

Dr. Puneet Katyal

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Personal

Date of Birth : June 06, 1979
Marital Status : Married
Present Employer : Guru Jambheshwar University of Science & Technology, Hisar
Designation : Associate Professor (Mechanical Engineering Department)

Educational Qualifications:

- Doctor of Philosophy (Ph.D.) in Mechanical Engineering (Tribology), NIT Kurukshetra, India, July 2016.
- Master of Engineering (M.E.) in Mechanical Engineering, Thapar University Patiala, June 2004.
- Bachelor of Technology (B.Tech.) in Mechanical Engineering, Kurukshetra University Kurukshetra, India, 2002.

Academic Experience:

- Associate Professor, Mechanical Engineering Department, Guru Jambheshwar University of Science & Technology, Hisar, **from Aug 30, 2019 to till date.**
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- Assistant Professor, Mechanical Engineering Department, Guru Jambheshwar University of Science & Technology, Hisar, **from Aug 30, 2006 to Aug 30, 2019.**
- Lecturer, Mechanical Engineering Department, Ambala College of Engg. , Ambala, **from July 20, 2005 to Aug 29, 2006**
- Lecturer, Mechanical Engineering Department, Seth Jai Parkash Mukand Lal Institute of Technology, Radaur (Yamunanagar), **from Deember15, 2004 to July 20, 2005**

Doctoral Theses under Supervision:

- “Improving the Functionality of Ti-6Al-7Nb for Orthopedic Implant Applications through EDM/WEDM Processing “by Vijender Singh is in progress.
- “Surface characterization and degradation study of biodegradable Magnesium alloys under conventional and non-conventional machining processes” by Rajender Kumar is in progress.
- “Mechanical and biodegradable behaviour analysis of coated and PM-WEDMed biodegradable magnesium alloys for orthopedic and vascular implants” by Sunil Kumar is in progress.

Research Projects:

- Minor Research Project titled “Experimental analysis of viscosity of nanoparticles for heat transfer applications”, funded by University in Oct 2017 of Rs. 1,00000, Duration: 6 months.

- Minor Research Project titled “In Vitro biocompatibility and biodegradable materials used for orthopedic implantations”, funded by University in Oct 2019 of Rs. 55,0000, Duration: 6 months.

Other Academic Responsibility:

- Reviewer of Journal of Rheology
- Reviewer of Tribology International (Elsevier)
- Member of UG B.O.S. (Under Graduate Board of Studies) of Mechanical Engineering Department, Guru Jambheshwar University of Science & Technology, Hisar
- Department, Examination Incharge, Guru Jambheshwar University of Science & Technology, Hisar
- Life Member of Institution of Engineers (IEI)

Master Thesis supervised

Sr. No.	Name of Student	Thesis Title
1.	Rakesh Phandeen	Test Bed for Stoichiometric Optimization of Exhaust Manifold Parameters Using MATLAB
2.	Pankaj Chabra	Concurrent Design and Prototyping of Composite Accelerator Pedal
3.	Ravinder Kataria	Thermal Analysis of Drilling Tool
4.	Ashok Rai	Evaluation of Milling Parameters on Fiberglass by Taguchi Method
5.	Anoop Singh	Computer Aided Design & Analysis Of Composite Gear Box Material
6.	Kulwant Singh	A CAD Paradigm for Designing Saharanpur Style of Motifs
7.	Vikas Jangra	Integrated Design and Manufacturing of Traditional Handcrafted 'Jalis
8.	Pardeep Mourya	Optimization of milling parameters on fiberglass to Reduce the surface Roughness
9.	Preeti Sharma	Design and Analysis of Composite Material Leaf Spring
10.	Ashmin	Process Parameters Optimization in Single Point Incremental Forming
11.	Sumit	A paradigm to produce customized medical prosthesis product using incremental sheet forming
12.	Vijender	Optimization of Parameters in Trim Cutting Operation in WEDM of Tungsten Carbide Composite
13.	Amit Verma	Design and Analysis of Composite Steering Mechanism
14.	Pardeep	Design and analysis of Disc brake rotor with Aluminum MMC
15.	Pardeep	The study of weight percentage of SiC on coefficient of friction and wear behavior of Al (6351)-SiC metal matrix composite

