

BIO-DATA

Name: Dr. Sanjay Sharma

Designation: Assistant Professor

School: Mechanical Engineering

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Contact Number:9906134266 (Mob.) 2247 (O)

Experience Teaching: 13 years

Areas of Interest / Specialization/Research:

1. Solar Energy.
2. Tribology (Hydrodynamic Lubrication).
3. Computational Fluid Dynamics (CFD).

Qualification:

Degree	Year of passing	Subject
Ph. D	2019	Mechanical Engineering
M. Tech.	2011	Thermal Engineering
A.M.I.E (India)Sec A & B	2007	Mechanical Engineering
DIPLOMA	2004	Mechanical Engineering

Membership of Various Professional societies:

1. Chartered Engineer (Institution of Engineers, India).
2. Life Member of Institution of Engineers (India).
3. Life Member of Solar Energy Society of India.
4. Life Member of Tribology Society of India.



Work Experience:

S.No.	Position held	Name of institute	From to	To
1.	Assistant Professor	Shri Mata Vaishno Devi University, Katra	14th Sept,2011	Till date
2.	Lecturer	Dept. of Mech. Engg. Model Institute of Education & Technology, Jammu	15th Sept,2010	3rd Sept,2011
3.	Lecturer	Dept. of Mech. Engg. I E C S Polytechnic, Jammu.	10th January,2005	25th Dec, 2006.

Journal Publications:

S.No.	Year	Publication
1.	2024	"Effect of partial surface waviness on the dynamic and stability performance of journal bearing" <i>Lubrication Science(Wiley online library)</i> .,2024, (SCI) .
2.	2023	Performance Analysis of Journal Bearing having Surface Waviness operating under misaligned condition. <i>Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology</i> , 2023. (SCI) .
3.	2023	Effect of texture shapes and additives in lubricants on the dynamic characteristics of the hydrodynamic journal bearing. <i>Industrial Lubrication and Tribology</i> , 2023, (SCI) .
4.	2022	Performance analysis of textured journal bearing operating with and without nanoparticles in the lubricant.. <i>Industrial Lubrication and Tribology</i> , 2022, (SCI) .
5.	2022	Impact of partial surface waviness on the tribological performance of hydrodynamic journal bearing. <i>Lubrication Science(Wiley online library)</i> .,2022, (SCI) .
6.	2022	Impact of surface waviness on the static performance of journal bearing with CuO and CeO ₂ nanoparticles in the lubricant. <i>Industrial Lubrication and Tribology</i> , 2022, (SCI) .
7.	2022	Dynamic Performance Improvement of Journal Bearing by Using Dimple and Protruded Textured Surfaces. <i>International Journal of Surface Engineering and Interdisciplinary Materials Science (IJSEIMS)</i> , 10(1), pp.1-22, 2022, (SCOPUS) .
8.	2021	CFD based thermal efficiency of square shape protruded roughened absorber plate for solar air heater. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> ,2021, (SCI) .
9.	2020	The effect of V-shape protruded and dimple textured on the load-carrying capacity and coefficient of friction of hydrodynamic journal bearing: A comparative numerical study. <i>Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology</i> , 2020, (SCI) .
10.	2020	Investigating the effect of tool speed on the mechanical properties of Al5052 Processed by friction stir processing. 2020, <i>Materials Today: Proceedings</i> , 33, pp.1605-1609. (SCOPUS) .
11.	2019	Dynamic and stability performance improvement of hydrodynamic bearing by using triangular-shaped textures, <i>Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology</i> , 2019, (SCI) .

