MECHANICAL ENGINEERING DEPARTMENTAL NEWSLETTER

ACADEMIC YEAR 2022-23

National Institute of Technology Srinagar
Srinagar, Jammu and Kashmir 190006

About MEC 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 Thermal Engineering, 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 the leaders in the dynamic world of industry.

Dr. Adnan Qayoum is the Current Head of the Department. The real strength of the Department lies in its qualified, dedicated and motivated faculty.

Message from Director

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 of the Department's Newsletter for the academic year 2022-23. This Newsletter serves as a valuable platform to showcase the Department's achievements, ongoing research endeavours, and the vibrant academic environment that fosters innovation and excellence. I commend the Mechanical Department for its efforts in bringing out this Newsletter. 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 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.

Message from HOD

Prof. Adnan Qayoum
Head, Mechanical Engineering Department

It gives me immense satisfaction while demonstrating via this newsletter the progress the department has been making in the post-pandemic years as to teaching and learning, research and development, community outreach, industrial consultancy, entrepreneurship, and human making.

Keeping with the spirit of the vision and mission of the department as well as the institute and aligning with the goals of the NEP 2020, the department has been focusing on not only producing excellent engineers and innovators but also life-skilled professionals possessing critical thinking, emotional intelligence, problem solving, decision making, and other interpersonal values and ethics like collaboration, empathy and cultural sensitivity via making the majors to be interdisciplinary and amalgamating the minors from the humanities and social sciences into the curriculum, especially for developing the new scheme and syllabi.

In a couple of years to come, the department aspires and plans to undergo significant transformation via introducing the state-of-the-art transdisciplinary research and pedagogical opportunities aiming at inculcating sustainable business and social skills in all the stakeholders including the alumni so that technology does not deviate from its purpose of bettering the world as a place of living.

I wish my best to the whole team involved in giving this bulletin the present shape. Also, I express my gratitude for the cooperation and contribution the department has received from other departments and the administration of the institute to this endeavor and beyond.

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.

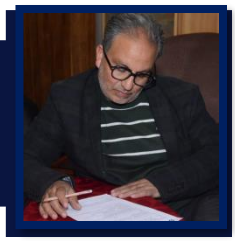
Mission of the Department

- 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)

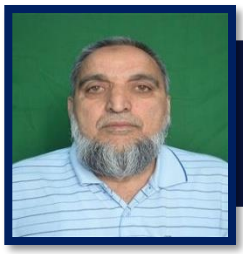
- To prepare students to get employment and pursue research in Mechanical Engineering and allied fields.
- To train students to identify and analyze Mechanical Engineering problems using an iterative approach that involves defining, quantifying, testing and review of the identified challenges.
- To enable 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 and empowers them to understand the significance of lifelong learning.

Faculties



Prof. Adnan Qayoum
Professor & Head (October 2022 onwards)
Experimental Fluid Mechanics, Heat Transfer
Augmentation, Design of Thermal Systems.

Prof. M. F. Wani
Professor (HAG)
Tribology, Nano Tribology, Life Cycle Engineering



Prof. G.A. Harmain
Professor (HAG)
Computational Mechanics, FEM, Thermo elasticity
and Second Sound, Fracture Mechanics and Material Fatigue

Prof. N. A. Sheikh
Professor
Aircraft wing vibration, Smart Structures, Finite Elements.

Prof. M. Marouf Wani
Professor
Internal Combustion Engines, Combustion of Alternative fuels,
Emission control.; CFD Applications in I C Engines

Prof. Babar Ahmad
Professor
Haptics and Control, MEMS, Ultrasonic Transducers

Dr. Mohammad Hanief
Associate Professor
Wear modeling, Materials, Tribology

Dr. M. S. Charoo
Associate Professor
Nano lubrication, Materials, Tribology

Faculties

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. 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

Faculties

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. Dinesh Kumar R
Assistant Professor
Production Engineering, Underwater Welding, Friction Stir Welding/ Processing, Wire Arc Additive Manufacturing, CNC

Dr. Deepak Kumar Naik
Assistant Professor
Advanced Manufacturing Technology/ CNC & Automation

Dr. Azher Jameel
Assistant Professor
Advanced Computational Mechanics

Dr. Ved Prakash Sharma
Assistant Professor
Failure Analysis, Fracture Mechanics, Microelectronic Package Reliability, Finite Element Modeling

Dr. Suhail G Khosa
Assistant Professor (Contract)
Haptics, Robotics, Control Engineering, Optimization, Machine Learning.

