

MIR IRFAN UL HAQ

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Shri Mata Vaishno Devi University, Jammu and Kashmir, India-182320
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EDUCATION

Ph.D., Mechanical Engineering -2020
Shri Mata Vaishno Devi University, Katra, JK, India
Thesis: Evaluation of mechanical and tribological performance of novel aluminium 7075 alloy composites

M.Tech., Mechanical Engineering -2012
National Institute of Technology (NIT) Srinagar, Srinagar, JK, India
GPA: 9.133/10 (**Gold Medalist**)
Thesis: Numerical analysis of circular plates on elastic foundation for bridge bearing design

B.Tech., Mechanical Engineering -2010
Shri Mata Vaishno Devi University, Katra, JK, India
GPA: 8.1/10

PROFILE SUMMARY

Total years of experience	12+ years
Publications	58 (30 SCI indexed and 28 Scopus indexed)
Citations (Google Scholar)	3131
No of sponsored projects	6 (5 ongoing, 1 completed)
Research supervised	
<i>Ph.D.</i>	3 ongoing
<i>Masters</i>	13 (12 completed, 1 ongoing)
<i>UG level projects</i>	20+ completed
Book chapters	13

PROFESSIONAL APPOINTMENTS

Associate Professor - Nov 2024 – Present
School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra

Assistant Professor (Selection Grade) - May 2023 – Nov 2024
School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra

Assistant Professor (Senior Scale) - May 2018 – May 2023
School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra

Assistant Professor - May 2013 – May 2018
School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra

Deputy Manager (CAE) - August 2012 to May 2013
Mahindra Research Valley (R&D of Mahindra & Mahindra Ltd.), Chennai

ADMINISTRATIVE EXPERIENCE

Associate Dean, International and Alumni Affairs -November 2023 - present
Shri Mata Vaishno Devi University, Katra

HONORS, AWARDS, AND RECOGNITIONS

- Forbes Marshall Outstanding Project Award for 2024 (as supervisor)
- Listed twice as Top 2% Cited Scientist by Stanford University and Elsevier (**2023 and 2024**).
- Award of Excellence in Research 2022 (Vallway Research Publications)
- Best paper award at International Conference of Advanced Materials & Technologies for Industry 4.0 (ICAMT 4.0) organized by Bannari Amman Institute of Technology during 23-24, March 2023.
- Financial assistance granted under scheme for providing incentives for outstanding performance by SMVDU (2022)
- Recipient of International Travel Grant (worth **2,04,343 INR**) under Young Scientist Scheme by DST SERB to attend 2019 STLE Annual Meeting at USA.
- Best paper award for a co-authored paper at the 6th International Conference on Advances in Mechanical Engineering (ICAME 2019), Malaysia held during 14th to 16th August, 2019.
- Best paper award for a co-authored paper at NCAME 2019 held at NIT Delhi on 16 March, 2019.
- Financial assistance granted under scheme for providing incentives for outstanding performance by SMVDU (2019)
- Journal paper featured in the Society of Tribologists and Lubrication Engineers (STLE, USA) Magazine, Tribology & Lubrication Technology (TLT) in the "*Editors Selection: Best from STLE Community USA*" in July 2021 edition.
- Recipient of Institutional Gold Medal for academic excellence in Master's program at National Institute of Technology, Srinagar.

SPONSORED RESEARCH PROJECTS

- Principal Investigator, "Study of mechanical behaviour of bioinspired 3D printed functionally graded structures for lightweight applications", sponsored by J&K Science Technology & Innovation Council, Department of Science & Technology, Govt. of J&K (funding amount of **INR 7,00,000**) (*Ongoing*)
- Co- Investigator, "To study the synergism of grapheme and diamond nano particles in enhancing the Tribological performance of PAO oil for automotive application", sponsored by J&K Science Technology & Innovation Council, Department of Science & Technology, Govt. of J&K (funding amount of **INR 5,75,000**) (*Ongoing*)
- Co-Investigator, "Development of light weight material for snow clearance applications", sponsored by J&K Science Technology & Innovation Council, Department of Science & Technology, Govt. of J&K (funding amount of **INR 7,00,000**) (*Ongoing*)
- Co-investigator, "Design, development, theoretical and experimental study of smart tribological coatings for space applications", sponsored by Department of Science and

Technology (DST), Govt. Of India and Russian Science Foundation (funding amount of: **INR 51,70, 282**). (*Ongoing*)

- Co-Coordinator, Technology Innovation Hub at SMVDU (**Amount: INR 20, 00,000 per year for 5 years**) funded by JKHED, Govt. of J&K. (Institutional Project) (*Ongoing*)
- Co-investigator, “Development and tribological characterization of self-lubricating Aluminium alloy (AA6061)/nano-ceramic composite”, sponsored by AICTE through CRS-TEQIP-III scheme (funding amount: **INR 1,328,000**). (*Completed*)

PATENTS

- “3D printed bite blocker with detachable tongue retractor”, Application No: 202411058382 (*filed at Indian Patent Office, August 2024*)

JOURNAL PUBLICATIONS (SCI/ SCOPUS Indexed)