12.	2019	The dynamic performance analysis of chevron-shape textured hydrodynamic bearings <i>Industrial Lubrication and Tribology</i> , 2019. (SCI) .
13.	2019	Enhancement of steady state performance of hydrodynamic journal bearing using chevron-shaped surface texture. <i>Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology</i> , 2019, Vol. 233 (12) pp. 1833-1843. (SCI) .
14.	2019	Numerical study on steady state performance enhancement of partial textured hydrodynamic journal bearing. <i>Industrial Lubrication and Tribology</i> , 2019, DOI 10.1108/ILT-03-2019-0083. (SCI) .
15.	2019	An Experimental Investigation on multi-V and protrusion element on absorber plate of solar air heater. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> , 2019, DOI:10.1080/155670362019.1618986pp.1-9. (SCI) .
16.	2018	Performance of hydrodynamic journal bearing operating under transient wear. <i>Mechanics and Mechanical Engineering</i> , 2018, 22(1), pp.153-170. (SCOPUS) .
17.	2017	CFD based transient analysis of hydrodynamic journal bearing. <i>Research Journal of Engineering and Technology</i> , 2017, 8(2), p.101. (UGC Approved) .
18.	2017	Effect of aspect ratio on the performance of hydrodynamic journal bearing operating under wear. <i>International Journal of Theoretical and Applied Mechanics</i> , 2017, 12(3), pp.497-522. (UGC Approved) .
19.	2016	Hybrid Electric Discharge Machining Processes for Hard Materials: A Review. <i>Materials Focus</i> , 2016, 5(3), pp.202-208. (SCOPUS and ESCI)
20.	2016	A review on photo voltaic thermal systems, <i>International Journal of Scientific and Technical Advancements</i> , Volume 2, Issue 4, pp. 53-56, 2016. (UGC Approved) .
21.	2016	Effect of aspect ratio on the performance and stability of hydrodynamic Journal Bearings. <i>International Journal of Advance Research and Innovation</i> , 2016, 4(1), pp.96-105.
22.	2014	Comparative Study of Thermal Efficiency of Artificially roughened Solar Air Heater, 2014, <i>Journal of Energy Research and Environmental Technology</i>
23.	2012	Automatic sun-tracking solar cell array system. 2012, <i>Energy</i> , 8(9), p.20.
24.	2011	CFD based investigation on effect of roughness element pitch on performance of artificially roughened duct used in solar air heaters. <i>International Journal of Advanced Engineering Technology</i> , 2011, 2(1), pp.234-241.

Conference Publications:

S. No.	Year	Conference	Publication
1.	2024	RIST 2024, Holy Grace Academy of Engineering, Thrissur, Kerala, India	Optimization and Performance Evaluation of Macro-Grooved Hydrodynamic Journal Bearings for Industrial Applications
2.	2023	ICSTE-23, NIT Manipur	A review on the performance of the textured hydrodynamic journal bearing.

3.	2023	Tribo -India-23, NIT Srinagar	"Performance Analysis of Bearings with Surface Waviness and Operating with Lubricant Additives"
4.	2022	MYTRIBOS International Symposium 2022 MALAYSIA	Performance Analysis of Journal Bearing having Surface Waviness operating under misaligned condition
5.	2021	International Tribology Research Symposium 2021	Role of surface waviness on the performance of hydrodynamic journal bearing
6.	2021	International Tribology Research Symposium 2021	The influence of nano additives on the steady state performance of journal bearing
7.	2020	International Tribology Research Symposium 2020	Numerical Study of Circular Shape Dimple and Protruded Textured Hydrodynamic Journal Bearing System
8.	2019	4th International and 19th National Conference on Machines and Mechanisms (iNaCoMM 2019) at IIT Mandi	Lubrication Characteristics of Newtonian-lubricated Hydrodynamic Bearing with Partial and Fully Textured Surface
9.	2018	An International Conference on Tribology TRIBOINDIA-2018” at Veermata Jijabai Technological Institute, Mumbai, India during December,2018.	Numerical Study On Worn Hydrodynamic Journal Bearing Under Transient Loading
10.	2018	International Conference on Mechanical Engineering and Allied Sciences (ICMEAS-2018), held at Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir, India,	Performance of hydrodynamic bearing journal centre motion trajectories operating under transient wear
11.	2018	2nd national Conference on Innovative trends in Mechanical Engineering	CFD on roughened absorber Plate used in solar air heater
12.	2017	3 rd International conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET, 2017) organized by Shri Mata Vaishno Devi University, Katra	A review on methodology used in solar air heater for maximum thermohydraulic performance
13.	2017	4th National Conference on Recent Trends in Mechanical Engineering, November, 2017 at Department of Mechanical Engineering , Beant College of Engineering and Technology, Gurdaspur.	A review on type of Roughness used in solar air heater for maximum thermal performance
14.	2017	International conference on new and renewable Energy resources for Sustainable future, Department of mechanical engineering, SKIT, Jaipur, India	CFD based investigation of artificially Roughened Duct used in Solar Air heater

