thermal Systems.



**Prof. Babar Ahmad**

Professor

Haptics and Control, MEMS, Ultrasonic Transducers



**Dr. M. S. Charoo**

Associate Professor

Nano lubrication, Materials, Tribology





**Dr. Sheikh Shahid Saleem**

Associate Professor  
Tribology, Bio-tribology, Friction Materials



**Dr. Saad Parvez**

Associate Professor  
Industrial Engineering, Project Management, Quality Control, Decision Sciences, Innovations & Entrepreneurship



**Dr. M. Mursaleen**

Associate Professor  
Smart Structures, Mathematical Modeling.



**Dr. Dinesh W Rathod**

Assistant Professor



**Dr. Noor Zaman Khan**

Assistant Professor  
Friction Stir Welding, Friction Stir Processing, Machining, Optimization



**Dr. M. Mohsin Khan**

Assistant Professor  
Biomaterials, Computational Methods, Thermophysical Properties



**Dr. Mukund Dutt Sharma**

Assistant Professor  
Tribology, Machining, Optimization and Modelling



## Dr. Harveer Singh Pali

Assistant Professor

Utilization of Biofuel/Alternative Fuels in IC Engines. Renewable Energy and Thermal Energy Systems



## Dr. Abhijit Dey

Assistant Professor

Thinfilm and Coating; Machinability of Metal Matrix Composites; Materials Characterizations



## Dr. Manoj Kumar

Assistant Professor

Desiccant Materials, Low and Medium Temperature Applications



## Dr. Sandeep Rathee

Assistant Professor

Additive Manufacturing, Friction Stir Welding/ Processing, Metal Matrix Composites, Advanced Hybrid Manufacturing .



## Dr. Deepak Kumar Naik

Assistant Professor

Advanced Manufacturing Technology/ CNC & Automation



## Dr. Dinesh Kumar R

Assistant Professor

Production Engineering, Underwater Welding, Friction Stir Welding/ Processing, Wire Arc Additive Manufacturing, CNC



## Mr. Ved Prakash Sharma

Trainee Teacher



# Papers, Books & Chapters published



Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
1	Aazim Shafi Lone, G A Harmain, Azher Jameel	Enriched element free Galerkin method for solving frictional contact between solid bodies	Mechanics of Advanced Materials and Structures	Jun 2022
2	Jebran Khan, Umair, Ashraf, Shahid Saleem	Influence of temperature on the tribo-performance of GGG-60 seat insert against 23–8 N exhaust valve steel	Materials Today:Proceedings	Jun 2022
3	Ajaz Ali, Sheikh Nazir Ahmad	Mechanical and tribological behavior of TiB <sub>2</sub> /Al <sub>2</sub> O <sub>3</sub> coating on high-speed steel using electron beam deposition	Tribology International	Jun 2022
4	Amir Yousuf Bhat, Adnan Qayoum	Viscosity of CuO nanofluids: Experimental Investigation and modelling with FFBP- ANN	Thermochimica Acta	Jun 2022
5	Amit Kumar Dey, Abhijit Dey, Rumi Goswami	Adsorption characteristics of methyl red dye by Na <sub>2</sub> CO <sub>3</sub> -treated jute fibre using multi-criteria decision making approach	Applied Water Science	Jun 2022
6	Amit Kumar Dey, Abhijit Dey, Rumi Goswami	Selection of optimal performance characteristics during adsorption of Methyl red dye using sodium carbonate treated jute fibre	Desalination and Water Treatment	Jun 2022
7	Rakesh Sehgal, Neeraj Gupta, Anuradha Tomar, Mukund Dutt Sharma, Vigna Kumaran	Smart Electrical and Mechanical Systems: An Application of Artificial Intelligence and Machine Learning	Elsevier	Jun 2022
8	G Khajuria, M F Wani	Impact of Micro- Indentation on Hardness and Indentation Depth of Ni-Cr Super Alloys	Advances in Materials and Processing Technologies	Jun 2022
9	Mouminah Amatullah, Mehwish Jan, Munazah Farooq, Afra Saeed Zargar, Annayath Maqbool, Noor Zaman Khan	Effect of Tool Rotational Speed on the Friction Stir Welded Aluminum Alloys: a Review.	Materials Today: Proceedings. (Elsevier)	Jun 2022
10	Manoj Kumar, Neeraj Mehla, Shobhit Srivastava, Ravi Kant Ravi	Water generation from atmospheric air by using desiccant materials- nature-based solution—a review	World Journal of Engineering	May 2022