Published

- J58.** K Singh, **MIU Haq**, S Mohan, “Synergism of h-BN and La₂O₃ in improving the tribological performance of Al₂O₃ coatings” *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* (2024) {*SCI Indexed*} (*Accepted Article*)
- J57.** M D Stefano, K Singh, A Raina, S Mohan, **MIU Haq***, A Ruggiero, “Tribocorrosion of 3D printed dental implants: an overview” *Journal of Taibah University Medical Sciences*. {*SCOPUS Indexed*} {**Corresp. Author*}
- J56.** S Mohan, A Anand, A Raina, P Kumar, **MIU Haq***, M Graf, S Jayalakshmi, R A Singh “High temperature tribological response of Fe-2Cu-0.8C-CaF₂ self-lubricating composites at high speeds” *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* (2024) {*SCI Indexed*} {**Corresp. Author*}
- J55.** S A Farooq, S H Mukhtar, A Raina, **MIU Haq***, M I H Siddiqui, N Naveed, D Dobrota, “Effect of TiB₂ on the mechanical and tribological properties of marine grade Aluminum Alloy 5052: An experimental investigation” *Journal of Materials Research and Technology* (2024) {*SCI Indexed*} {**Corresp. Author*}
- J54.** K Singh, **MIU Haq**, S Mohan, “Tribological behavior of novel Al₂O₃-La₂O₃ HVOF composite coatings” *Tribology International* (2024) {*SCI Indexed*}
- J53.** M Javaid, A Haleem, R P Singh, S Rab, **MIU Haq**, and A Raina, “Internet of things in the global healthcare sector: significance, applications, and barriers.” *International Journal of Intelligent Networks* 3 (2022): 165-175. {*SCOPUS Indexed*}
- J52.** S A Farooq, A Raina, **MIU Haq***, A Rajabi, S Mohan, and A Anand, “Tribo-corrosion behaviour of composites and coatings: An overview of influencing factors, evaluation methods and inhibitors.” *Jurnal Tribologi* 35 (2022): 92-116. {*SCOPUS Indexed*} {**Corresp. Author*}
- J51.** P D Srivyas, M S Charoo, M F Wani, R Sehgal, A Raina, **MIU Haq**, C Shekhar, T Medhi, and S 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 and Properties*, 10(3), p.035043.10.1088/2051-672X/ac929a (2022) {SCI Indexed}
- J50.** I Chaturvedi, A Jandyal, I Wazir, A Raina, and **MIU Haq***, "Biomimetics and 3D printing-opportunities for design applications." *Sensors International* 3 (2022): 100191.<https://doi.org/10.1016/j.sintl.2022.100191> {SCOPUS Indexed}{*Corresp. Author}
- J49.** S A Farooq, A Raina, **MIU Haq***, and A Anand, "Corrosion Behaviour of Engineering Materials: A Review of Mitigation Methodologies for Different Environments." *Journal of The Institution of Engineers (India): Series D* (2022): 1-23.<https://doi.org/10.1007/s40033-022-00367-5>{SCOPUS Indexed}{*Corresp. Author}
- J48.** A Malik, S Rouf, **MIU Haq**, A Raina, A P V Puerta, B Sagbas, and A Ruggiero, "Tribocorrosive behavior of additive manufactured parts for orthopaedic applications." *Journal of Orthopaedics* (2022).<https://doi.org/10.1016/j.jor.2022.08.006>{SCOPUS Indexed}{*Corresp. Author}
- J47.** N S Jammoria, **MIU Haq**, and A Raina, "Evaluation and prediction of frictional behavior of AA 2024 based hybrid composites using ANN model." *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* (2022)<https://doi.org/10.1177/13506501221118464>{SCI Indexed}
- J46.** A Jandyal, I Chaturvedi, I Wazir, A Raina, and **MIU Haq**, "3D printing-A review of processes, materials and applications in industry 4.0." <https://doi.org/10.1016/j.susoc.2021.09.004>*Sustainable Operations and Computers* 3 (2022): 33-42.
- J45.** S Rouf, A Malik, A Raina, **MIU Haq***, N Naveed, A Zolfagharian, and M Bodaghi, "Functionally graded additive manufacturing for orthopedic applications." *Journal of Orthopaedics* 33 (2022): 70-80.<https://doi.org/10.1016/j.jor.2022.06.013>{SCOPUS Indexed}{*Corresp. Author}
- J44.** S Rouf, A Raina, **MIU Haq***, N Naveed, S Jeganmohan, A F Kichloo, "3D Printed Parts and Mechanical Properties: Influencing Parameters, Sustainability Aspects, Global Market Scenario, Challenges and Applications" *Advanced Industrial and Engineering Polymer Research* (2022) <https://doi.org/10.1016/j.aiepr.2022.02.001>{SCOPUS Indexed}{*Corresp. Author}
- J43.** S A Farooq, A Raina, S Mohan, R A Singh, S Jayalakshmi, **MIU Haq***, "Nanostructured coatings: review on processing techniques, corrosion behaviour and tribological performance" *Nanomaterials* (2022) <https://doi.org/10.3390/nano12081323>{SCI Indexed}{*Corresp. Author}
- J42.** P D Srivivas, M F Wani, R Sehgal, C S Singh Bisht, M S Charoo, A Raina, **MIU Haq**, "Synergetic Effect of Surface Texturing and Graphene Nanoplatelets on the Tribological Properties of Hybrid Self-Lubricating Composite" *Tribology International* (2022) <https://doi.org/10.1016/j.triboint.2022.107434>{SCI Indexed}

- J41.** S Rouf, A Malik, N Singh, A Raina, N Naveed, M I U H Siddiqui, and **MIU Haq**, "Additive manufacturing technologies: industrial and medical applications." *Sustainable Operations and Computers*. <https://doi.org/10.1016/j.susoc.2022.05.001> (2022).
- J40.** S Rouf, A Raina, **MIU Haq***, N Naveed, "Sensors and tribological systems: applications for industry 4.0" *Industrial Robot*(2021) <https://doi.org/10.1108/IR-10-2021-0225>{*SCI Indexed*}{*Corresp. Author}
- J39.** A Raina, **MIU Haq***, M Javaid, S Rab, A Haleem, "4D Printing - An Overview of Opportunities for Automotive Industry" *Journal of The Institution of Engineers (India): Series D* (2021) DOI: <https://doi.org/10.1007/s40033-021-00284-z> {*Corresp. Author}
- J38.** A Raina, **MIU Haq***, A Anand, J Sudanraj, "Lubrication characteristics of oils containing nano additives- influencing parameters, market scenario and advancements" *Journal of The Institution of Engineers (India): Series D* DOI: <https://link.springer.com/article/10.1007/s40033-021-00272-3>{*SCOPUS Indexed*}{*Corresp. Author}
- J37.** A Malik, **MIU Haq**, A Raina, and K Gupta, "3D printing towards implementing Industry 4.0: sustainability aspects, barriers and challenges" *Industrial Robot*(2021) <https://doi.org/10.1108/IR-10-2021-0247>{*SCI Indexed*}
- J36.** B Elhazmiri, N Naveed, M N Anwar, and **MIU Haq**, "The Role of Additive Manufacturing in Industry 4.0: An Exploration of Different Business Models." *Sustainable Operations and Computers* <https://doi.org/10.1016/j.susoc.2022.07.001>(2022).
- J35.** F K F Kunju, N Naveed, M N Anwar, **MIU Haq**, "Production and maintenance in industries: impact of industry 4.0" *Industrial Robot* (2021) <https://doi.org/10.1108/IR-09-2021-0211>{*SCI Indexed*}
- J34.** A F Kichloo, A Raina, **MIU Haq***, M S Wani, "Impact of carbon fiber reinforcement on mechanical and tribological behaviour of 3D printed PETG polymer composites- an experimental investigation" *Journal of Materials Engineering and Performance* (2021) <https://doi.org/10.1007/s11665-021-06262-6>{*SCI Indexed*}{*Corresp. Author}
- J33.** A Ashraf, W K Shafi, **MIU Haq**, A Raina, "Dispersion stability of nano additives in lubricating oils—an overview of mechanisms, theories and methodologies" *Tribology, Materials, Surfaces & Interfaces*(2021).<https://doi.org/10.1080/17515831.2021.1981720>{*SCOPUS Indexed*}
- J32.** A Raina, **MIU Haq**, A Anand, S Mohan, R Kumar, S Jayalakshmi, R A Singh, "Nanodiamond particles as secondary additive for polyalphaolefin oil lubrication of steel-aluminium contact" *Nanomaterials* <https://doi.org/10.3390/nano11061438>{*SCI Indexed*}
- J31.** G Gupta, **MIU Haq**, A Raina, K S Wani, "Rheological and tribological behavior of sunflower oil: effect of chemical modification and tungsten disulfide nanoparticles" *Journal of Bio- and Tribo-Corrosion* 7(4) (2021) <https://doi.org/10.1007/s40735-021-00593-6>{*SCOPUS Indexed*}
- J30.** G Gupta, **MIU Haq**, K S Wani, A Raina, "Effect of epoxidation and nanoparticle addition on the rheological and tribological properties of canola oil" *Journal of Engineering Tribology - Part J* <https://doi.org/10.1177/13506501211016181>{*SCI Indexed*}