15.	2016	National tribology conference, Department of Mechanical Engineering, IIT (BHU), Varanasi	To study performance parameters of hydrodynamic journal bearing operating under wear
16.	2016	3 rd International conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET, November, 2016) organized by Shri Mata Vaishno Devi University, Katra	CFD based transient analysis of hydrodynamic journal bearing
17.	2016	3 rd International conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET, November, 2016) organized by Shri Mata Vaishno Devi University, Katra	Heat Transfer in Nanofluids
18.	2014	1st National Conference on Recent Trends in Mechanical Engineering (RTME-2014) at Department of Mechanical Engineering , Beant College of Engineering and Technology Gurdaspur-Pathankot Road, Gurdaspur.	“Comparative study of thermohydraulic performance of artificially roughened solar air heater”
19.	2014	5 th International conference On “Innovative Trends in Mechanical, Material, Manufacturing, Automobile, Aeronautical Engineering and Applied Physics” (ITMAEAP-2014) Organized by “Krishi Sanskriti” on August, 2014 Venue: Jawaharlal Nehru University, New Delhi.	“Comparative Study of Thermal Efficiency of Artificially Roughened Solar Air Heater”
20.	2011	National Conference on Engineering Applications (NCEA-2011) organized by St. Soldier’s Institute of Engineering, Technology & Management, Jalandhar.	Green building technologies: cure to global warming”
21.	2011	National Conference on Engineering Applications (NCEA-2011) organized by St. Soldier’s Institute of Engineering, Technology & Management, Jalandhar.	“Analysis of clean energy market in india and to identify opportunities”

Books:

1. Thermal Engineering-I for B.Tech and Diploma Engineering Students (Eagle Parkashan)
2. Thermal Engineering-II for B.Tech and Diploma Engineering Engineering Students (Eagle Parkashan)

Book Chapters:

1. Lubrication Characteristics of Newtonian-Lubricated Hydrodynamic Bearing with Partial and Fully Textured Surface." In Machines, Mechanism and Robotics, pp. 1635-1643. Springer nature, Singapore, 2022.
2. Effect of Nano-additives lubricant on the dynamic performance of textured journal bearing in Nanomaterials for Sustainable Tribology, CRC Press,2023 Taylor and Francis.
3. Impact of Nano-lubricant on the dynamic performance of journal bearing with surface waviness in Nanomaterials for Sustainable Tribology, CRC Press,2023 Taylor and Francis.
4. A review on the performance of the textured hydrodynamic journal bearing." In Recent advances in Materials, Springer nature, Singapore, 2023.

Awards:

1. **National Research Excellence Award 2024** during the National Science Conclave (NSC 2024) to be held virtually on 28 February 2024. The Award is bestowed by International Institute of Organized Research (I2OR) India. I2OR™ is Registered with Ministry of MSME, Govt. of India (UDYAM-PB-20-0002405).

Sponsored Research Projects:

S.no.	Title of the Project	Funding Agency	Sanctioned Amount (Rs)	Duration	Name of Project PI/Co-PI	Status
1.	Performance Evaluation of Solar Thermoelectric Generator Using PCM and different Nano-PCM as Thermal Energy Storage System	AICTE	14 lakh	3 years	PI	Under Evaluation

2.	Performance Evaluation of Box Type Solar Cooker Incorporated with Nano-Composite Phase Change Material.	AICTE	6 lakh	2 years	Co-PI	Under Evaluation
3.	The Static, dynamic and stability performance improvement of hydrodynamic journal bearing system by using surface textures.	DST-SERB	6 lakh	3 years	PI	Under Evaluation
4.	The performance enhancement of misaligned journal bearing system by using different shape of surface textures.	DST-SERB	6 lakh	3 years	PI	Under Evaluation