# Papers, Books & Chapters published



Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
11	Gurtej Singh, M F Wani, M Marouf Wani	Fuel energy saving in SI engine using graphene and graphite as nano-additives: a comparative study	Applied Nanoscience	May 2022
12	Kaleem Ahmad Najar, Sheikh Nazir Ahmad, M.A Shah, Zahid Mushtaq, Sobura Altaf	A dual-layer approach for enhancing the tribological and machining performance of carbide tools in dry turning of mild-steel alloy	International Journal of Machining & Machinability of Materials	May 2022
13	Suhail Ganiny, Majid H Koul, Babar Ahmad	Analysis of Limit Cycle Oscillations in Dual-rate Haptic Rendering: Effect of Dual-rate Sampling	IFAC-Papers On Line.	May 2022
14	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad, Vinayak Malik	Effect of process parameters on surface composite fabrication of newly commercialized Mg-ZE41 alloy by friction stir processing (FSP): microstructural Development & microhardness	World Journal of Engineering	Apr 2022
15	Mohammad Mohsin Khan, Abhijit Dey	Microstructure-abrasive wear correlation of in situ ZA27/TiC composites	Ceramics International	Apr 2022
16	Jeyaprakash, Che-Hua Yang, Sundara Subramanian Karuppasamy and Dinesh Kumar Rajendran	Correlation of microstructural with corrosion behaviour of Ti-6Al-4V specimen developed through selective laser melting technique	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	Mar 2022
17	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad	Study on surface modification and fabrication of surface composites of magnesium Alloys by friction stir processing: a review.	Journal of Engineering and Applied Science (Springer)	Mar 2022
18	Amit Kumar Deya, Abhijit Dey, Rumi Goswamic	Fixed-bed column analysis for adsorption of Acid scarlet 3R dye from aqueous solution on to chemically modified betel nut husk fibre	Desalination & Water Treatment	Mar 2022
19	Lubaid Nisar, Aasif Nazir Thoker, Asma Sanjum, Mohd Rafiq Parray, Noor Zaman Khan, Suhail Ahmed Manroo	Defects analysis in friction stir processing of magnesium-based surface composites.	Materials Today: Proceedings. (Elsevier)	Mar 2022

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Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
20	Ishfaq Amin Maekai, G A Harmain, J H Masoodi	Resistance to slurry erosion by WC-10Co-4Cr and Cr3C2- 25 (Ni20Cr) coatings deposited by HVOF stainless steel F6NM	International Journal of Refractory Metals and Hard Materials	Mar 2022
21	Masrat Bashir, Adnan Qayoum Sheikh Shahid Saleem	Effect of banana peel powder on the fade and recovery of brake friction material	JOM	Mar 2022
22	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad	Study on surface modification & fabrication of surface composites of magnesium alloys by friction stir processing: a review	Journal of Engineering and Applied Science	Mar 2022
23	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad	Development of Nano-Composites on Rare-Earth Mg-ZE41 Alloy Via Friction Stir Processing (FSP): Microstructure, Mechanical & Tribological Properties	JOM	Mar 2022
24	Ved Prakash Sharma, Neresh Kumar Datla	Fracture Behavior & Reliability of Low-Silver Lead-Free Solder Joints	Journal of Electronic Packaging, Transactions of the ASME	Mar 2022
25	G Chaudhary, Amit Kumar Dey, Abhijit Dey	Stress and Delamination Analysis on Overlapped-Grouped and Overlapped-Dispersed Tapered Composite Laminate	International Applied Mechanics	Mar 2022
26	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad	Study on surface modification & fabrication of surface composites of magnesium alloys by friction stir processing: a review	Journal of Engineering and Applied Science	Mar 2022
27	Aazim Shafi Lone, G A Harmain, Azher Jameel	Modeling of contact interfaces by penalty based enriched finite element method	Mechanics of Advance Materials & structures	Feb 2022
28	Fayaz Ahmad Mir, Noor Zaman Khan, Arshad Noor Siddiquee, Saad Parvez	Friction based solid state welding – A review	Materials Today: Proceedings	Feb 2022
29	Mehak Nisar, M S Charoo	A Comparative Analysis of Corrosion Performance of Piston Alloy and Its Composite in Marine, Mining and Basic Environments	Journal of Bio - and Tribo- Corrosion	Feb 2022