- J29.** R Kumar, **MIU Haq**, S M Sharma, A Raina, A Anand, "Effect of water absorption on mechanical and tribological properties of Indian ramie/epoxy composites" *Journal of Engineering Tribology –Part J* <https://doi.org/10.1177/13506501211005635>{SCI Indexed}
- J28.** J Subramanian, A S Ramachandra, A Raina, **MIU Haq**, S M Sharma, X Chen, "Polymeric nanostructures for prospective tribological application in miniaturized devices: A Review" *Current Nanomaterials* [10.2174/2405461505999201208213019](https://doi.org/10.2174/2405461505999201208213019){SCOPUS Indexed}
- J27.** M Javaid, A Haleem, R P Singh, **MIU Haq**, A Raina, R Suman, "Industry 5.0: potential applications in COVID-19" *Journal of Industrial Integration and Management: Innovation and Entrepreneurship* <https://doi.org/10.1142/S2424862220500220>{SCOPUS Indexed}
- J26.** **MIU Haq**, S Khuroo, A Raina, S Khajuria, M Javaid, M F U Haq, A Haleem, "3D printing for development of medical equipment amidst Coronavirus (COVID-19) pandemic - Review and Advancements" *Research on Biomedical Engineering* (2020) <https://link.springer.com/10.1007/s42600-020-00098-0>{SCOPUS Indexed}
- J25.** **MIU Haq**, A Raina, S M Sharma, A Anand, M F B Abdollah, "Potential of AA7075 as a tribological material for industrial applications-a review" *Indian Journal of Pure & Applied Physics*, Vol. 59, March 2021. <http://nopr.niscair.res.in/bitstream/123456789/565...>{SCI Indexed}
- J24.** S Mohan , A Anand , **MIU Haq**, A Raina , R Kumar, M Kamal, "Development of a NIOSH based software tool for musculoskeletal disorders" *Indian Journal of Engineering & Materials Sciences* Vol. 27, August 2020, pp. 860-865 <http://nopr.niscair.res.in/handle/123456789/55683>{SCI Indexed}
- J23.** S Gupta, **MIU Haq**, S Mohan, A Anand, A Raina, V Dutta, K Vohra, R Kumar, "Evaluation of mechanical properties of ramie/banana reinforced hybrid composites" *Journal of Mechanical Engineering* <https://jmeche.uitm.edu.my/wp-content/uploads/2019/12/8%20ICAME%202019%20ID60.pdf>Vol SI 8(1), 95-104, 2019. {SCOPUS Indexed}
- J22.** AF Kichloo, R Aziz, **MIU Haq***, A Raina, "Mechanical & physical behaviour of 3D printed polymer nanocomposites - a review" *International Journal of Industrial and Systems Engineering*[10.1504/IJISE.2020.10028678](https://doi.org/10.1504/IJISE.2020.10028678) {SCOPUS Indexed} {*Corresp. Author}
- J21.** A Chadha, **MIU Haq***, A Raina, R Singh, P Narendra, M Bishnoi, "Effect of Fused Deposition Modelling Process Parameters on Mechanical Properties of 3D Printed Parts" *World Journal of Engineering*. Vol. 16 No. 4, pp. 550-559. <https://doi.org/10.1108/WJE-09-2018-0329>{SCOPUS Indexed}{*Corresp. Author}
- J20.** Z U Baba, W K Shafi, A Raina, **MIU Haq***, "Towards Sustainable Automobiles-Advancements and Challenges" *Progress in Industrial Ecology, An Int. Journal*[10.1504/PIE.2019.10023629](https://doi.org/10.1504/PIE.2019.10023629){SCOPUS Indexed}{*Corresp. Author}
- J19.** R Kumar, **MIU Haq**, A Raina & A Anand, "Industrial applications of natural fibre-reinforced polymer composites – challenges and opportunities" *International Journal of Sustainable Engineering* (2018) <https://doi.org/10.1080/19397038.2018.1538267> {SCOPUS Indexed}

- J18.** R Anand, A Raina, **MIU Haq***, M J Mir, O Gulzar, M F Wani, "Synergism of TiO₂ and Graphene as Nano-additives in Bio-Based Cutting Fluid-An Experimental Investigation" *Tribology Transactions* (2020) <https://doi.org/10.1080/10402004.2020.1842953>{SCI Indexed} {*Corresp. Author}
- J17.** **MIU Haq***, A Raina, A Anand, S M Sharma, R Kumar, "Elucidating the effect of MoS₂ on the Mechanical and Tribological Behaviour of AA7075/Si₃N₄ Composite" *Journal of Materials Engineering and Performance* (2020)<https://doi.org/10.1007/s11665-020-05197-8>{SCI Indexed} {*Corresp. Author}
- J16.** R Aziz, **MIU Haq**, A Raina, "Effect of surface texturing on friction behaviour of 3D printed polylactic acid (PLA)" *PolymerTesting*85, 106434 (2020)<https://doi.org/10.1016/j.polymertesting.2020.106434>{SCI Indexed}
- J15.** A Gupta, S Mohan, A Anand, **MIU Haq**, A Raina, R Kumar, R A Singh, S Jayalakshmi, M Kamal, "Tribological behaviour of Fe-C-Ni self-lubricating composites with WS₂ solid lubricant" *Materials Research Express* (2019)<https://doi.org/10.1088/2053-1591/ab52d2>{SCI Indexed}
- J14.** H Singh, **MIU Haq ***, A Raina, "Dry Sliding Friction and Wear Behaviour of AA6082- TiB₂ In Situ Composites" *Silicon* <https://doi.org/10.1007/s12633-019-00237-y>{SCI Indexed}{*Corresp. Author}
- J13.** L Kerni, A Raina, **MIU Haq**, "Friction and wear performance of olive oil containing nanoparticles in boundary and mixed lubrication regimes" *Wear* <https://doi.org/10.1016/j.wear.2019.01.022>{SCI Indexed}
- J12.** A Anand, **MIU Haq**, A Raina, K Vohra, A Asgar, N Jha, S Ojha, K Kumar, and Y Singh, "Tribological and mechanical aspects of zirconia-reinforced aluminum metal matrix composites." *Materials Focus* <https://doi.org/10.1166/mat.2016.1346> vol.5, no. 6 (2016): 489-495.
- J11.** **MIU Haq** and A Anand, "Dry Sliding Friction and Wear Behavior of AA7075-Si₃N₄Composite." *Silicon*(2018) <https://doi.org/10.1007/s12633-017-9675-1>{SCI Indexed}
- J10.** W K Shafi, A Raina, and **MIU Haq**, "Friction and wear characteristics of vegetable oils using nanoparticles for sustainable lubrication." *Tribology-Materials, Surfaces & Interfaces* <https://doi.org/10.1080/17515831.2018.1435343>(2018){SCOPUS Indexed}
- J9.** **MIU Haq *** and A Anand, "Friction and Wear Behavior of AA 7075-Si₃N₄ Composites Under Dry Conditions: Effect of Sliding Speed." *Silicon* (2018): 1-7.<https://doi.org/10.1007/s12633-018-9967-0>{*Corresp. Author} {SCI Indexed}
- J8.** K Vohra, A Anand, **MIU Haq**, A Raina, and M F Wani, "Tribological characterization of a self lubricating PTFE under lubricated conditions." *Materials Focus* <https://doi.org/10.1166/mat.2016.1324>(2016)
- J7.** W K Shafi, A Raina, **MIU Haq**, "Performance evaluation of Hazelnut oil with copper nanoparticles - A new entrant for sustainable lubrication" *Industrial Lubrication and Tribology*<https://doi.org/10.1108/ILT-07-2018-0257>{SCI Indexed}

- J6.** W K Shafi, A Raina, and **MIU Haq**, "Tribological performance of avocado oil containing copper nanoparticles in mixed and boundary lubrication regime." *Industrial Lubrication and Tribology* (2018).<https://doi.org/10.1108/ILT-06-2017-0166>{SCI Indexed}
- J5.** **MIU Haq*** and A Anand, "Dry sliding friction and wear behaviour of Hybrid AA7075/Si₃N₄/Gr self-lubricating composites." *Materials Research Express* (2018).<https://doi.org/10.1088/2053-1591/aacc50>{SCI Indexed}{*Corresp. Author}
- J4.** N Singh, **MIU Haq ***, A Raina, A Anand, V Kumar, and S M Sharma, "Synthesis and tribological investigation of Al-SiC based nano hybrid composite." *Alexandria Engineering Journal* (2018).<https://doi.org/10.1016/j.aej.2017.05.008>{SCI Indexed }{*Corresp. Author}
- J3.** A Raina, G A Harmain, and **MIU Haq**, "Numerical investigation of flow around a 3D bluff body using deflector plate." *International Journal of Mechanical Sciences*131 (2017): 701-711.<https://doi.org/10.1016/j.ijmecsci.2017.08.018>{SCI Indexed}
- J2.** K Vohra, A Anand, and **MIU Haq**, "Wear and friction behavior of self-lubricating polytetrafluoroethylene under dry conditions." *Materials Focus* (2015)<https://doi.org/10.1166/mat.2015.1278>
- J1.** A Anand, K Vohra, **MIU Haq**, A Raina, and M F Wani, "Tribological Considerations of Cutting Fluids in Machining Environment: A Review." *Tribology in Industry* 38, no. 4 (2016).<http://www.tribology.rs/journals/2016/2016-4/4.pdf>{SCOPUS Indexed}