Invited Lectures/External expert/Resource person:

S.no.	Topic	Role	Date(s) of the event	Organization
1.	Two days workshop on "Electric vehicles"	Speaker	26th May 2023.	CIIT Centre Jammu
2.	One day workshop on "Introduction to MATLAB"	Speaker	20th January 2023.	SoME, SMVDU, Katra
3.	International Tribology Research Symposium 2021	Session Chair	5 th and 7 th November, 2021.	SoME, SMVDU, Katra
4.	Performance evaluation of journal bearing through a numerical approach	Speaker	16/10/21	Govt. Polytechnic Kathua
5.	Fabrication and performance evaluation of single pass solar air heater using M.s black painted absorber plate.	M-Tech Dissertation (Viva)	01/07/2021	Department of Mechanical Engineering DAV University, Jalandhar, Punjab.
6.	Tribology for Sustainable Development	Speaker	20th-24th July,2020	SoME, SMVDU, Katra
7.	International Tribology Research Symposium 2020	Session Chair	5 th and 7 th November, 2020.	SoME, SMVDU, Katra

8.	Role of CFD in mechanical Engineering systems	Speaker	25/04/2019	Govt. Polytechnic Jammu
9.	Analysis of process parameters in wire EDM using Taguchi method and multi objective grey relational analysis.	M-Tech Dissertation (Viva)	08/06/2019	Department of Mechanical Engineering DAV University, Jalandhar, Punjab.
10.	Multi response optimization of machining parameters of EDM using grey relational analysis in the Taguchi method.	M-Tech Dissertation (Viva)	08/06/2019	Department of Mechanical Engineering DAV University, Jalandhar, Punjab.
11.	Advance in Fluid Mechanics Applications	Speaker	15/09/2018	Govt. Polytechnic Jammu
12.	2 nd National conference on Innovative trends in Mechanical engineering	Session Chair	23 rd and 24 th March, 2018	SoME, SMVDU, Katra
13.	International conference on Mechanical engineering and Allied Sciences	Session Chair	14 th and 15 th September, 2018	SoME, SMVDU, Katra
14.	Experimental investigation of hydrodynamic journal bearing pressure operating with SAE15W40 lubricant containing different concentration of CuO nanoparticles as additive.	M-Tech Dissertation (Viva)	21/05/2018	Department of Mechanical Engineering. BCET, Gurdaspur, Punjab.
15.	Application and Research in solar thermal systems	Speaker	24/12/16	Govt. Polytechnic Kathua

Course Attended:

S. No.	Title of the Course	Organizing Agency	Duration
1.	Finite Element Method for Engineering Applications	IIT Mandi	One week
2.	Aakash for Education	IIT Bombay	Two days
3.	Engineering Mechanics	IIT Bombay	Two week
4.	UGC-sponsored General Orientation Course	University of Jammu	Four week
5.	Refresher Course in Gender Studies (ID)	University of Kashmir	Three week
6.	New and Renewable Energy Technologies	BCET Gurdaspur	One week
7.	Modeling and Simulation of Engineering System	BCET Gurdaspur	One week
8.	Entrepreneurship Development	Entrepreneurship Development Cell, SMVDU	Two week