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Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
30	Chandra Kant, G. A. Harmain	Fatigue Life Prediction Under interspersed Overload in Constant Amplitude Loading Spectrum via Crack Closure and Plastic Zone Interaction Models—A Comparative Study	Lecture Notes in Mechanical Engineering	Jan 2022
31	Zahid Mushtaq, M. Hanief	Exploring The Anti-Wear & Extreme Pressure Lubricating Performance of Jatropa Oil Modified with Additives.	TJER	Jan 2022
32	Shariq Ahmad Bhat, M S Charoo	Rheological characteristics of coconut grease with graphene nanoplatelets	Biomass Conversion and Bio-refinery	Jan 2022
33	Shariq Ahmad Bhat, M S Charoo	Rheological and tribological properties of rice bran oil grease (RBOG) with h-BN nanoparticles - An experimental study	Journal Tribology	Jan 2022
34	K R Yellu Kumar, Adnan Qayoum, Sheikh Saleem, Fasil Qayoom Mir	Effect of blowing ratio on adiabatic effectiveness for effusion cooling in gas turbine Combustor liners	Res. Eng. Struct. Mat. ahead-of- print No. ahead-of-print	Jan 2022
35	Basant Lal, M.F. Wani, Abhijit Dey	Prediction of surface roughness during dry sliding wear: Characteristics of Ti-6Al-4V alloys	International Journal of Surface Engineering and Interdisciplinary Materials Science	Jan 2022
36	Mohammed Dilawar, Adnan Qayoum	Performance study of aluminium oxide based nanorefrigerant in an air-conditioning system	Res. Eng. Struct. Mat.	Jan 2022
37	Bisma Ali, Adnan Qayoum, Shahid Saleem, F.Q Mir	Synthesis and characterization of high- quality multi layered graphene by electrochemical exfoliation of graphite	Res. Eng. Struct. Mat.	Jan 2022
38	Amir Yousf Sofi, Adnan Qayoum	Heat transfer and fluid flow characteristics in a two pass duct with variable rib shapes: a CFD analysis	Proceedings of the 9th International & 49th National Conference on Fluid Mechanics and Fluid Power (FMFP), IIT Roorkee	Jan 2022
39	Gurtej Singh, M F Wani, M Marouf Wani	Fuel energy saving in SI engine using graphene & graphite as nano-additives: A comparative study	Applied Nanoscience	Jan 2022

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Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
40	Amine Charfi, Ruttba Aziz, Mohamed Kharrat, Mohd Farooq Wani, Maher Dammak, Rakesh Sehgal	Friction and Wear Characterization of Nano-composites Based on Si <sub>3</sub> N <sub>4</sub> Reinforced with SiC, Mo, MoSi <sub>2</sub> Nano particles	Transactions of the Indian Institute of Metals	Jan 2022
41	Omar Hussain, Babar Ahmad, Shahid Saleem Sheikh	Bio-tribological performance of medical-grade UHMW polyethylene-based hybrid composite for joint replacement	Polymers and Polymer Composites	Dec 2021
42	Ashish Kumar Singh, Mohd. Mohsin Khan, and Harveer Singh Pali	Investigation of 1-hexanol diesel blends on performance, combustion and emission characteristics of a diesel engine	Journal of Physics: Conference Series	Dec-2021
43	Pushkal Badoniya, Ashish Yadav, Manu Srivastava, Prashant K Jain.	Fabrication of Functionally Graded Materials (FGMs) via Additive Manufacturing Route	Springer	Dec 2021
44	M. Hanief, Zahid Mushtaq Umar Wani, Irfan M Qureshi	Influence of materials' hardness and operating parameters on the surface roughness during reciprocating sliding	International Journal of Nanotechnology	Nov 2021
45	A Awasthi, N Panwar, M Pant, S Bala, M. D Sharma A Chauhan,	Characterization, fabrication and dry sliding wear analysis of hybrid Aluminium 6061 composite	Tribology In Industry	Nov 2021
46	Nishu Gupta, Parvesh Kumar and H. S. Pali	2nd International Conference on Computational Intelligence & Energy Advancements (ICCIEA-2021), September 11-12, 2021 virtual format	Journal of Physics: Conference Series	Nov 2021
47	Amit Kumar, Harveer Singh Pali, Manoj Kumar	Application of pyrolysis and hydrothermal liquefaction process to convert bio-fuel from Biomass	Journal of Physics: Conference Series	Nov 2021
48	Ashutosh Ameta, Mohammad Inayat Pinjara, Alok Kumar Dudhera, Harveer Singh Pali	Development a Solar Dryer for low-income group Farmers for sub cooled region	Journal of Physics: Conference Series	Nov 2021