CONFERENCES PAPERS

- CP12.** N S Jammoria, **MIU Haq**, and A Raina, "Carbon related materials for tribological application." *Proceedings of Fourth International Conference on Inventive Material Science Applications*, pp. 469-483. Springer, Singapore, 2022.https://doi.org/10.1007/978-981-16-4321-7_39
- CP11.** A Agrawal, S Bhawnani, A Sharma, A Raina, and **MIU Haq**, "Mechanical Behavior of 3D Printed Polymeric Materials: Impact of Process Parameters." In *Advances in Mechanical and Materials Technology*, pp. 673-681. Springer, Singapore, 2022.https://doi.org/10.1007/978-981-16-2794-1_59
- CP10.** **MIU Haq**, A Raina, K Vohra, R Kumar, and A Anand, "An Assessment of Tribological Characteristics of Different Materials under Sea Water Environment." *Materials Today: Proceedings* 5, no. 2 (2018): 3602-3609.<https://doi.org/10.1016/j.matpr.2017.11.610>
- CP9.** G Gupta, P Kumar, A Raina, and **MIU Haq**, "Effect of SiC reinforcement on mechanical behaviour of aluminium alloys–A review." In *AIP Conference Proceedings*, vol. 2006, no. 1, p. 030051. AIP Publishing (2018) .<https://doi.org/10.1063/1.5051307>
- CP8.** S Slathia, **MIU Haq*** and A Raina, "Fabrication and mechanical characterization of AA2024-ZrO₂-Gr hybrid composite." In *AIP Conference Proceedings*, vol. 2006, no. 1, p. 030047. AIP Publishing (2018) .<https://doi.org/10.1063/1.5051303>{*Corresp. Author}
- CP7.** S Slathia, R Anand, **MIU Haq***, A Raina, S Mohan, R Kumar, A Anand, "Friction and Wear Behaviour of AA2024/ZrO₂ Composites: Effect of Graphite" *Recent Advances in Mechanical Engineering* pp 597-601 (2020) https://link.springer.com/chapter/10.1007/978-981-15-1071-7_49 {*Corresp. Author}

- CP6.** S Mohan, A Anand, **MIU Haq**, A Raina, R Kumar, "Calcium Fluoride a Potential Solid Lubricant for Green Tribology and Sustainability" *Recent Advances in Mechanical Engineering* pp 587-595 (2020) https://link.springer.com/chapter/10.1007/978-981-15-1071-7_48
- CP5.** H Singh, A Raina, and **MIU Haq**, "Effect of TiB₂ on Mechanical and Tribological Properties of Aluminium Alloys–A Review." *Materials Today: Proceedings* 5, no. 9 (2018): 17982-17988.<https://doi.org/10.1016/j.matpr.2018.06.130>
- CP4.** L Kerni, A Raina, and **MIU Haq**, "Performance evaluation of aluminium alloys for piston and cylinder applications." *Materials Today: Proceedings* 5,no.9(2018):18170-18175. <https://doi.org/10.1016/j.matpr.2018.06.153>
- CP3.** **MIU Haq** and A Anand, "Microhardness studies on Stir Cast AA7075-Si₃N₄ Based Composites." *Materials Today: Proceedings* 5, no. 9 (2018): 19916-19922.<https://doi.org/10.1016/j.matpr.2018.06.357>
- CP2.** A Anand, **MIU Haq**, K Vohra, A Raina, and M F Wani, "Role of Green Tribology in Sustainability of Mechanical Systems: A State of the Art Survey." *Materials Today: Proceedings* 4, no. 2 (2017): 3659-3665.<https://doi.org/10.1016/j.matpr.2017.02.259>
- CP1.** A Anand, **MIU Haq**, A Raina, K Vohra, R Kumar, and S M Sharma, "Natural Systems and Tribology-Analogies and Lessons." *Materials Today: Proceedings* 4, no. 4 (2017): 5228-5232.<https://doi.org/10.1016/j.matpr.2017.05.031>

BOOK CHAPTERS

- B13.** A Hussain, M.S. Charoo, **MIU Haq**, "3D printed functionally graded materials: overcoming challenges and expanding applications" *Multi-Material Additive Manufacturing: Processing, Properties, And Applications*, Elsevier (2024) (Chapter in Press)
- B12.** A Zolfagharian, **MIU Haq**, M Nafea, M Bodaghi, "4D Printing of Smart Magnetic-Based Robotic Materials" *3D Printing and Sustainable Product Development*, CRC Press (2023)
- B11.** A R Bhat, V Gupta, N K Bankapalli, P Saxena, A Raina, **MIU Haq**, "3D Printing and New Product Development: Opportunities and Challenges" *3D Printing and Sustainable Product Development*, CRC Press (2023)
- B10.** A Malik, N S Jammoria, R Bhat, P Saxena, **MIU Haq**, A Raina, "Nanocomposites and tribology Overview, sustainability aspects, and challenges" *Nanomaterials for Sustainable Tribology*, CRC Press (2023)
- B9.** N S Jammoria, **MIU Haq**, R P Singh, and A Raina, "Soft Computing Techniques and Aluminum Metal Matrix Composites." *Optimization of Industrial Systems* (2022): 367-390.<https://doi.org/10.1002/9781119755074.ch29>
- B8.** B Kumar, A Raina, R P Singh, and **MIU Haq**, "Mechanical Properties for 3D Printing of Polymers through Fused Deposition Modelling." *Optimization of Industrial Systems* (2022): 335-351.<https://doi.org/10.1002/9781119755074.ch27>
- B7.** R Anand, A Raina, **MIU Haq**, MFB Abdollah, "Minimum Quantity Lubrication for Sustainable Manufacturing" *Tribology and Sustainability* (2021), T& F CRC Press.
- B6.** R Kumar, **MIU Haq**, A Raina, S M Sharma, A Anand, MFB Abdollah, "Tribological Behaviour of Natural Fibre Based Polymer Composites" *Tribology of Polymer and Polymer*

Composites for Industry 4.0 Springer, Singapore https://doi.org/10.1007/978-981-16-3903-6_4 (2021)

- B5.** A Raina, **MIU Haq**, S Mohan, A Anand, M Graf, “Materials for Tribological Applications: An Overview” *Tribology and Sustainability* (2021), T& F CRC Press.
- B4.** **MIU Haq**, A Raina, M J Ghazali, M Javaid, A Haleem , “Potential of 3D Printing Technologies in Developing Applications of Polymeric Nanocomposites” *Tribology of Polymer and Polymer Composites for Industry 4.0* Springer, Singapore https://doi.org/10.1007/978-981-16-3903-6_10
- B3.** M K Soni, O Gulzar, **MIU Haq**, MF Wani, “Metal Matrix Nanocomposites: Physical, Mechanical and Tribological Properties” *Tribology and Sustainability* (2021), T& F CRC Press.
- B2.** **MIU Haq**, S Mohan, A Raina, S Jayalakshmi, R A Singh, X Chen, S Konovalov, M Gupta, “Mechanical and Tribological Properties of Aluminum Based Metal Matrix Nanocomposites” *Reference Module in Materials Science and Materials Engineering* (2021) <https://doi.org/10.1016/B978-0-12-819724-0.00048-3>
- B1.** R Anand, **MIU Haq***, A Raina, “Bio-Based Nano-Lubricants for Sustainable Manufacturing” *Nanomaterials and Environmental Biotechnology, Nanotechnology in the Life Sciences*. Springer.https://link.springer.com/chapter/10.1007/978-3-030-34544-0_18{*Corresp. Author}