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
1	Annayath Maqbool, Noor Zaman Khan, Arshad Noor Siddiquee, Irfan Anjum Badruddin, Mohamed Hussien, Mohammed Imran Khan	Overcoming challenges in using magnesium-based materials for industrial applications using friction- stir engineering	Materials Science and Technology	*Jun 2023*
2	Bisma Ali, Adnan Qayoum, Shahid Saleem Fasil Qayoum Mir	Experimental investigation of nanofluids for heat pipes used in solar photovoltaic panels	Journal of Thermal Engineering	*Apr 2023*
3	Yellu Kumar, Adnan Qayoum, Shahid Saleem, Fasil Qayoum Mir	Combined effect of upstream ramp and effusion cooling in combustion chamber liners of gas turbine	Journal of Thermal Engineering	*Apr 2023*
4	Mir Mohsin John, M Hanief	Modelling frictional noise using artificial neural network and regression: the case of steel on steel reciprocating sliding	International Journal of Materials Engineering Innovation	*Apr 2023*
5	M S Charoo, Fozia Akhter, M Hanief, Khalid Shafi Wani, Mehak Nissar	Effect of Saturated Fatty Acids on the Antiwear & Rheological Properties of Olive Oil	Tribology in Industry	*Mar 2023*
6	Omar Hussain, Babar Ahmad, Sheikh Shahid Saleem	Biomaterials for artificial knee joint replacement: a review	Int. J. Materials Engineering Innovation	*Mar 2023*
7	Pranav Dev Srivyas, M S Charoo, Soundhar Arumugam Tanmoy Medhi	Synergism of the hybrid lubricants to enhanced tribological performance	Book: Nanomaterials for Sustainable Tribology	*Mar 2023*
8	Pranav Dev Srivyas, M.S. Charoo, Soundhar Arumugam Tanmoy Medhi	Tribological performance of RGO & Al2O3 nanodispersions in synthetic lubricant	Book: Nanomaterials for SustainableTribology	*Mar 2023*
9	Shahnaz Bashir, Mohammad Jebran Khan, M F Wani, S Shahid Saleem, Mir Mohsin John, Qazi Junaid Ashraf, Tabin Nissar	Extreme pressure properties of garlic oil: comparative investigations with PAO4 base oil and PAO/garlic oil blend	Engineering Research Express,	*Mar 2023*
10	Ali Imran Ansari, Nazir Ahmad Sheikh	Simulation and Experimental Assessment of acrylonitrile butadiene styrene polymer based new lattice design	Journal of The Institution of Engineers (India): Series C	*Mar 2023*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
11	Sanjay Kumar, Bharat Kumar, Rishabh Sehgal, M F Wani, Deepak Kumar, Mukund Dutt Sharma, Vivek Singh, Rakesh Sehgal, Vijay Kumar	Advantages and Disadvantages of Metal Nano-particles	Book: Nano-particles Reinforced Metal Nanocomposites: Mechanical Performance and Durability	*Mar 2023*
12	Raj Kumar, Mohammad Mursaleen, GA Harmain, Ashutosh Kumar	A Critical Review of Fatigue Life Prediction on 316LN SS	Advances in Modeling & Optimization of Manufacturing & Industrial Systems: Select Proceedings ofCIMS 2021	*Feb 2023*
13	Annayath Maqbool, Nadeem Fayaz Lone, Tariq Ahmad, Noor Zaman Khan, Arshad Noor Siddiquee	Effect of hybrid reinforcement and number of passes on microstructure, mechanical and corrosion behavior of WE43 Mg alloy based metal matrix composite	Journal of Manufacturing Processes	*Feb 2023*
14	Mohammad Mohsin Khan, Mehek Nisar, M Irfan Hajam	High-Stress Abrasive Wear Analysis of in Situ TiC-Reinforced Zinc– Aluminum Composites Using Integrated Taguchi– TOPSIS Method	Advanced Engineering Materials	*Feb 2023*
15	Mohammad Kamran, Adnan Qayoum	Experimental investigation of natural convection of Fe3O4-water nanofluid in a cubic cavity	Journal of Dispersion Science and Technology	*Feb 2023*
16	Sheikh Idrees Ali, Sheikh Nazir Ahmad	Wear and Corrosion Behavior of Zn-Ni-Cu and Zn-Ni-Cu-TiB2-Coated Mild Steel	Journal of Materials Engineering and Performance	*Feb 2023*
17	Ali Imran Ansari, Nazir Ahmad Sheikh	Biocompatible Scaffold Based on Silk Fibroin for Tissue Engineering Applications	Journal of The Institution of Engineers (India): Series C	*Feb 2023*
18	Aazim Shafi Lone, Showkat Ahmad Kanth, G A Harmain, Azher Jameel	Modeling of Large Sliding Between Contacting Bodies by Penalty-Based Element-Free Galerkin Method Using Node-to- Segment Approach	Iranian Journal of Science & Technology, Transactions of Mechanical Engineering	*Feb 2023*