16.	Rupesh	Optimization of process parameters for incremental sheet forming of Al-2014 material
17.	Amit Nain	Experimental investigation of manufacturing parameters affecting forming force in Incremental sheet forming
18.	Nitin Kapoor	Designing & analysis of composite differential gear box
19.	Nitin Verma	Optimization of process parameters for heat resistant titanium grade-6 on wire edm
20.	Sushil Kumar	A CAD paradigm for design and manufacturing of artistic sculptured surfaces
21.	Kuldeep Chani	Development of Aluminum based bearing alloys material
22.	Naveen Lohan	Design and analysis of connecting rod using composite material
23.	Rohit Bamal	Exploration of Composite material Chassis Frame: Design and analysis
24.	Balram Jakhar	Investigating the Process Parameters for their optimization on Nickel Alloy using Wire cut EDM
25.	Rakesh Dhankar	Optimization of Process Parameter in WEDM for Inconel 625 Using Taguchi and Grey Relational Analysis
26.	Ghanshyam	Flow structure and heat transfer characteristic in a channel pass of an obstacle
27.	Jasbir Singh	An experimental Investigation of water desalination using solar still coupled with evacuated tube collector
28.	Sunil	Experimental Investigation of Indirect Solar cooker using evacuated tube collector with dual thermal storage unit
29.	Raman	Optimization of process parameters of Aluminum alloy 6061 by using WEDM
30.	Jasbir Singh	An experimental investigation of water desalination using solar still coupled with evacuated tube collector
31.	Tanuj Vashisth	An experimental investigation of water desalination using solar still coupled with evacuated tube collector and external reflector
32.	Sugandha	Elastohydrodynamic lubrication analysis of artificial knee joint using a point contact model
33.	Raman Sharma	Optimization of process parameters of aluminum alloy 6061 using WEDM
34.	Meenu Sharma	Experimental investigation on viscosity of CuO/water Nanofluid
35.	Kuldeep	Experimental investigation of the effect of CuO nano-particles on the thermal performance of heat pipe

Research Publications (Inter-National and National):

Journals

1. **Katyal Puneet** and Gulati Vishal, 2010, "Computer Aided Stress Analysis and Optimization of Rolling Mill Housing", *Computer Aided Design & Applications (Taylor & Francis)*, Vol. 7, No. 6, pp. 787-795.
2. Jaswinder Saini, **Katyal Puneet**, April 2010, Failure mode of steel tension members due to change in connection eccentricity and connection length, *Journal of The Institution of Engineers (India): Civil Division*, Volume 91, pp 8–14.
3. Gulati Vishal and **Katyal Puneet**, 2010, "Parameterized Modeling of Star Patterns for Traditional Latticed Screens", *International Journal of Computer Applications*, Vol. 11, No. 1, pp. 28-36.
4. Yadav Rajesh, Gulati Vishal and **Katyal Puneet**, 2011, "Investigations of Gas Turbine Characteristics by Varying Tip Clearance and Axial Gap", *International Journal of Engineering Research and Applications*, Vol. 1, Issue 3, pp. 1058-1064.
5. Chabra Pankaj, **Katyal Puneet** and Gulati Vishal, 2011 "Concurrent Design and Prototyping of Composite Accelerator Pedal", *International Journal of Advancements in Technology*, Vol. 2, No. 4, pp. 561-576.
6. Gulati Vishal and **Katyal Puneet**, 2012, "A Hierarchic Representation Scheme for Generating Decorative Patterns", *International Journal of Current Research*, Vol. 4, Issue 1, pp.111-114.
7. Gulati Vishal and **Katyal Puneet**, 2012, "Modeling of Blow-moulds for Decorative PET Bottles", *International Journal of Emerging Trends in Engineering and Development*, Vol. 1, Issue 2, pp. 157-163.
8. Phandeen Rakesh, **Katyal Puneet** and Gulati Vishal, 2012, "A Model-Based System for Automotive Emission Control", *International Journal of Emerging Trends in Engineering and Development*, Vol. 1, Issue 2, pp. 29-42.
9. Kataria Ravinder, **Katyal Puneet**, Gulati Vishal and Kumar Arun, 2012, "Thermal Analysis of Drilling Tool", *International Journal of Emerging Trends in Engineering and Development*, Vol. 1, Issue 2, pp. 230-238.
10. Gulati Vishal and Kulwant Singh and **Katyal Puneet**, 2012, "A CAD Paradigm for Generating Woodworking Motifs," *International Journal of Computer Applications*, Vol. 47, No. 5, pp. 38-40.
11. Katyal Puneet, Kumar Punit, 2012, Central film thickness formula for shear thinning lubricants in EHL rolling/sliding point contacts, ***Tribology International (Elsevier)***, Volume 48, pp. 113-121.
12. Ashok Rai, Pradeep Mouria, Vishal Gulati, **Puneet Katyal**, 2013, Evaluation of Milling Parameters on Fiberglass to Reduce the Surface Roughness, *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 2, Issue 2, pp 435-441.
13. Pardeep, **Katyal Puneet**, Gulati Vishal, 2013, Effect of Weight Percentage of Sic on Coefficient of Friction And Wear Behaviour of Al (6351)-Sic Metal Matrix Composite, *International Journal of Research In Aeronautical And Mechanical Engineering*, Vol. 1, Issue 6, pp 23-41.
14. Katyal Puneet, Kumar Punit, 2014, New central film thickness equation for shear thinning lubricants in EHL rolling/sliding point contact conditions, ***Journal of Tribology (ASME)***, Volume 136, pp. 041504-512.
15. **Katyal Puneet**, Kumar Punit, 2014, On the role of second Newtonian viscosity in EHL point contacts using double Newtonian shear-thinning model, ***Tribology International (Elsevier)***, Volume 71, pp. 140-148.
16. Vishal Gulati, Sumit kathuria, **Puneet Katyal**, 2015, "A Paradigm to Produce Customized Medical