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Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
49	Ashish Kumar Singh, Harveer Singh Pali, Mohd. Mohsin Khan	Performance and emission analysis of waste animal fat methyl esters blends on Naturally aspirated single cylinder engine	Journal of Engineering Research	Nov 2021
50	Sumanth Ratna Kandavalli, Anthuvan Stephen Edberk, Dinesh Kumar Rajendran & Varthini Rajagopal	A Progressive Review on Wire Arc Additive Manufacturing : Mechanical Properties, Metallurgical & Defect Analysis	Advances in Additive Manufacturing Processes	Nov 2021
51	Varthini Rajagopal, Dinesh Kumar Rajendran, B. Santhi, Arjun R. Jagadish	Selective Laser Melting Based Additive Manufacturing: Materials, Properties & Defect Analysis	Advances in Additive Manufacturing Processes	Nov 2021
52	Y G Bala Dinesh Kumar Rajendran, Varthini Rajagopal	A Review on Binder Jetting Fabrication: Materials, Characterizations & Challenges	Advances in Additive Manufacturing Processes	Nov 2021
53	Dinesh Kumar Rajendran, Baskaran Balaji, Kannan Ganesa Balamurugan	Microstructural, Characterizations & Micro-hardness investigation on friction stir additive manufactured commercially pure Aluminium alloy	Recent Advances in Manufacturing Automation, Design and Energy Technologies	Oct 2021
54	Aniruddha Ghosh, Varthini Rajagopal	Inhibiting COVID-19 Transmission in India Through Design of Automated Contactless Face Mask Vending Cum Disposal Machine with Self-Sterilization Unit	Recent Advances in Manufacturing, Automation, Design and Energy Technologies	Oct 2021
55	Md Al-Amin, Ahmad Majdi, Abdul-Rani, T.V.V.L.N. Rao, Mohd Danish, Saeed Rubaiee, Abdullah bin Mahfouz, R.P. Parameswari, M.F. Wani	Investigation of machining and modified surface features of 316L steel through novel hybrid of HA/CNT added-EDM process	Materials Chemistry and Physics	Oct 2021
56	Tariq Ahmad, Noor Zaman Khan, Babar Ahmad, Annayath Maqbool	Recent Advances in Machining of Composites and Super Alloys by Using Wire-EDM.A Review	Lecture Notes in Mechanical Engineering	Oct 2021
57	Surinder Tathgir, Dinesh W Rathod, Ajay Batish	Emphasis of Weld Time, Shielding Gas and Oxygen Content in Activated Fluxes on the Weldment Microstructure	Mechanical Engineering for Society and Industry	Oct 2021

# Papers, Books & Chapters published



Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
58	Manu Srivastava, Sandeep Rathee	Additive manufacturing: recent trends, applications and future outlooks	Progress in Additive Manufacturing (Springer)	Oct 2021
59	Summera Bandy, Bilal Ahmad Reshi, M.F. Wani	Adhesion strength and tribological property of self-lubricating Si/MoS <sub>2</sub> nanocoating by pulsed laser Deposition method	Ceramics International	Sept 2021
60	Gurtej Singh, M.F. Wani and M. Marouf Wani	An experimental study on fuel energy saving in gasoline engines using GNP as a lubricant additive	International Journal of Engine Research	Sept 2021
61	Chandan Kumar, P.S.M Jena, R.K Singh, G. A. Harmain, J.K Sahu	Strain ratio effect on micro-structural evolution during low cycle fatigue Exploitation of nickel base super alloy IN 740H	International Journal of Pressure Vessels and Piping	Sept- 2021
62	Ayaz Ahmed , Adnan Qayoum , Fasil Qayoom Mir	Spectroscopic studies of renewable insulation materials for energy saving in building sector	Journal of Building Engineering	Sept 2021
63	Suhail Ganiny, Majid H Koul, Babar Ahmad	Time-delayed dual-rate haptic rendering: stability analysis and reduced order modeling	International Journal of Intelligent Robotics and Applications	Sept 2021
64	Mohammad Owais Qidwai, Irfan Anjum Badruddin, Noor Zaman Khan, Mohammad Anas Khan, Saad Alshahrani	Optimization of Microjet location using Surrogate Model coupled with Particle Swarm Optimization Algorithm.	Mathematics (MDPI)	Sep 2021
65	Sandeep Rathee , Manu Srivastava, Pulak Mohan Pandey, Abhishek Mahawar, Siddhant Shukla	Metal Additive Manufacturing Using Friction Stir Engineering: A Review on Microstructural Evolution, Tooling and Design Strategies	CIRP Journal of Manufacturing Science and Technology, (Elsevier),	Sept 2021
66	Ved Prakash Sharma, Naresh Varma Datla	Effect of aging time and loading rate on fracture behavior of Cu/Sn-0.7Cu Solder joints	Microelectronics Reliability, Elsevier, ISSN: 0026-2714	Sept 2021
67	Pulak M. Pandey, Sandeep Rathee, Manu Srivastava, Prashant K. Jain	Functionally Graded Materials: Fabrication, Properties, Applications, & Advancements (BOOK)	CRC Press, Taylor & Francis group	Sep 2021