19	Aazim Shafi Lone, Showkat Ahmad Kanth, G A Harmain, Azher Jameel	Modeling of large sliding between contacting bodies by penalty-based element-free Galerkin Method Using Node-to- Segment Approach	Iranian Journal of Science and Technology, Transactions of Mechanical Engineering	*Feb 2023*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
20	Akshay Balachandran, Irfan Majeed Bhat, Ruheena Tabasum, Ghulam Mohd, Mohammad Farooq Wani, Kowsar Majid, Malik Wahid, Saifullah Lone	Transfer-Printed Environmental Friendly Anisotropic Filter with laser controlled Micropores for EfficientOil/Water Separation	ACS Applied Polymer Materials	*Feb 2023*
21	Raj Kumar, Mohammad Mursaleen, G A Harmain, Ashutosh Kumar	A Critical Review of Fatigue Life Prediction on 316LN SS	Advances in Modeling and Optimization of Manufacturing & Industrial Systems: Select Proceedings of CIMS 2021	*Feb 2023*
22	Amit Kumar	Prospects of pyrolysis oil as Diesel Engine Fuel	*ICCEMME 2023*	*Feb 2023*
23	Ashish Kumar Singh	Effects of Biodiesel- Diesel-n Butanol and Bio disel-Diesel-n Octanol blends on the Emission and combustion parameters of a CI Engine.	*ICCEMME 2023*	*Feb 2023*
24	Mohd. Mujataba Ahmed	Allometry of Nanoparticles on Diesel- Biodiesel blends for CI Engine Performance, Combustion and Emissions.	*ICCEMME 2023*	*Feb 2023*
25	Bisma Ali, Adnan Qayoum, Shahid Saleem, Fasil Qayoom Mir	Effect of graphene/ hydrofluoroether (HFE-7100) nanofluids on start-up and thermal characteristics of pulsating heat pipe	Journal of Thermal Analysis and Calorimetry	*Jan 2023*
26	Shahid Manzoor Wani, Babar Ahmad, Sheikh Shahid Saleem	Nano-mechanical and nano-tribological characterization of Ni-Co- BN nano-composite Coating for bearing applications.	Tribology International	*Jan 2023*
27	Mohammad Kamran, Adnan Qayoum	Effect of ZnO nanofluids on thermo-hydraulic characteristic of flow in a heated duct	Energy Sources, Part A: Recovery, Utilization, and Environmental Effects	*Dec 2022*
28	Hussain vali Rajammagari, M Marouf Wani	Experimental analysis of the effect of zinc oxide nano additive diesel- ethanol blend on the performance & emission characteristics of a variable compression ratio diesel engine at various compression ratios	Petroleum Science and Technology	*Dec 2022*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
29	Diyan ul Imaan, Fasil Qayoom Mir, Babar Ahmad	In-situ preparation of PSSA functionalized ZWP/ sulfonated PVDF composite electrolyte as proton exchange membrane for DMFC applications	International Journal of Hydrogen Energy	*Dec 2022*
30	Shafi Ahmad, Sarfaraz Masood, Noor Zaman Khan, Irfan Anjum Badruddin, Ali Ahmadian, Zahid A Khan, Amil Hayat Khan	Analysing the impact of COVID-19 pandemic on the psychological health of people using fuzzy MCDM methods	Operations Research Perspectives	*Dec 2022*
31	Showkat Ahmad Kanth, G A Harmain, Azher Jameel	Assessment of Fatigue Life in Presence of Different Hole Geometriesby X-FEM	Iranian Journal of Science and Technology, Transactions of Mechanical Engineering	*Dec 2022*
32	Deepak Kumar, G A Harmain, Gaurav, K P Lijesh, Basil Kuriachen, Harish Hirani, Jibin T Philip	A Novel Seal Design to Enhance MR Brake Performance	Transactions of the Indian Institute of Metals	*Dec 2022*
33	Showkat Ahmad Kanth, G A Harmain, AzherJameel	Assessment of Fatigue Life in Presence of Different Hole Geometriesby X-FEM	Iranian Journal of Science & Technology, transactions of Mechanical Engineering	*Dec 2022*
34	Vibhushit Gupta, Azher Jameel, Shubham K Verma, Sanjeev Anand, Yatheshth Anand	An insight on NURBS based isogeometric analysis, its current status and involvement inmechanical applications	Archives of Computational Methodsin Engineering	*Nov 2022*
35	Amit Kumar, Harveer Singh Pali, Manoj Kumar	A comprehensive review on the production of alternative fuel through medical plastic waste	Sustainable Energy Technologies & Assessments	*Nov 2022*
36	Misba Jan, Mohammad Mursaleen Butt, Mohammad Muzaffarul Hassan	Fluid flow characteristics and heat transfer performance in microchannel heat sinks: A review	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	*Nov 2022*
37	Gurtej Singh, MF Wani, M Marouf Wani	A comparative investigation on tribological properties of piston ring/cylinder liner tribo-pair using GNP & GNF dispersed lubricants	Inder-Science Online.	Nov 2022