CONFERENCES ATTENDED

- CF20.** Participated and showcased “Design of 3D Printed Exoskeleton for Bone Fracture” at 9th National Conference & Exhibition on Emerging and Innovative Trends In Engineering Technology at GCET Jammu & Indian Institute of Technology, Kharagpur during 22nd Feb 2024 to 23rd Feb 2024.
- CF19.** Contributed a paper “Comparative Analysis of Tribological and Mechanical Properties of Nylon-6 and Nylon GF-30 Glass Fiber Reinforced in FDP 3D printing” at National Conference on Mechanical & Production Engineering (NCMPE-23 held on 5th August 2023.
- CF18.** Contributed a paper entitled during 2nd International Conference on Mathematical, Engineering and Management Sciences (ICMEMS-2023) Malaviya National Institute of Technology Jaipur on 22nd May 2023
- CF17.** Contributed a paper entitled during ICAMT-4.0 by Bannari Amman Institute of Technology at Bannari Amman Institute of Technology on 23rd March 2023.
- CF16.** Contributed a paper entitled during First International Interdisciplinary Conference on Energy, Nanotechnology and Internet of Things (ENT 2023) National Institute of Technology Puducherry on February 2-4, 2023,
- CF15.** Contributed a paper entitled, “3D Printed PETG Composites: Effect of Carbon Reinforcement on Tribological and Mechanical Behaviour” International Conference on Advances in Civil, Chemical and Mechanical Engineering organized by DAV University, Jalandhar on 6th May, 2022
- CF14.** Contributed a paper entitled, “Mechanical and Tribological Behaviour of 3D Printed Polymers” at webinar on material Processing on 26th Nov, 2021

- CF13.** Contributed a paper at Malaysia Singapore Research Symposium (MS 2019) held at *National University of Singapore* on 5th November, 2019.
- CF12.** Contributed a paper entitled, "Effect of MoS₂ on the Tribological Performance of AA7075/Si₃N₄ Composite" 2019 STLE Annual Meeting, Nashville, Tennessee, USA held during 19th May, 2019 to 24th May, 2019.
- CF11.** Contributed a paper entitled, "Aluminium Metal Matrix Composites for Aerospace and Automotive Applications-Challenges and Opportunities" at 2nd National Conference on Innovative Trends in Mechanical Engineering (NCITME-2018) on 23rd March 2018
- CF10.** Contributed a paper entitled "Lightweight Material for Automobile Body and Chassis-A Review" in ITMAEP-2014 on 20th and 21st December at JNU New Delhi, 2014
- CF9.** Contributed a paper entitled "Geometry optimization of Automobile Chassis -A review" in ITMAEP-2014 on 20th and 21st December, 2014 at JNU New Delhi.
- CF8.** Contributed a paper entitled, "High Speed Tribological Characterization of AA7075-Si₃N₄ Composite Under Dry Conditions" International Conference on Emerging Trends in Engineering Innovations & Technology Management at NIT Hamirpur during 16th -18th December, 2017.
- CF7.** Contributed a paper entitled, "Aluminium Alloys in Sliding Applications-opportunities and Challenges" in 4th International Conference on Recent Trends and Advancements in Engineering and Technology held during 3rd to 4th November, 2017 at SMVDU.
- CF6.** Contributed a paper entitled, "Recent advancements in Tribology: A Review", International Conference on Renewable Energy for Sustainable Environment Challenges and Remedies (ICRESE-2017) Shri Mata Vaishno Devi University Katra, India, March, 20-21, 2017
- CF5.** Contributed a paper entitled, "Plant Products Towards Sustainable Automobiles-Challenges and Opportunities" In National Conference on Interdisciplinary Aspects of Plant Sciences and 27th APSI Scientist Meet held during 2nd to 4th November, 2017 at Shri Mata Vaishno Devi University, Katra, J&K.
- CF4.** Contributed a paper entitled "Role of Tribolayers in Friction and Wear Of Aluminium Alloys" in National Conference on Renewable Energy and Sustainable Environment: Challenges and Remedies held during 24th to 25th April 2018 at SMVDU.
- CF3.** Contributed a paper entitled "An Overview of the Virtual Tests in Modern Auto Industry for Mitigation of Failures on an Automotive Chassis", 9th J&K Science Congress and Regional Science Congress, University of Kashmir, Hazratbal, Srinagar, October, 2013.
- CF2.** Contributed a paper entitled "An Assessment of Biomimetic approaches in Tribology" 11th JK Science Congress, October 12-14, 2015, University of Kashmir.
- CF1.** Contributed a paper entitled "Environmentally Conscious Technologies in Automobiles- A State of the Art Survey " 11th JK Science Congress, October 12-14, 2015 University of Kashmir.

INVITED TALKS / LECTURES DELIVERED

- T21.** Talk on “*Additive Manufacture: Applications and Sustainability Aspects*” Faculty Development Programme on Green Manufacturing organized by UGC-MMTC, SMVDU 4th March to 8th March 2024
- T20.** Talk on “*Fundamentals of 3D Printing and New Product Development*” Skill Development Programme/Short Term Course organized by Technology Innovation Hub, SMVDU, Katra during 5th Feb to 09th Feb, 2024
- T19.** Talk on “*Introduction to Material Science for Designers*” during National Workshop on Material Science on 14th Nov 2023 at JMI New Delhi
- T18.** Talk on “*New Product development and Additive Manufacturing*” during webinar by American Society of Mechanical Engineers (ASME India Section) on 22nd November 2023.
- T17.** Talk on “*Digital Transformation Through 3D Printing*” during ATAL FDP on Digital Transformation in supply chain operations held on 25th February 2024 at Deenbandhu Chhotu Ram University of Science and Technology, Sonapat Haryana
- T16.** Talk on “*Solid Lubrication in Light Weight Materials*” during workshop on Smart Materials: Current Scenario and Future Prospects on 7th June, 2023 at SMVD University.
- T15.** Talk on “*Introduction to product development for Entrepreneurs*” during International Webinar organized by DIGISAKHSHAM (An initiative by SEMS Welfare Foundation).
- T14.** Talk on “*Tribology of nanofluids for automotive applications*” during webinar organized by Society of Automotive Engineers, Bengaluru section, India on 27th May 2023.
- T13.** Talk on “*3D Printed Parts for Automotive Applications: Mechanical and Tribological Aspects*” at SENG Seminar Series at University of Sunderland, UK on 25th January 2023.
- T12.** Talk on “*Additive Manufacturing*” during Recent Trends in Mechanical Engineering GCET Safapora, Ganderbal on 16th June 2022.
- T11.** Talk on “*3D Printed Parts and Tribology: Automotive Applications and Sustainability*” during webinar organized by Society of Automotive Engineers, Bengaluru section, India on 23th April 2022.
- T10.** Talk on “*Mechanical Aspects of Additive Manufactured Parts*” during FDP on 3D Printing and Additive Manufacturing organized by Musaliar College of Engineering and Technology, Kerala in association with Indian Society for Technical Education (ISTE), Kerala on 21st April 2022
- T9.** Talk on “*3D Printing: Applications in New Product Development*” during One Week Faculty Development program on “*3D Printing in Product Design*” organized by Department of Design, Delhi Technological University, New Delhi during 5th to 9th July, 2021. (Invited)
- T8.** Talk on “*3D Printing for Designers*” during ISTE-AICTE sponsored online Induction/refresher program on “*Sustainable Product Design and Manufacturing*” organized by School of Mechanical Engineering, SMVDU during 21st to 27th May, 2021.
- T7.** Talk on “*3D Printing for Designers and Entrepreneurs*” during AICTE ATAL sponsored Online Faculty Development Program hosted by University Institute of Engineering & Technology Maharshi Dayanand University, Rohtak on 25th November, 2020.