- Ankle Support using Incremental Sheet Forming”, Journal of Engineering and Technology, Vol. 5, Issue 1, pp 14-18.
17. Jakhar Balram, **Katyal Puneet**, Vishal Gulati, 2015, Investigating the process parameters for optimization on Inconel 600 using Wire-cut EDM” International Journal of Advance and Innovation Vol. 3 Issue 3, pp 508-513.
 18. **Munish Gupta**, Sunil Kumar and Puneet Katyal, 2015, Experimental Investigation of Indirect Solar Cooker using Evacuated Tube Collector with Dual Thermal Storage Unit, International Journal of Thermal Technologies, Vol.5, No.3 .
 19. **Munish Gupta**, Jasbir Singh and Puneet Katyal, 2015, Solar Still Coupled with Evacuated Tube Collector with and without Porous Absorber: An Experimental Study, International Journal of Thermal Technologies, Vol.5, No.4. pp-324-330.
 20. Jakhar Balram, **Katyal Puneet**, Vishal Gulati, 2015, Investigating the process parameters for optimization on Inconel 600 using Wire-cut EDM” International Journal of Advance and Innovation Vol. 3 Issue 3, pp 508-513.
 21. Vishal Gulati, Ashmin aryal, **Katyal Puneet**, Goswami Amitesh, April 2016, Process Parameters Optimization in Single Point Incremental Forming, Journal of The Institution of Engineers (India): Series C, , Volume 97, Issue 2, pp 185–193.
 22. Jakhar Balram, **Katyal Puneet**, Vishal Gulati, 2015, Investigating the process parameters for optimization on Inconel 600 using Wire-cut EDM” International Journal of Advance and Innovation Vol. 3 Issue 3, pp 508-513.
 23. **Katyal Puneet**, 2016 , On the role of surface roughness in ankle joint replacements, Research & Reviews: Journal of Physics, Volume 5(3), pp. 48-55.
 24. Munish Gupta and **Puneet Katyal**, 2016, Experimental study on performance of single basin solar still with external reflector and evacuated tube collector, International Journal of Advanced Technology in Engineering and Science, Vol. 4, Issue 11.
 25. Munish Gupta and **Puneet Katyal**, 2017, A Study of Double Basin Solar Still: A Review, International Journal for Scientific Research & Development, Vol. 4, Issue 12.
 26. Sugandha, **Puneet Katyal**, Munish Gupta, 2017, Analysis of various human synovial joint replacements: A review, I International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE), Vol. 2, Issue 7.
 27. **Katyal Puneet**, Kumar Punit, 2017, A simplified approach for thermal elasto-hydrodynamic lubrication analysis of circular contact using realistic lubricant properties, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, vol. 4, Issue 12.
 28. Vinay, Munish Gupta and **Puneet Katyal**, 2018, Synthesis and structural characterization of Al₂O₃ nanofluids, Materials today: Proceedings (Elsevier), Volume 5, Issue 14, Part 2
 29. Raman, **Puneet Katyal** and Munish Gupta 2018, A Research on optimization of process parameters of aluminum alloy 6061 by using WEDM, International Journal for Research in applied science & engineering technology, Volume 6, Issue 2.
 30. Munish Gupta and **Puneet Katyal**, 2018, Experimental Investigation on Viscosity of CuO/Water Nanofluid, International Journal for Research in Engineering Application & Management (IJREAM), Vol-04, Issue-09
 31. Munish Gupta and **Puneet Katyal**, 2018, A review on viscosity of nano-fluids, International Journal of management, Technology and Engineering, vol-08, issue-09