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
38	Chandra Kant, G A Harmain	Analysis of Single Overload Effect on Fatigue Crack Propagation Using Modified Virtual Crack Annealing Model	Book: Recent Developments in Mechanics and Design: Select Proceedings of INCOME 2021	*Nov 2022*
39	Sanjay Kumar, Rakesh Sehgal, M.F. Wani, Mukund Dutt Sharma	Friction and wear properties of core-shell (CI is a core & GO is a shell) particles based magneto rheological fluid under steel on steel point contacts	Journal of Industrial and engineering chemistry	*Nov 2022*
40	Gurtej Singh, M.F. Wani, M. Marouf Wani	A comparative investigation on tribological properties of piston ring / cylinder liner tribo-pair using GNP and GNF dispersed lubricants.	International Journal of surface science and Engineering	*Nov 2022*
41	Ashutosh Kumar,G A Harmain	A Study on Fatigue Life assessment of Alloy 718 as a Function of Load Ratio in Conjunction with Newman's Model	Transactions of the Indian Institute of Metals	*Nov 2022*
42	Sheikh Idrees Ali, Sheikh NazirAhmad	Erosion Behavior of Zn- Ni-Cu and Zn-Ni-Cu-TiB2 Coated Mild Steel.	Journal of Materials Engineering & Performance	*Nov 2022*
43	Mir Mohsin John, M Hanief	Frictional noise mitigation using synergetic approach of laser surface texturing and bio-lubrication	Tribology International	*Nov 2022*
44	Zahid Mushtaq, M Hanief, Kaleem Ahmad Najar	Non-Edible Biodegradable Plant Oils: The Future of the Lubricant Industry	Industrial Tribology	*Nov 2022*
45	Manu Srivastava, Sandeep Rathee, Ankit Tiwari, Mehul Dongre	Wire arc additive manufacturing of metals: A review on processes, materials and their behaviour	Materials Chemistry and Physics	*Nov 2022*
46	Vibhushit Gupta, Shubham K Verma, Sanjeev Anand, Azher Jameel, Yatheshth Anand	Transient iso-geometric heat conduction analysis of stationary fluid in acontainer	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering	*Oct 2022*
47	Sheikh Haris Mukhtar, M F Wani, Rakesh Sehgal, M D Sharma	Nano-mechanical and nano-tribological characterisation of self- lubricating MoS2 nano-Structured coating for space applications	Tribology International	*Oct 2022*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
48	Omar Hussain, Shahid Saleem Sheikh, Babar Ahmad	Fabrication & tribological behavior of novel UHMWPE/ vitamin-C/graphene nano-platelets based hybrid composite for joint replacement	Industrial Lubrication and Tribology	*Oct 2022*
49	Mohd Mujtaba Ahmed, Harveer Singh Pali, Mohammed Mohsin Khan	Experimental analysis of diesel/biodiesel blends with a nano additive for the performance and emission characteristics of CI Engine	International Journal of Engine Research	*Oct 2022*
50	Ajaz Ali, Sheikh Nazir Ahmad	Effect of Temperature on Hard TiB2-Al2O3-Ti Coatings Deposited Using Electron Beam Physical Vapor Deposition	Journal of Materials Engineering & Performance	*Oct 2022*
51	Sheikh Haris Mukhtar, M. F. Wani, Rakesh Sehgal, M. D. Sharma	Nano-mechanical and nano-tribological characterisation of self-lubricating MoS2 nano-structured coating for space applications	Tribology International	*Oct 2022*
52	Parveen Kumar, Jibin T. Philip, M. F. Wani, Himanshu Rai, Himanshu Vashishtha, Basil Kuriachen, Deepak Kumar	Study of Tribological Properties of EN8 Steel against Inconel X-750 Alloy under Dry and Lubricated Conditions	Transactions of the Indian Institute ofMetals	*Oct 2022*
53	Pranav Dev, Srivyas, M S Charoo, M F Wani, Rakesh Sehgal, Ankush Raina, Mir Irfan Ul Haq, Chandra Shekhar, Tanmoy Medhi, SoundharArumugam	Impact of surface texturing on the tribological behaviour of aluminium-silicon (Al-Si/Al2O3) advanced composite under dry and lubricating conditions	Surface Topography: Metrology & Properties	*Oct 2022*
54	Mir Mohsin John, M Hanief	Effect of lubrication on frictional noise and coefficient of friction in sliding tribo-pair using Taguchi's integrated TOPSIS method	Biomass Conversion and Biorefinery	*Oct 2022*
55	Pranav Dev Srivyas, M S Charoo, M F Wani, Rakesh Sehgal, Ankush Raina, Mir Irfan Ul Haq, Chandra Shekhar, Tanmoy Medhi, Soundhar Arumugam	Impact of surface texturing on the tribological behaviour of aluminium- silicon (Al-Si/Al2O3) advanced composite under dry and lubricating conditions	Surface Topography: Metrology & Properties	*Oct 2022*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