9.	Optimization using MATLAB through ICT	SoME, SMVDU	One week
10.	Introduction to Thermodynamics: Transferring Energy from Here to There(MOOC COURSE)	University of Michigan, USA,	Eight week
11.	Steam and Gas power system (MOOC COURSE)	IIT Roorkee	Eight week
12.	Summer training Program on Active Learning workshop	IIT Bombay	One week
13.	FDP on sustainable Design and Manufacturing	SoME, SMVDU	One week
14.	Winter School for Engineering Stream	FDC, SMVDU	Two week
15.	Workshop on Professional Ethics and Human values –A Gandhian perspective,	FDC, SMVDU	One week
16.	Professional Development Training	IIM Indore	One week
17.	Engineering Systems in Motion: Dynamic of particles and bodies in 2d motion. (MOOC COURSE)	Georgia institute of Technology	Seven-week
18.	Material science: 10 things every engineer should know. (MOOC COURSE)	University of California, Davis	Five -week
19.	3D Printing for New Product Development	SoME, SMVDU, Katra	One week
20.	Municipal Solid Waste Management in Developing Countries. (MOOC COURSE)	(University in Lausanne, Switzerland)	Five -week
21.	One week online FDP on Emerging Trends in Thermal and Renewable Energy Systems	Lakireddy bali Reddy college of engineering Mylavaram, Krishna, Andhra Pradesh, India	One -week
22.	Fundamental of Fluid Power (MOOC COURSE)	University of Minnesota	Six -week
23.	Electric Vehicles and Mobility (MOOC COURSE)	École des Ponts ParisTech.	Six-week
24.	Global Conversations in Mechanical Engineering: Bridging Innovation and Sustainability	Madanapalle Institute of technology & science	One Week
25.	Green Manufacturing	SoMe, SMVDU, katra	One Week
26.	Material Characterization Techniques	NITTR Chandigarh	One Week
27.	Modeling and simulation of Renewable Energy Systems	SKIT, Jaipur	One Week
28.	IC Engine Testing and Simulation	SKIT, Jaipur	One Week
29.	Modeling of Electric Vehicle Motors	ISIEINDIA	Webinar
30.	Battery Management Systems and Electric batteries	ISIEINDIA	Webinar

Research Supervised:

S. No.	Year	Role	Research Topic
1.	2022	Supervisor, M-tech Dissertation	Performance analysis of journal bearing having worn surface operating with nano-additives in the lubricant
2.	2021	Supervisor, M-tech Dissertation	Performance analysis of journal bearing with surface waviness operating under misaligned condition
3.	2020	Supervisor, M-tech Dissertation	Lubrication characteristics of V-Shape dimple and protruded textured hydrodynamic bearing
4.	2019	Supervisor, M-tech Dissertation	Performance enhancement of hydrodynamic journal bearing by using chevron-shaped textures.
5.	2019	Supervisor, M-tech Dissertation	Investigating the effect of friction stir processing on mechanical properties of ZrO ₂ reinforced aluminium 5052
6.	2016	Supervisor, M-tech Dissertation	Investigation of thermal performance of solar air heater duct artificially roughened with combination of V shape and Transverse broken rib.
7.	2016	Supervisor, M-tech Dissertation	Thermal performance of U shape Roughened solar air heater
8.	2017	Supervisor, M-tech Dissertation	Heat transfer and friction factor correlation for inclined broken T-shaped artificial roughness used in solar air heater.
9.	2023	Supervisor, B-tech Project	Influence of variable frequency drive on the performance of induction motor in Electric Vehicle
10.	2023	Supervisor, B-tech Project	An analysis on Electric Vehicle component selection to reach its maximum Performance
11.	2023	Supervisor, B-tech Project	Development on the Project of Propulsion and Pintle Injector System of Rockets
12.	2022	Supervisor, B-tech Project	Testing / Inspection in Asia largest Cheenab Bridge Fabrication in Reasi
13.	2021	Supervisor, B-tech Project	CFD based performance analysis of textured journal bearings.
14.	2020	Supervisor, B-tech Project	Fabrication of girder of an electric overhead crane
15.	2020	Supervisor, B-tech Project	High temperature turning operations modelling and analysis
16.	2019	Supervisor, B-tech Project	Performance analysis of Peltier module based evaporative cooler with heating, ventilation and air conditioning system
17.	2019	Supervisor, B-tech Project	Fabrication of pin mill type slurry erosion test rig.