- T6.** Talk on “*Tribology of Light Weight and 3D Printed Parts*” during 5 day Webinar Series on “*Researches in Surface Engineering for Reliable Tribology*” hosted by GIMT Guwahati in association with Assam Science and Technology University on 4th September,2020.
- T5.** Talk on “*Tribology of Aluminium Composites*” during International Short Term Course on “*Tribology and Sustainability*” hosted by SRM Institute of Science and Technology, Chennai on 28th August, 2020
- T4.** Talk on “*3D Printing and Entrepreneurship*” during workshop on “*3D Printing for Entrepreneurs*” organized by SMVDU Technology Business Incubation Centre (Supported by NSTEDB Division, Department of Science & Technology) on 3rd July,2020.
- T3.** Talk on “*Recent Trends in Automobiles*” during Two Weeks Winter School for Engineering Stream organized by FDC SMVDU.
- T2.** Talk on “*3D Printing*” at Govt. Polytechnique College, Ramban on 4th May,2019.
- T1.** Talk on “*FDM based 3D Printed Parts-Different Applications*” at AICTE Training and Learning Academy Program on Additive Manufacturing (AM) Applications at JMI, New Delhi on 7th November, 2019 (*Invited*)

RESEARCH SUPERVISION

Ph.D.

3. A F Kichloo “*Mechanical behavior of 3D Printed Functionally Graded Structures*”
2. S A Hussain “*Tribological Behavior of 3D Printed Polymeric Materials*”
1. K Singh “*Tribological and Corrosion Behaviour of Al₂O₃ Based coatings*”

Master's Thesis

- M12.** Sanchay Abrol and Neha Sharma “*Impact of 3D printing process parameters on impact strength of PLA*” (**M.Sc. 2023**)
- M11.** Rishav Dev Singh “*Mechanical and Tribological Behaviour of 3D Printed Nylon and Glass Fiber Reinforced Nylon- An Experimental Investigation*” (**M.Tech 2023**)
- M10.** Jaspreet Singh “*Effect of annealing and process parameters on tribological and mechanical properties of 3D printed polymers*” (**M.Tech 2022**)
- M9.** SaquibRaof “*Compression and bending behaviour of functionally graded additively manufactured nature inspired lattices*” (**M.Tech 2022**)
- M8.** Brajesh Sharma “*Friction Behaviour of 3D Printed PLA Parts- Effect of Surface Texturing*” (**M.Tech. 2021**)
- M7.** Amir Farooq “*Synthesis and Characterization of AA 5052/TiB₂ Composites for Marine Applications*” (**M.Tech. 2020**)
- M6.** Gaurav Jamwal “*Lubrication Characteristics of Chemically Modified Canola and Sunflower Oil*” (**M.Tech. 2019**)
- M5.** Rahul Anand “*Synergism of TiO₂ and Graphene as Nano-additives in Cutting Fluids*” (**M.Tech. 2019**)

- M4.** Ayesha Farzana Kichloo, "*Mechanical & Tribological Behaviour of 3D Printed Carbon Fibre Reinforced Polyethylene Terephthalate Glycol Composite*" (**M.Tech. 2019**)
- M3.** Harpal Singh, "*Synthesis and Mechanical Characterization of AA6082-TiB₂ in Situ Composites*" (**M.Tech. 2018**)
- M2.** Samridh Slathia, "*Investigation of Mechanical and Tribological properties of AA2024 based Hybrid Composites*" (**M.Tech. 2017**)
- M1.** Navdeep Singh, "*Investigation of Mechanical and Tribological properties of Al-SiC Based Nano Hybrid Composite*" (**M.Tech. 2016**)

EDITORIAL WORK

- Member Advisory Board, Heliyon, Cell Press, Elsevier
- Guest Editor in Special issue on "*Sustainability Aspects of Additive Manufacturing Technologies*" in Sustainable Operations and Computers (Elsevier)
<https://www.keaipublishing.com/en/journals/sustainable-operations-and-computers/call-for-papers/sustainability-aspects-of-additive-manufacturing-technologies/>
- Guest Editor in Special Issue "*Surface Behaviour and Properties of Additive Manufactured Parts*" in Frontiers in Manufacturing Technology.
<https://www.frontiersin.org/research-topics/46201/surface-behaviour-and-properties-of-additive-manufactured-parts>
- Guest editorial: Tribology for sustainability & reliability", *Industrial Lubrication and Tribology*, Vol. 74 No. 8, pp. 913-913. <https://doi.org/10.1108/ILT-10-2022-548>
- Guest editorial", *Industrial Lubrication and Tribology*, Vol. 73 No. 9, p.1131
<https://doi.org/10.1108/ilt-11-2021-0450>
- Journal Editor Research & Development in Material Science
- Member Editorial Board, Archives of Advanced Engineering Science
- Journal Review Editor for Frontiers in Mechanical Engineering for tribology section
- Journal Review Editor for Frontiers in Manufacturing Technology
- Book of Abstracts International Conference on Mechanical Engineering and Allied Science-2018 (ISBN 9789386240330)
- Book of Abstracts of International Tribology Symposium International Tribology Research Symposium on the theme "Impact of Tribology on Society" -2020 (ISBN 9789386240859)
- Book of Abstracts: 2nd Virtual International Tribology Research Symposium (2021) (ISBN978-93-93937-18-6)

MEMBER REVIEWER BOARD

- Journal of Tribology ASME
- Scientific Reports (Nature)
- Lubrication Science (John Wiley)
- Alexandria Journal (Elsevier)
- Jurnal Tribologi (Journal of Malaysian Tribology Society)
- Journal of Materials Engineering and Performance (Springer)
- Surface Topography: Metrology and Properties
- Tribology in Industry

- Industrial Lubrication and Tribology
- Journal of Materials Engineering and Performance (Springer)
- Australian Journal of Mechanical Engineering
- World Journal of Engineering (Emerald)
- Silicon (Springer)
- Energy Sources, Part A: Recov. Utilization, and Environ. Effect (Taylor & Francis)
- Environment Development and Sustainability (Springer)
- Cogent Engineering (Taylor & Francis)
- Materials Research Express
- Emerging Materials (Springer)
- Multidiscipline Modelling in Materials and Structures(Emerald)
- Journal of Dispersion Science and Technology (Taylor & Francis)
- Scientia Iranica
- Materials
- Lubricants

BOOKS PUBLISHED/EDITED

- B3.** *“3D Printing and Sustainable Product Development”* 1st Edition (2023) CRC Press (T&F Group) ISBN 9781003306238
<https://www.taylorfrancis.com/books/edit/10.1201/9781003306238/3d-printing-sustainable-product-development-mir-irfan-ul-haq-ankush-raina-nida-naveed>
- B2.** *“Nanomaterials for Sustainable Tribology”* 1st Edition (2023) CRC Press (T&F Group) ISBN 9781032306902
<https://www.taylorfrancis.com/books/edit/10.1201/9781003306276/nanomaterials-sustainable-tribology-ankush-raina-mir-irfan-ul-haq-patricia-iglesias-victoria-sudan-raj-jegan-mohan-ankush-anand>
- B1.** *“Tribology and Sustainability”*-1st Edition (2021) CRC Press (T&F Group) ISBN 9780367551469
<https://www.taylorfrancis.com/books/edit/10.1201/9781003092162/tribology-sustainability-jitendra-kumar-katiyar-mir-irfan-ul-haq-ankush-raina-arvind-singh-jayalakshmi>