56	Abhishek Sharma, Harveer Singh Pali, Manish Kumar, Nishant Kumar Singh, Erween Abid Rahim, Yashvir Singh, Naveen Kumar Gupta	Effect of α-aluminium oxide nano additives with Sal biodiesel blend as a potential alternative fuel for existing DI diesel engine	Energy & Environment	*Oct 2022*
57	Akash Dwivedi, Mohammad Mohsin Khan, Harveer Singh Pali	Numerical analysis of microchannel heat sink composed of SiC and CNT Reinforced ZrB2 composites	Journal of Engineering Research	*Oct 2022*
58	Manu Srivastava, Sandeep Rathee, Vivek Patel, Atul Kumar, Praveennath G Koppad	A review of various materials for additive manufacturing: Recent trends and processing issues	Journal of Materials Research and Technology	*Oct 2022*
59	Malik Parveez, G A Harmain, AK Dhiman, Jaleel Khan	Flow Characteristics of Power-Law Fluid Around Circular Cylinder	Book: Recent Advances in Mechanical Engineering: Select Proceedings of CAMSE 2021	*Sept 2022*
60	Ali Imran Ansari, Nazir Ahmad Sheikh	A Review of Bone Regeneration Mechanisms and Bone Scaffold Fabrication Techniques (Conventional and Non-Conventional)	Journal of The Institution of Engineers (India): Series C	*Sept 2022*
61	Ali Imran Ansari, Nazir Ahmad Sheikh	Bone Tissue Regeneration: Rapid Prototyping Technology in Scaffold Design	Journal of The Institution of Engineers (India): Series C	*Sept 2022*
62	R Hussain Vali, Anh Tuan Hoang, M Marouf Wani, Harveer Singh Pali, Dhinesh Balasubramanian, Müslüm Arıcı, Zafar Said, Xuan Phuong Nguyen	Optimization of variable compression ratio diesel engine fueled with Zinc oxide nanoparticles and biodiesel emulsion using response surface methodology	Fuel	*Sept 2022*
63	Abhijit Dey, Premdeep Singh Rathee, Mohammad Mohsin Khan	Computational Fluid Dynamics Approach for Frictional Heat Flow Analysis During Friction Stir Welding Process	Arabian Journal for Science and Engineering	*Sept 2022*
64	Amit Kumar, Harveer Singh Pali, Manoj Kumar	Effect of injection timing of waste plastic oil and its blends on CRDI diesel engine	International Journal of Engine Research	*Sept 2022*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
65	Harveer Singh Pali, Abhishek Sharma, Manish Kumar, Vivek Anand Annakodi, Nishant Kumar Singh, Yashvir Singh, Dhinesh Balasubramanian, Balakrishnan Deepanraj, Thanh Hai Truong, Phuoc Quy Phong Nguyen	Enhancement of combustion characteristics of waste cooking oil biodiesel using TiO2 nanofluid blends through RSM	Fuel	*Sept 2022*
66	Basant Lal, Abhijit Dey, MF Wani	Effect of Frictional heating on mechanically mixed layers During dry sliding contact of Ti-6Al-4V alloys at high Temperature in vacuum Condition	Surface Review and Letters	*Sept 2022*
67	Himanshu Shekhar Gupta, Rakesh Sehgal, Mohammad Farooq Wani	Tribological characterization of eco-friendly bio-based mahua and flaxseed oil through nanoparticles	Biomass Conversion and Biorefinery	*Aug 2022*
68	Sheikh Idrees Ali, Sheikh Nazir Ahmad	Corrosion behaviour of HVOF deposited Zn–Ni– Cu and Zn–Ni–Cu–TiB2 coatings on mild steel	Corrosion Reviews	*Aug 2022*
69	Tariq Ahmad, Noor Zaman Khan, Mohammad Mohsin Khan, Nadeem Fayaz Lone, Arshad Noor Siddiquee, Babar Ahmad, Shafi Ahmad, Zahid A Khan, Sheikh Shahid Ul Islam	Fabrication and machinability study of Zn- Al-TiC composite using wire EDM with different dielectric media	Advances in Materials and Processing Technologies	*Aug 2022*
70	Rismaya Kumar Mishra, Hemant Kumar,GA Harmain, Shaju K Albert	Comparative wear behaviour of Ni-Cr-B-Si hard face coatings made by cold metal transfer and plasma transfer Arc welding processes	Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications	*Aug 2022*
71	A Karpagaraj, J Anthuvan Stephen Edberk,T Deepan Bharathi Kannan, Dinesh Kumar Rajendran, T Ramesh	Effect of GTAW process parameters on joining stainless steel 316L	AIP Conference Proceedings	*Aug 2022*
72	Ashish Kumar Singh	Feasibility of Characterstics, Safty and combustion of Diesel/ Biodiesel/ Bioethanol combination as a current CI Engine fuel	*9th International Symposium of Science and Technology (ISFT 2022)*	*Aug 2022*