# Papers, Books & Chapters published



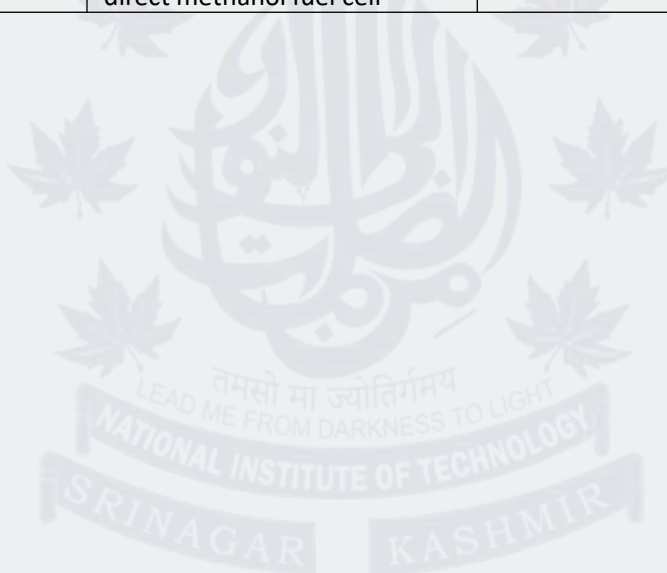
Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
68	Ashish Yadav, Pushkal Badoniya, Manu Srivastava, Prashant K Jain, Sandeep Rathee	Functionally graded materials: applications and future trends	CRC Press, Taylor & Francis group	Sept 2021
69	Nasir Khan, Sandeep Rathee, Manu Srivastava	Friction stir welding : An Overview on effect of tool variables	Materials Today Proceedings, (Elsevier)	Aug 2021
70	Anand Baghel, Chaitanaya Sharma, Sandeep Rathee, Manu Srivastava	Activated flux TIG welding of dissimilar SS202 and SS304 alloys: Effect of oxide and chloride fluxes on Microstructure & mechanical properties of joints	Materials Today Proceedings, (Elsevier)	Aug 2021
71	Abhijit Dey, Mrinal Shrivastav, Pawan Kumar	Optimum performance evaluation during machining of Al6061/ceno sphere AMCs using TOPSIS and VIKOR based multi-criteria approach	Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture	Aug 2021
72	M. Haneef	Effect of Material Hardness and Operating Conditions on Wear Rate of Sliding Tribo-pair	Smart Innovation, Systems and Technologies	Aug 2021
73	Wani Khalid Shafi, M.S. Charoo, M. Hanief	Effect of Fatty Acid Composition on the Lubricating Properties of Bio-Based Green Lubricants	Tribology & Sustainability	Aug 2021
74	Annayath Maqbool, Noor Zaman Khan, Arshad Noor Siddiquee	Towards Mg based light materials of future: Properties, applications, problems and their mitigation.	Journal of Manufacturing Science & Engineering (ASME)	Aug 2021
75	Sameera Mufazzal, Noor Zaman Khan, SM Muzakkir, Arshad Noor Siddiquee, Zahid A. Khan	A new fuzzy multi-criteria decision-making method based on proximity index value.	Journal of Industrial and Production Engineering (Taylor and Francis)	Aug 2021
76	Naveen Kumar, Harveer S. Pali, Ankit Sonthalia & Sidharth	Higher Alcohols as Diesel Engine Fuel	Green Energy and Technology	Aug 2021
77	Nasir Khan, Sandeep Rathee, Manu Srivastava, Chatanaya Sharma	Effect of tool rotational speed on weld quality of friction stir welded AA6061 alloys	Materials Today Proceedings, (Elsevier)	Aug 2021
78	Sanjay Kumar, Rakesh Sehgal, M.F. Wani, Mukund Dutt Sharma	Stabilization and tribological properties of magneto rheological (MR) fluids: A review	Journal of Magnetism and Magnetic Materials	July 2021