FACULTY DEVELOPMENT PROGRAMS/WORKSHOPS/ SHORT TERM COURESES/ CERTIFICATIONS

28. Completed *“Two Week Industrial Training Program”* at JSW Steel Coated Products Limited, IGC Lassipora Pulwama J&K, from 1st-14th July 2024.
27. Three Week Industrial Training on *“Mechanical Engineering Systems of Gulmarg Gondola Project”* at Jammu and Kashmir Cable Car Corporation Ltd. from 21st June 2021 to 9th July 2021.
26. One Week Online Short Term Course on *“Reliability, Maintainability and Quality Issues in Process Industries”* organized at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, India from 04- 08 August, 2020.
25. One Week TEQIP III sponsored STC on *“Engineering Optimization”* at SMVDU from 21th to 25th October 2019 in collaboration with JNTU, Hyderabad.

24. One Week QIP Course on “*Fundamentals of Tribology*” organized by IISC Bangalore during 7th to 11th October, 2019
23. One Week International Indo-Tunisian Symposium on “*Tribology for Sustainability*” organized by National Institute of technology, Srinagar in collaboration with University De Sfax, Tunisia during 17th to 21st June, 2019.
22. One Week Workshop on “*Professional Ethics and Human Values- A Gandhian Perspective*” at Faculty Development Centre, SMVDU Approved under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching Scheme of Government of India, Ministry of Human Resource Development from 11th to 15th March, 2019.
21. Two Day DST SERB and TEQIP-III Sponsored National Workshop on “*Advances in Clean Energy Conversion Technologies and Materials for Energy Storage Applications*” at SMVDU from 24th to 25th January 2019 in collaboration with JNTU, Hyderabad.
20. One Week TEQIP-III Sponsored Faculty Development Program on “*Best Manufacturing Practices in Industry*” organized School of Mechanical Engineering, SMVDU, Katra from December 17-21, 2018 in collaboration with JNTU, Hyderabad.
19. One-Day Workshop on “*Communication Skills Required for Teaching*” at Faculty Development Centre, SMVDU Approved under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching Scheme of Government of India, Ministry of Human Resource Development on 15th December 2018.
18. Two Week Faculty Development Program on “*Foundation program in ICT for Education*” conducted by IIT Mumbai during 8th March 2018 to 12th April 2018.
17. One Week Faculty Development Program on “*Sustainable Design and Manufacturing*” organized by School of Mechanical Engineering, SMVDU, Katra from February 12-16, 2018.
16. Attended One-day workshop on “*Patent Drafting and Filing*”, organized by Department of Biotechnology, SMVDU, Katra in collaboration with Technology Information, Forecasting and Assessment Council (TIFAC), (DST), Govt. of India on 20th October, 2016
15. One Day National Seminar on “*Mechanical Engineering Research Opportunities and Challenges*”, organized by School of Mechanical Engineering, SMVDU, Katra on April, 8, 2017.
14. One Week QIP Short-course on “*Tribology of Soft Matters: Biotribology, Microsystems and Automotive Applications*” organized by Department of Mechanical Engineering and Industrial Tribology, Machine Dynamics and Maintenance Engineering Centre (ITMMEC), IIT Delhi, New Delhi, India from November 7-11, 2016.
13. One Week Workshop on “*Optimization using MATLAB*” organized by Department of Mechanical Engineering, SMVDU, Katra in collaboration with NITTTR Chandigarh, Punjab from October 24 - 28, 2016.
12. Workshop on “*Research Methodology and Data Analysis*” at Human Resource Development Centre (HRDC), SMVDU, Katra (J&K) from September, 26-28, 2016.
11. One Month “*30th General Orientation Course*” at Human Resource Development Centre (HRDC), Punjabi University Patiala, Punjab from June 20 - July 16, 2016.

10. One Week 5th ICT based workshop on “Recent Trends in Automobile Engineering” organized by Department of Mechanical Engineering, SMVDU, Katra in collaboration with NITTTR Chandigarh, Punjab from February 29 to March 4, 2016.
9. One week AICTE Sponsored Short Term Course on “Additive Manufacturing” held at IIT Kanpur during February 05 – February 09, 2018.
8. Two Week 66th Refresher Course on “Experimental Physics” by Indian Academy of Science, Bangalore and Indian National Science Academy, New Delhi held at School of Physics, SMVDU during 10th to 15th December, 2014.
7. Two Week Workshop on “Engineering Mechanics” conducted by IIT Mumbai during 26th Nov,2013 to 6th Dec,2013.
6. Four Week MOOC certification on “Mechanics of Materials I: Fundamentals of Stress & Strain and Axial Loading” hosted by Georgia Institute of Technology, USA
5. Four Week MOOC certification on “Material Science: 10 Things Every Engineer Should Know” hosted by University of California, Davis
4. Four Week MOOC certification on “Material Behavior” hosted by Georgia Institute of Technology, USA
3. Four Week MOOC certification on “Mechanics of Materials II: Thin-Walled Pressure Vessels and Torsion” hosted by Georgia Institute of Technology, USA
2. Four-week MOOC Certification on “The 3D Printing Revolution” hosted by University of Illinois at Urbana-Champaign
1. Four-week MOOC Certification on “3D printing Applications” hosted by University of Illinois at Urbana-Champaign

EVENTS ORGANIZED

1. Co-Coordinator, Workshop on “3D Printing for Entrepreneurs” held on 1st March, 2024.
2. Convener, “National Workshop on Curriculum planning and Course Design” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, on February 21, 2024.
3. Co-coordinator, One week Skill Development Programme/Short Term Course on “Fundamentals of 3D Printing and New Product Development” 5th Feb to 09th Feb, 2024.
4. Member Organizing Committee, 12th Chapter Convention on Quality Concepts- 2023” on Theme "Nurture Quality Concepts For A Better Future" August 21, 2023.
5. Coordinator, “National Seminar on Engineering in Medicine” held on November 22, 2023.
6. Coordinator, Workshop on “International Scientific Cooperation” held on 28th March 2024
7. Member Organizing Committee, “Hands on Workshop on Aero modelling” held on 2nd December 2023
8. Organizing Secretary, “20th Foundation Day” of SMVDU held on 19th August 2023.
9. Co-coordinator, “National Level Open Day Function” held on 3rd February 2024
10. Coordinator, “National Workshop on Product Design and Development” held on 31st August 2023.
11. Convention Coordinator, “12th Chapter Convention on Quality Concepts (CCQC)” of J&K, HP, Punjab Region on 21st August 202 at Shri Mata Vaishno Devi University (SMVDU)
12. Co-Coordinator and Faculty mentor in “5 day-Hands on Workshop on Industrial Automation” organized during 24th to 28th December,2022