Papers, Books & Chapters published

Sr. No.	Name of authors and co-authors	Title of paper	Journal/ Conference where published	Date of publication
73	Abhijit Dey, Mohammad Mohsin Khan	Investigation of Erosion Wear Characteristics of LM13/SiC Composites Implementing Box-Behnken Design Methodology	Journal of Bio & Tribo-Corrosion Implementing Box-Behnken DesignMethodology	*Aug 2022*
74	M Chandarana, VL Sateesh, NA Sheikh, G N Dayananda	Vibration Control of a Smart Composite Plate with Damaged Substrate	Journal of Vibration Engineering & Technologies	*Jul 2022*
75	Suhail Ahmed Manroo, Noor Zaman Khan, Babar Ahmad	Mechanical, Wear & Corrosion Properties Investigation of ZE41/TiB2 Surface Composites Fabricated by Friction Stir Processing	Journal of Manufacturing Science and Engineering	*Jul 2022*

Ph.D. Degrees Awarded

Sr. No.	Name of Scholar	Name of Supervisor	Topic/ Area of research	Degree Awarded
1	Jagtar Singh	Prof. M F Wani	Tribological characterization of Maxphase alloys	**Awarded** 2022
2	M. Zehab Ud Din	Prof. G. A. Harmain	An Assessment of sediment erosion of Pelton Turbine Buckets in Himalayan Belt of Jammu and Kashmir	**Awarded** 2022
3	Aazim Shafi Lone	Prof. G. A. Harmain Dr. Azhar Jameel (co supervisor)	Modelling and simulation of contact problems by enriched techniques	**Awarded** 2022
4	Showkat Ahmad Kanth	Prof. G. A. Harmain Dr. Azhar Jameel (co supervisor)	Elastoplastic Crack Growth Using Enriched Numerical Techniques	**Awarded** 2022
5	Sheikh Gulam Mohammad	Prof. Sheikh Nazir and Prof Rakesh Sehgal (Director NIT Srinagar)	Structural Integrity assessment of Welded and Concrete Structures	**Awarded** Sept 2021
6	Ashutosh Kumar	Prof. G. A. Harmain	An investigation on crack propagation of superalloy 718	**Awarded** 2022
7	Sheikh Idrees Ali	Prof. Sheikh Nazir	Development of Erosion and Corrosion Resistant Coatings	**Awarded** 2023
8	Aijaz Ali	Prof. Sheikh Nazir	Development of Hard Coatings for Tribological Applications	**Submitted** Mar 2023
9	Bisma Ali	Prof. Adnan Qayoum Dr. Shahid Saleem Dr Fasil Qayoum	Heat Transfer	**Awarded** 2023
10	S. Naresh Kumar Reddy	Prof. M M Wani	Experimental Investigation on a VCR Single Cylinder Diesel Engine fuelled by blends of Biodiesel with Antioxidant & nano additives	**Awarded** June 2022

Ph.D. Degrees Awarded

Sr. No.	Name of Scholar	Name of Supervisor	Topic/ Area of research	*Degree Awarded*
11	Rajammagari Hussain Vali	Prof. M M Wani	Experimental Investigations On The Effect Of Nano- Additives On Variable Compression Ratio Diesel Engine Fuelled With Diesel-Emulsion	**Awarded** July 2022
12	Gurtej Singh	Prof. M. M. Wani & Prof. M. F. Wani	An experimental investigation on tribological and engine performance characteristics of gasoline engine using GNP as a lubricant additive	**Awarded** July2022
13	Diyan ul Imaan	Prof. Babar Ahmad & Prof. Fasil Qayoom mir	Synthesis and characterization of hybrid proton exchange membranes and their performance evaluation for DMFC applications	**Awarded** July2022
14	Suhail Ahmad Manroo	Prof. BabarAhmad Dr. Noor Zaman Khan	Friction stir processing	**Awarded** Oct 2022
15	Zahid Mushtaq	Dr. Mohd Haneef	Formulation of biolubricant from non-edible bio-oils	**Awarded** Aug 2022
16	Mir Mohsin john	Dr. Mohd Haneef	Frictional noise characterization and mitigation	**Awarded**
17	Mehak Nisar	Dr. M. S. Charoo	Fabrication and Tribological characterization of hybrid composites for Mechanical applications	**Awarded**
18	Shariq Ahmad Bhat	Dr.M.S.Charoo	Formulation and evaluation ofrheological and tribological properties of vegetable oil based greases with nana additives	**Awarded** 2022
19	Vibushit Gupta	Dr.Yatheshth Anand (SMVDU Katra) Dr. Azher Jameel (Co-Supervisor)	Advanced Computational Mechanics	**Awarded** 2023