18.	2018	Supervisor, B-tech Project	Fabrication and testing of domestic refrigerator based on evaporative cooling
19.	2017	Supervisor, B-tech Project	Silica based dehumidifier
20.	2016	Supervisor, B-tech Project	Performance analysis of artificially roughened solar air heater
21.	2015	Supervisor, B-tech Project	Stability analysis of journal bearing
22.	2014	Supervisor, B-tech Project	Evaluation and comparison of engine performance using diesel and bio diesel blends as fuel
23.	2013	Supervisor, B-tech Project	Thermal performance enhancement of flat plate solar air heater using artificial surface roughness

Ph.D Guidance:

S. No.	Year	Role	Scholar Name	Status
1.	2022	Supervisor	Arun Bangotra	In Progress
2.	2021	Supervisor	Deepak Byotra	In Progress

Short Term Courses/Conference/Seminar/ Workshop Organized:

1. **Coordinator/Convener**, International Seminar on "" Green building: Sustainable Business for Cleaner and Greener Environment". Dec. 01, 2023.
2. **Coordinator/Convener**, International Webinar on "Electric Vehicle Dynamics and Design Calculations" Nov. 28, 2023.
3. **Coordinator/Convener**, Two days Offline Workshop on “Electric vehicles” May 25-26, 2023.
4. **Coordinator/Convener**, One day Online Workshop on “Introduction to MATLAB” January 20, 2022.
5. **Coordinator/Convener**, One day Online Webinar on “Numerical heat Transfer and Fluid Flow for Industrial Application” November 29, 2021.
6. **Coordinator/Convener**, One Week Online Short Term Course on “Introduction of CFD Problems on Fluid Flow and Heat Transfer” November 23–27, 2020.
7. **Organizing Secretary** “National Conference on Innovative Trends in Mechanical Engineering” (NCITME-2017), school of mechanical engineering, SMVDU, Katra.
8. **Organizing Secretary** “National Conference on Innovative Trends in Mechanical Engineering” (NCITME-2018), school of mechanical engineering, SMVDU, Katra.
9. **Member organizing Committee** “TEQIP-III sponsored FDC on Best manufacturing Practices in Industries” held in April,2018, SMVDU, Katra
10. **Member organizing Committee** “National Seminar on Research Opportunities and Challenges in Mechanical Engineering” held in April, 2017, SMVDU, Katra.

- 11. Member organizing Committee** “International conference on Mechanical engineering and Allied Sciences” held in September, 2018, SMVDU, Katra.
- 12. Member organizing Committee** “TEQIP-III sponsored national workshop on 3D Printing for New product Development” held in September, 2019, SMVDU, Katra.
- 13. Member organizing Committee** “The INDO-U.S. Science and Technology Forum sponsored workshop on Next generation logistics Supply chain” held in September, 2019, SMVDU, Katra.

Journals Reviewer:

1. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, Institution of Mechanical Engineers. (SAGE).
2. Journal of Fluids Engineering, (ASME).
3. Industrial Lubrication and Tribology, (Emerald).
4. Journal of Thermal Engineering, (Yildiz Technical University-Open Access Journals).
5. Acta Metallurgica Sinica. (Springer).
6. Tribology Transactions.(Taylor and Francis).
7. Environmental Science and Pollution Research.
8. Materials Today Proceedings (Elsevier).
9. Lubrication Science (Wiley).
10. Physic of Fluids (AIP Publishing, USA).
11. Physical Science International Journal (India).
12. International Journal of Aerospace Engineering (Wiley).

Administrative Contribution:

1. Member Secretary, Academic Affairs and School Research Committee, SoME, SMVDU.
2. Member School Research Committee, SoME, SMVDU.
3. Member School Library Committee, SoME, SMVDU.
4. Member School Purchase Committee, SoME, SMVDU.
5. Member Alumni Affaris Committee, SoME, SMVDU.
6. Member Academic Affairs Committee, SoME, SMVDU.
7. Member of School Technical Committee SoME, SMVDU.

Extension Work:

1. Warden of Vidyanchal Hostel from 2012-2014.
2. Member of Board of Alumni Association, Govt. Polytechnic College, Jammu
3. Warden of Kailash Hostel from September, 2023 to present.
4. Member of Flying Squads for carrying out surprise check during the conduct of examination in the SMVD University and Nursing college (SMVDCoN).