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Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
79	Rishmaya Kumar Mishra, Hemant Kumar, G. A. Harmain, Shaju K. Albert	Wear performance of Ni-Cr-B-Si hard face coatings fabricated by cold metal transfer welding	Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science	July 2021
80	Suhail Ganiny, Majid H Koul, Babar Ahmad	Stability Analysis of a Dual-Rate Haptics Controller Using Discrete-Time Root-Locus Method	Lecture Notes in Mechanical Engineering	July 2021
81	Diyan Ul Imaan, Fasil Qayoom Mir, Babar Ahmad	Proton exchange membrane based on poly (vinyl alcohol) as support and alpha alumina as Filler and its performance in direct methanol fuel cell	Journal of Environmental Chemical Engineering	July 2021



# Sponsored Projects Ongoing/ Awarded



Sr. No.	Title of the Project	Investigator (s)	Sponsoring Agency	Amount (in INR)
01	Support for Entrepreneurial & Managerial Development of MSMEs through Incubators	Dr. Saad Parvez Dr. Noor Zaman Khan	Ministry of Micro, Small & Medium Enterprises Govt. of India	Rs. 30,00,000/-
02	MSME design expertise (KYK time to know gaming & information App)	Dr. Saad Parvez	MSME Design Scheme	Rs. 1,69,500/-
03	MSME design expertise (1: AI driven object identifying educational talking toy 2: Design & Fabrication of the Magnetically levitating skateboard)	Dr. Saad Parvez Dr. Dinesh Kumar Rajendran	MSME Design Scheme	Rs. 6,78,000/-
04	Development, Mechanical and Tribological Characterization of Nano-Thermoplast (polypropylene), Thermo-reactive (epoxy resin) and Nano-filler composite materials	Prof M F Wani (PI) Prof Rakesh Sehgal (Co-PI) Dr. Shahid Saleem (Co-PI)	Department of Science & Technology (India-Uzbekistan Programme of Co-operation in Science & Technology)	Rs. 17,80,000/-
05	Design, Development, Theoretical and Experimental study of smart Tribological Coatings for space applications	Prof. M. F. Wani, Prof. Rakesh Sehgal, Dr. Mukund Dutt Sharma, Dr. Mir Irfan Ul Haq Dr. S. Anand Kumar	DST-RSF (Under Indo - Russian Project Scheme)	Rs. 100,00,000/-
06	Spark Plasma Sintering based Material Development	Prof. M. F. Wani, Prof. Sheikh Nazir Ahmad	DST, Ministry of Science and Technology, Govt. of India	Rs. 102,00,000/-
07	Conversion of Bio-Oils cultivated in J& K to lubricant by enhancing tribological characteristics	Prof. M. Hanief	JK STIC	Rs. 8,49,000/-
08	Development and Tribological Testing of Nano lubricants for Automotive Applications	Prof. M. Hanief	JK STIC	Rs. 6,49,000/-
09	Robotic Glove:3D Printed Haptic-Feedback and Brain-Computer Interfaces (BCIs) enabled toy device for Neuro-rehabilitation of children	Dr. Sandeep Rathee	MSME, Govt. of India	Rs. 1,50,000/-

# Details of Patents Applied/Received



Sr. No.	Title of the Patent	Inventor(s)	Status	Details
1	A feature boosted Web-based product purchase recommendation, method & system.	Sarfraz Masood, Sameera Mufazzal, Noor Zaman Khan, S M Muzakkir, Zahid A Khan	<i>Granted</i>	23-Mar-2022
2	Implementation of Affine Boolean Function for 16 Queen Problem and Its Application Thereof,	Ranjeet Kumar Rout, S. Umar Shabb Sheikh, Harveeer Singh Pali, Ratikant Sahoo	<i>Published</i>	10-Sept-2021
3	An eco-friendly low cost hybrid solar dryer for drying vegetables and fruits	Harveeer Singh Pali, Ranjeet Kumar Rout	<i>Published</i>	24-Dec-2021