Sponsored Projects Ongoing/ Awarded

Sr. No.	Title of the Project	Investigator(s)	Sponsoring Agency	Amount (in INR)
01	Design, Development, Theoretical & Experimental Study of Smart Tribological Coatings for Space Applications	Prof. M F Wani (PI) Prof. Rakesh Sehgal (Co-PI) Dr. Shahid Saleem (Co-PI) Dr. Mukund Sharma (Co-PI)	Department of Science & Technology (India-Uzbekistan Programme of Co -Operation In Science & Technology) DST/INT/RUS/RSF/P-63/2021 (G)	Rs. 51,70, 282 /-
02	Identificationof Technological gaps in MSME clusters of J&K	Dr. Saad Parvez (PI) Dr. Noor Zaman Khan (Co-PI)	Technology Information Forecasting andAssessment Council (TIFAC), DST	Rs. 40,00,000 /-
03	Floating Cycle for DAL Lake	Dr. Dinesh Kumar R	Ministry of MSME	Rs.15,00,000/-
04	Development of Novel Thin-film for Nuclear application	Dr. Abhijit Dey, Dr. Mohammad Mohsin khan Prof. M. F. Wani Prof. Rakesh Sehgal	SERB-CRG	Rs. 34,60,000/-
05	Development of utra fine grained novel metallic materials for defence applicationsvia friction stir engineering and their characterization	Dr. Sandip Rathee (Co-Pi)	SERB	Rs. 43,00,000 /-
06	Design & Investigation of Nano structured TBC coatings (CoCrAlY/Ta/Hf & NiCoCrAlY/Ta/Hf as a bond coatings & 8% Y2O3 – ZrO2, Top ceramic on Superni-718 Substrate in adverse Environment at 8000°C – 1000°C for Areo Space Engines.	Dr. Atikur Rahman (PI) Dr. G A Harmain (Co-PI) Dr. Mukund Dutt Sharma (Co-PI)	Ministry of Defense Govt. of India	Rs. 80,87,632/-

Details of Patents Applied/ Received

Sr. No.	Title of the Patent	Inventor(s)	Status	Details
1	Design And Manufacturing of Patient-Specific Titanium Mesh Cranial Prosthesis Using CAD/CAM and Conventional Bending	Dr. Mohammad Mursaleen, Prof. (Dr.) Abrar Ahad Wani, Prof. (Dr.) Rakesh Sehgal, Dr. Sheikh Ghulam Mohammad, Prof. (Dr.) Sheikh Nazir Ahmad, Prof. (Dr.) Altaf Umar Ramzan	Published	07/06/2022 202211032620
2	Universal Friction Stir Welding/ Processing Work Fixture	Arshad Noor Siddiquee, Dr. Noor Zaman Khan, Zahid A. Khan	Granted	Patent No. 425143
3	Forced Cooling Friction Stir Welding Tool and Thereoff	Dr. S. Muthukumaran Dr. Dinesh Kumar R	Granted	Patent No. 418337
4	Wi-fi based Oxygen concentrator	Dr. Abhijit Dey	Design Accepted & Published	346741-001
5	Ein System zur Herstellung eines Nanobrennstoffs	Dr. Abhijit Dey	Granted	*C10L 1/02 (2006.01)*
6	System zur hohen adsorptiven Entfernung von Kationischem Farbstoff unter Verwendung von mit Anionischen Tensiden modifizierter Aktivkohle	Dr. Abhijit Dey	Granted	*C02F 1/28 (2023.01)*
7	Sand Jet Machining	Dr. Abhijit Dey	Granted	351279-001
8	Air intake system for I C Engine	Dr. Abhijit Dey	Application Accepted	*374118-001*
9	Prosthetic Arm	Dr. Sandeep Rathee, Dr. Manu Srivastava	Applied	09-Apr-2022 361771-001
10	Apparatus for Additive Manufacturing to Create Composite Structure	Ashish Yadav Pushkal Badoniya Dr. Prashant K Jain Dr. Sandeep Rathee	Applied	Apr 2022 361773-001
11	Friction Stir Welding Based on Additive Manufacturing, 2023	Dr. Sandeep Rathee	Applied	2023

Testing & Consultancy

Sr. No.	Title of the Project	Investigator (s)	Consultancy Rendered to	Amount Earned (in INR)
1	Third Party Inspection and Testing report of Programmable Dancing Aerators cum Fountains (PDAF's) installed at various locations around the periphery of Dal Lake.	Prof. (Dr.) M F Wani, Prof. (Dr.) Rakesh Sehgal, Prof. (Dr.) G. A. Harmain Prof. (Dr.) Shameem Lone Prof. (Dr.) Adnan Qayoum Dr. Shahid Saleem Dr. Sheikh J. Iqbal Dr. M. Mursaleen Dr. Nadeem	J & K Lakes Conservation & Management Authority *Allotment letter No. VC/LCMA/5683-90* *Date:- 27-09-2022* *Report submitted via letter No; NIT/DRC/205* *Date:- 21-03-2023*	Rs. 10, 00,000/-