13. Co-Coordinator in “1st Indo-Russian International Symposium/ FDP on Design Development, Theoretical and Experimental Study of Smart Tribological Materials and Coatings for Space Applications” in collaboration with NIT Srinagar, IIT Jammu and Russian Academy of Sciences during 3rd to 7th October,2023.
14. Convener in “3 Day International Tribology Research Symposium” organized jointly by Shri Mata Vaishno Devi University, CAS-AK Technical University, Lucknow and SRM University Chennai during 5th to 7th November,2020.
15. Co-Convener in TEQIP-III sponsored “International Conference on Mechanical Engineering and Allied Sciences, 2018 (ICMEAS-2018)” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, 14th to 15th September,2018
16. Organizing Member, “2nd International Conference on Recent Trends & Advancements in Engineering and Technology”, held at Shri Mata Vaishno Devi University, Katra, India during 27th - 29th November,2015.
17. Organizing Secretary in “National Conference in Innovative Trends in Mechanical Engineering” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, March 3-4, 2017.
18. Organizing Secretary in “2nd National Conference in Innovative Trends in Mechanical Engineering” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, March 23-24, 2018.
19. Organizing Member, “5th International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET)” at Shri Mata Vaishno Devi University, Katra, J&K from 25-26 October 2018”
20. Coordinator in week long online Short Term Course on “Tribology for Sustainable Development” hosted by School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra during 20th to 24th July,2020.
21. Coordinator in TEQIP-III Sponsored Workshop on “3D Printing for New Product Development” organized School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra on 13th September,2019.
22. Co- Coordinator, TEQIP-III sponsored 3rd Industry Academia Conclave on “Bridging Gap between Industry and Academia” held on 8th January, 2019 at Shri Mata Vaishno Devi University, Katra.
23. Member, Organizing Committee, TEQIP-III Sponsored Faculty Development Program on “Best Manufacturing Practices in Industry” organized School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra from December 17-21, 2018 in collaboration with JNTU, Hyderabad.
24. Member, Organizing Committee, TEQIP-III Sponsored STC on “Engineering Optimization” organized School of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra from October 21-25, 2019 in collaboration with JNTU, Hyderabad.
25. Organizing Member, “Indo US one-week Workshop on Next Generation Logistics, Logistic Models and Supply Chain” held during 5th -9th August, 2019 at SMVDU in collaboration with Indo-US Science & Technology Forum (IUSSTF)
26. Member, Organizing Committee, “National Seminar on Research Opportunities and Challenges in Mechanical Engineering” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, April 8, 2017.
27. Member, Organizing Committee, “2nd Industry Academia Conclave” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India on 28th April, 2018.

28. Member Organizing Committee, TEQIP-III Sponsored Faculty Development Program on *"Sustainable Design and Manufacturing"* held at Department of Mechanical Engineering during 12th to 16th Feb, 2018.
29. Co-Convener in *"6th Alumni Meet"* of SMVDU held on 21st October, 2019.
30. Coordinated *"SAE BAJA 2014"* wherein ATV was designed and fabricated in house and students participated in the event at Indore.
31. Coordinated *"Titiksha 2k13"* Technical Festival of SMVDU
32. Coordinated *"National Engineer's Day"* at School of Mechanical Engineering in 2013
33. Faculty Coordinator *Titiksha 2014*
34. Faculty Coordinator *"SAE BAJA 2015"* wherein an ATV was designed and fabricated at SMVDU Workshop.
35. Faculty Coordinator *"TEDx SMVDU"* at SMVDU (2016)
36. Faculty Coordinator *"Ecoart-2017"* wherein an eco-friendly vehicle was designed and fabricated at SMVDU Workshop.
37. Faculty Coordinator, *"Titiksha 2016"* held during 18th to 20th November, 2016
38. Member Organizing Committee, *"2nd Inter-State (North Zone) Declamation Contest"* for Silver Rolling Trophy instituted by Hon'ble Governor of Jammu & Kashmir State on 30th November 2016.

OTHER EXTENSION ACTIVITIES

1. Appointed as external examiner for B.Tech. and M.Tech. at University of Jammu (2024)
2. Appointed external examiner for YCET Jammu
3. Appointed external examiner for JMI New Delhi
4. Appointed as external examiner for B.Tech. and M.Tech. at University of Kashmir (2022, 2023)
5. Reviewer Board for AICTE Technical Book Project, New Delhi
6. Member reviewer board for Qatar University Project Grants (2022-2024)
7. Appointed as Member Expert Speaker Panel Society of Automotive Engineers India.
8. Appointed as External Examiner for B.Tech. at BGSB University (2018)
9. Member selection committee for appointment of various posts (CEO, Manager & Secretary) of SMVDU TBIC.
10. Appointed as micro observer in Jammu and Kashmir assembly elections (2014) and parliamentary elections (2023).
11. Juror during *"10th Chapter Convention on Quality Concepts"* on 26th August 2022 at Shri Mata Vaishno Devi University (SMVDU), Katra, Jammu and Kashmir.
12. Session Chair in the *"International Conference and Exhibition for Science (ICES2023)"* at King Saud University Saudi Arabia during 6th Feb 2023 to 08th Feb 2023.
13. Session Chair in *"6th International Conference on Recent Trends and Advancements in Engineering and Technology"* from 17th -18th January 2020.
14. Session Chair in *"1st International Conference on Advancement in Engineering Sciences (AES2019)"* 28th to 29th September 2019
15. Session Chair in *"2nd National Conference in Innovative Trends in Mechanical Engineering"* held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, March 23-24, 2018.
16. Session Chair in *"5th International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET)"* at Shri Mata Vaishno Devi University, Katra, J&K from 25th -26th October 2018"

17. Session Chair in “*National Conference in Innovative Trends in Mechanical Engineering*” held at the Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, March 3-4, 2017.
18. Member Reviewer Board “*7th International and 28th All India Manufacturing Technology, Design and Research Conference 2018 (AIMTDR 2018)*” to be held during 13th to 15th December, 2018 at Anna University, Chennai.
19. Involved in Evaluation Process of B.Tech. Mechanical Engineering Jammu University
20. Member Secretary, Shri Mata Vaishno Devi University Alumni Association (2017-2020)
21. Contributed a newspaper article entitled “*Design for Pedestrians*” in daily Greater Kashmir in Jammu Edition

INSTITUTIONAL DEVELOPMENT ROLES

- Member, Design Your Degree Program at SMVDU
- Member Admission Committee B.Tech./B.Arch. (2022, 2023, 2024)
- Member, Convocation Committee (5th, 6th, 7th, 8th, 9th)
- Member, Institutional Innovation Council (2023 onwards)
- Member, Short listing Committee Assistant Professor(Civil and Electrical)
- Member, B. Des Committee for preparing DPR (2023)
- Member, Short listing Committee Assistant Professor(Mechanical and Electronics) (2024)
- Member Anti Ragging Committee
- M.Tech. Project Coordinator
- Time Table Coordinator
- Member Secretary, Academic Affairs Committee, School of Mechanical Engineering
- Member Secretary, SMVD Alumni Association
- Member Inspection Committee Guest House (2014)
- Member Guest House Committee (Purchase) (2013-2014)
- Member Admission Brochure Committee SMVDU
- Member School Information Committee
- Member School Finance Affairs Committee
- Member School M.Tech. Admission Committee
- Member School Technical Committee
- Member Nanotechnology Cell, SMVDU
- Member School Technical Committee, SoME, SMVDU
- Member School Event Committee, SoME, SMVDU
- Member Board of Studies, SME
- Member, School Research Committee
- Member Secretary, Physical Stock Verification committee
- Member Secretary, Food Inspection Committee

MENTORSHIP OF STUDENT CLUBS

- Faculty Coordinator, SAE Student Club, SMVDU
- Faculty Coordinator, AET Student Club, SMVDU
- Faculty Coordinator, 3D Printing Club, SMVDU

FOREIGN ACADEMIC VISITS

- United States of America (2019)
- Singapore (2019)

MEMBERSHIP OF PROFESSIONAL BODIES

- Life Member Tribology Society of India
- Life Member Indian Society of Technical Education
- Member, Society of Automotive Engineers, India