## Testing & Consultancy

Sr. No.	Title of the Project	Investigator(s)	Consultancy rendered to	Amount Earned (in INR)
1	Inspection of Chain Pulley System in Baba Atomic Center Zakoora Srinagar	<i>Prof. Sheikh Nazir Dr. Mursaleen Dr. Mukund Dr. Pali</i>	<i>Baba Atomic Center Zakoora, Srinagar</i>	<i>Service rendered on inter governmental coordination</i>
2	Provision of Alternate ATC Building at Air force Station, Jammu	<i>Prof. Sheikh Nazir Dr. Mursaleen Prof. Adnan Qayoum</i>	<i>Air force Station, Jammu</i>	<i>Rs. 25,000/-</i>

# Ph.D. Degrees Awarded



Sr. No.	Name of Scholar	Name of Supervisor	Topic/ Area of research	Degree Awarded
1	Mr. Syed Danish Fayaz	Prof. M FWani	Prevention of Scuffing and Wear Abnormality in Piston Ring/Cylinder Liner Conjugation : Conventional and Nano lubrication Approaches.	2021
2	Mr. Ishfaq Amin	Prof (Dr.) G. A. Harmain	Sediment based Tri- biological studies on some hydro runner materials used in Jammu & Kashmir State	2021
3	Mr. Sheikh Gulam Mohammad	Prof. Sheikh Nazir Prof Rakesh Sehgal (Director NIT Srinagar)	Structural Integrity assessment of Welded and Concrete Structures	Sept 2021
4	Mr. Ayaz Ahmed	Prof. Adnan Qayoum Dr. Fasil Qayoom Mir	Investigation of the Thermal Behavior of Various Insulating Materials	Jan 2022
5	Mr. Masrat Bashir	Prof. Adnan Qayoum Dr. Shahid Saleem	Thermal Analysis of Disc Brakes	Mar 2022
6	Mr. Mushtaq Ahmad Rather	Prof. M M Wani		Dec 2021
7	Mr. Omar Hussain	Prof. Babar Ahmad Dr. Shahid Saleem	Evaluation and enhancement of the Tribological properties of UHMWPE for Bio- medical applications.	Jan 2022

# Conferences, Courses & Training Attended



Sr. No.	Name of the Faculty	Name of the Program Attended	Institute/Place where attended	Dates
1	Prof. M F Wani	Air & Missile Defense, India webinar & Virtual expo	DRDO	11 - 14 June 2021
2	Prof. G. A. Harmain	IEEE Sponsored International Conference on Emerging Trends in Industry 4.0	O P Jindal University, Raigarh, Chhattisgarh, India	19 – 21 June 2021
3	Prof. G. A. Harmain	International Conference on Futuristic Trends in Material and Manufacturing	Delhi Technical Campus	07 – 08 April 2021
4	Prof. Sheikh Nazir Ahmad	Opportunities & Challenges in the Electric Automotives Resource Person	Dept. of Mech. Eng. NIT Srinagar	26 – 30 July 2021
5	Prof. Sheikh Nazir Ahmad	5-Axis CNC Machine Resource Person	Dept. of Mech. Eng. NIT Srinagar	07 – 14 March 2022
6	Prof. Sheikh Nazir Ahmad	Non-Destructive Testing and Evaluation Resource Person	Dept. of Mech. Eng. NIT Srinagar	26 – 30 July 2021
7	Prof. Babar Ahmad	ANM2021 conference, Portugal	University of Aveiro, Aveiro-Portugal	22 – 24 July 2021
8	Dr. Noor Zaman Khan	International Conference on Futuristic Trends in Material and Manufacturing	Delhi Technical Campus	07 – 08 April 2021
9	Dr. Noor Zaman Khan	Innovation Ambassador Training	Online mode (Conducted by MoE's Innovation Cell & AICTE)	30 June – 30 July 2021
10	Dr. Mohammad Mohsin Khan	2nd International Conference on Computational Intelligence and Energy Advancements (ICCIEA-2021)	Virtual	11 – 12 Sept. 2021
11	Dr. Harveeer Singh Pali	Effective Research Planning and Execution	National Institute of Technology-Srinagar	17 Nov 2021