Conferences, Courses & Training Attended

Sr. No.	Name of the Faculty	Name of the Program Attended	Institute/Place where attended	Date
1.	Dr. Adnan Qayoum	Proceedings of the 9th International and 49th National Conference on Fluid Mechanics and Fluid Power (FMFP)	IIT Roorkee	14-16 Dec 2022
2.	Dr. Adnan Qayoum	International Conference and Exhibition for Science (ICES2023).	King Saud University, Riyadh, Saudi Arabia	06 -08, Feb 2023
3.	Dr. Noor Zaman Khan	Regional meet organized by IIC, MoE's Innovation Cell	Chandigarh University	26 July 2022
4.	Dr. Noor Zaman Khan	9th International Symposium of Science and Technology (ISFT 2022)	Rajmangala University of Technology Suvarnabhumi, Thailand	16 -19 Aug 2022
5	Dr. Noor Zaman Khan	IP Awareness/Training Program	*Intellectual Property office, India (Online)*	27 Sept 2022
6	Dr. Mohammad Mohsin Khan	4th International Conference on Computational & Experimental methods in Mechanical Engineering	*G L Bajaj Institute of Technology and Management, Greater Noida*	09 -11, Feb 2023
7	Dr. Mohammad Mohsin Khan	2nd International Conference on Advances in Materials and Manufacturing Technology	*NIT Bhopal*	22 -26, Feb 2022
8	Dr. Harveer Singh Pali	*9th International Symposium of Science and Technology (ISFT 2022)*	*Rajmangala University of Technology, Suvarnabhumi, Thailand*	16 -19 Aug 2022
9	Dr. Harveer Singh Pali	4th International conference on Computational & Experimental Methods in Mechanical Engineering (ICCEMME-2023)	GL Bajaj Institute of Technology & Management, Greater Noida, (UP), India	09 -11, Feb 2023
10	Dr. Abhijit Dey	High end Workshop on 3D Printing, Nano Tribology and Characterization of Materials	*SERB*	29 Aug - 03 Sept 2022
11	Dr. Dinesh Kumar R	Workshop on Underwater Welding	*IIT Guwahati*	10 -14 Oct 2022

Conferences, Courses & Training Conducted

Sr. No.	Name of the coordinator	Name of the program conducted	Sponsoring Agency	Dates
1	Prof. Adnan Qayoum (Coordinator) Dr. S. Shahid Saleem (Co-Coordinaor) Dr. M. Mohsin Khan (Convener)	Thermal Characterization and Advanced Measurement Techniques	*AICTE Training and Learning (ATAL) Academy*	*13-24 Mar, 2023*
2	Dr. Sheikh Shahid Saleem	1st Indo-Russian Symposium/ FDP on Tribological Aspects of Smart Materials and Adaptive Coatings for Space/Industrial Applications	*NIT Srinagar*	*03-07 Oct, 2022*
3	Dr. Noor Zaman Khan Dr. Dinesh Kumar R	Design/Innovation awareness program for sensitizing MSMEs in J&K.	*Ministry of MSME*	*27 Feb-07 Mar, 2022*
4	Dr. Dinesh Kumar R, Dr. Noor Zaman Khan	National Conference on Design component of Innovation	*Ministry of MSME*	*13 -14 Mar, 2023*
5	Dr. Harveer Singh Pali	STC on Peace Education Program	*Prem Rawat Foundation*	*13 -17 Mar, 2023*
6	Dr. Dinesh Kumar R	National Conference on Innovation Hunt & Industrial Fest	*Indian Army*	*03 -07 Mar, 2023*
7	Dr. Sandip Rathee	High End workshop on 3D printing, nano tribology & characterization of materials	*SERB, Karyashala Scheme*	*29 Aug-03Sept 2022*

Purchase Undertaken

Sr. No.	Name of Equipment/Item	Quantity	Date of Purchase	Amount
1	BM Mild Steel Anthropometer	1	04 Apr 2022	Rs 19,999.00
2	Baincut Medium (CMM001)	1	10 Jun 2022	Rs 1,38,133.00
3	Microprocessor controlled Magnetic Stirrer	1	23 Sept 2022	Rs 73,430.00
4	Vacuum Pump Universal testing machine PH Meter B.O.D Meter 4V VIS Spectrometer	1 1 1 1 1	10 Jan 2023	Rs 8,02,121.00
5	PCS online UPS of Rating 20.0 KVA with Battery of Backup time of 60Mins	1	28-02-2023	Rs 3,10,000.00
6	Key sight Data Loggerunit storage Max. Multplexing channel 20	1	22-03-2023	Rs 5,13,400.00
7	Thermocouple Silicon rubber	20	22-03-2023	Rs 26,700.00
8	Heater	5	22-03-2023	Rs 7,050.00
9	10 Force Sensor range5000N 10 Friction Force Sensor Range 1000N	1 1	24-03-2023	Rs 11,01,159.00

Major Activities

Editorial Board

Editor-in-Chief : Prof. Adnan Qayoum
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