# Conferences, Courses & Training Conducted



Sr. No.	Name of the Coordinator	Name of the Program Conducted	Sponsoring Agency	Dates
1	Prof. Sheikh Nazir Ahmad (Convener) Dr. Mohammad Mohsin Khan (Coordinator)	Additive Manufacturing From 3D Printing to the Factory Floor	AICTE Training and Learning (ATAL) Academy	23 – 27 Aug 2021
2	Dr. Harveeer Singh Pali	Opportunity & Challenges for Electric Vehicles in the Automotive	AICTE Training and Learning (ATAL) Academy	26 – 30 July 2021
3	Prof. Sheikh Nazir Ahmad Dr. Mohammad Mursaleen	Non-Destructive Testing & Evaluation	AICTE Training and Learning (ATAL) Academy	26 – 30 July 2021
4	Prof. Sheikh Nazir Ahmad Dr. Mohammad Mursaleen	One week short term training programmed on “Biomedical Devices: Design & Manufacturing”	NIT Srinagar, Sponsored by AICTE	20 – 24 Jun 2022
5	Dr. Dinesh Kumar Rajendran Dr. Noor Zaman Khan Dr. Mohammad Mohsin Khan	High End Workshop (KAARYASHALA) One Week Training Workshop on 5-Axis CNC Machine	SERB, GOI	07 – 12 Mar 2022
6	Dr. Pravesh Kumar Dr. Harveeer Singh Pali	2 <sup>nd</sup> International Conference on Computational Intelligence & Energy Advancement (ICCIEA-2021)	Vaagdevi College of Engineering Warangal and King Abulaziz University, Saudi Arabia	11 – 12 Sept. 2021
7	Dr. Mukund Dutt Sharma	International Conference on Nanotechnology for Better Living (NBL- 2021)	NIT Srinagar	07 – 11 Sept. 2021
8	Dr. Mukund Dutt Sharma	1 <sup>st</sup> Edition of Environmental Symposium on “Our Relation with Nature”	Government of J & K	10 Dec. 2021

# Purchases Undertaken



Sr. No.	Name of the Equipment/ Item	Quantity	Date of Purchase	Amount of Purchase
1	Polishing Machine	01	10/12/2021	Rs.75,685.00
2	Stereo zoom Microscope	01	10/12/2021	Rs.1,64,750.00
3	Metallurgical Microscope	01	10/12/2021	Rs.2,29,850.00
4	Leica Microscope	01	03/01/2022	Euro. 30990.00
5	COMSOL Multi physics single user CPU Locked License	01	04/02/2022	Rs.1,01,400.00
6	Acoustic Module single user CPU Locked License	01	04/02/2022	Rs.41,400.00
7	CAD Import Module single user CPU Locked License	01	04/02/2022	Rs.21,000.00
8	CFD Module single user CPU Locked License	01	04/02/2022	Rs.1,01,400.00
9	Heat Transfer Module single user CPU Locked License	01	04/02/2022	Rs.41,400.00
10	Material Library Module single user CPU Locked License	01	04/02/2022	Rs.21,000.00
11	Non-Linear Structural Material Module single user CPU Locked License	01	04/02/2022	Rs.41,400.00
12	Structural Mechanics Module single user CPU Locked License	01	04/02/2022	Rs.41,400.00
13	Conductive Ink Tech. based PCB Printer	01	25/02/2022	Rs.6,35,250.00
14	Sensor study platform	01	25/02/2022	Rs.2,04,250.00

# Purchases Undertaken



Sr. No.	Name of the Equipment/ Item	Quantity	Date of Purchase	Amount of Purchase
15	Digital channel mixed channel Oscilloscope with Touch screen	01	25/02/2022	Rs.2,25,750.00
16	Simulia Software	01	07/03/2022	Rs.14,87,273.00
17	Angev 3D Bio-printer	01	19/03/2022	Rs.10,76,550.00
18	Digital Hand Dynamometer	01	16/03/2022	Rs.65,000.00
19	5 in 1meter	01	21/03/2022	Rs.45,000.00
20	Audiometer	01	16/03/2022	Rs.2,40,000.00
21	3-DOF & 6-DOF Haptic Interface	01	28/03/2022	Rs.8,99,856.00
22	Sound Level Meter	01	08/03/2022	Rs.20,499.00
23	LCD Display Callipers	01	26/02/2022	Rs.10,000.00
24	Digital Liqua. Meter	01	07/03/2022	Rs.10,000.00
25	Digital Micrometre	01	07/03/2022	Rs.9,063.00
26	Mild steel Anthropometer	01	08/03/2022	Rs.19,999.00



# Major Activities



## Editorial Board



Editor-in-Chief : Prof. Dr. Nazir Ahmad Sheikh  
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