32. Munish Gupta and **Puneet Katyal**, 2018, Experimental investigation of the effect of CuO nanoparticles on the thermal performance of heat pipe, International Journal for Research in Engineering Application & Management, (IJREAM),Vol-04,Issue-09.
33. Kamal Kumar, Vijender Singh and **Puneet Katyal**, 2019, EDM μ -Drilling in Ti-6Al-7Nb:Experimental Investigation and Optimization using NSGA-II, The international journal of advanced manufacturing technology, <https://doi.org/10.1007/s00170-019-04012-6>
34. **Katyal Puneet**, Kumar Punit, 2019, Effect of Arbitrary Entrainment Angle in EHL Elliptical and Circular Contacts, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, DOI:10.1177/1350650119863998
35. Rajender Singh, **Puneet Katyal**,2019, Comparative study of different welding processes and optimization methods : A Review, International Journal for Research in Engineering Application & Management (IJREAM), Vol-05,Issue-02, 2019.
36. Meel, R., Singh, V., Katyal, P., & Gupta, M. (2021), Optimization of process parameters of micro-EDD/EDM for magnesium alloy using Taguchi based GRA and TOPSIS method, Materials Today: Proceedings. (*Scopus Indexed*)
37. Kumar S., Katyal, P., (2021), Factors affecting biocompatibility and biodegradation of magnesium based alloys, Materials Today: Proceedings. (*Scopus Indexed*)
38. R Kumar, P Katyal, K Kumar, N Sharma (2021), Investigating Machining Characteristics and Degradation Rate of Biodegradable ZM21 Magnesium alloy in End Milling Process, International Journal of Lightweight Materials and Manufacture (*Scopus Indexed*)
39. Kumar S., Katyal, P., (2021), Assessment of factors influencing bio-corrosion of magnesium based alloy implants: A review, Materials Today: Proceedings. (*Scopus Indexed*)
40. R Kumar, P Katyal, K Kumar, V Singh (2021), Multi response optimization of end milling process parameters on ZE41A Mg alloy using Taguchi and TOPSIS approach, Materials Today: Proceedings. (*Scopus Indexed*)
41. R Kumar, N Arora, M Gupta, P Katyal (2021), An experimental approach on characterization techniques of zinc oxide nanoparticles, Materials Today: Proceedings. (*Scopus Indexed*)
42. V Singh, P Katyal, K Kumar, R Kumar (2021), Surface integrity and biological response of Ti-alloy implants under surface modification techniques, Materials Today: Proceedings. (*Scopus Indexed*)
43. R Kumar, P Katyal (2021), Effects of alloying elements on performance of biodegradable magnesium alloy, Materials Today: Proceedings. (*Scopus Indexed*)
44. V Singh, K Kumar, P Katyal (2021), Experimental Investigation on Surface Integrity and Wear Behavior of Ti-6Al-7Nb Alloy under Rough and Trim Cut Modes of Wire Electrical Discharge Machining, Journal of Materials Engineering and Performance, 30 (1), 66-76, (*Scopus Indexed*)

Conferences

1. Phandeen Rakesh, Katyal **Puneet** and Gulati Vishal, 2011, "A Model-Based System for Automotive Emission Control", National Conference on Multi disciplinary Approach in Frontier Areas of Environmental Science and Engineering, March 4-5, 2011, GJUST, Hisar, Abstract on page 2000.
2. Vishal Gulati, Ashok Rai and **Puneet Katyal**, 2012, "Optimization of Cutting Parameters in Milling of Fiberglass for Reducing Delamination Damage", International Conference on Innovations in Design and Manufacturing, PDPM-IIITDM Jabalpur, December 5-7, 2012
3. Sumit, Vishal Gulati, **Puneet Katyal**, 2013, "A Review: Prototyping of Customized Medical Prosthesis Products" International Conference on Evolution in Science and Technology and Eyne on Educational Methodologies (ESTEEM-2013), 03-04 March, 2013, PPIMT, Hisar, 2013.
4. Ashmin, Vishal Gulati, **Puneet Katyal**, 2013, "A Review: Effect of Process Parameters on Formability in Asymmetric Single Point Incremental Sheet Forming" International Conference on Evolution in Science and Technology and Eyne on Educational Methodologies (ESTEEM-2013), 03-04 March, 2013, PPIMT, Hisar.
5. Nitin Kapoor, Vishal Gulati, **Puneet Katyal**, 2013, "A Review: Designing and Analysis of Composite Differential Gear Box" International Conference on Evolution in Science and Technology and Eyne on Educational Methodologies (ESTEEM-2013), 03-04 March, 2013, PPIMT, Hisar.
6. Vikash Jangra, Vishal Gulati, **Puneet Katyal**, 2013, "A CAD Based Approach for Generating Motifs of Traditional Jali" International Conference on Evolution in Science and Technology and Eyne on Educational Methodologies (ESTEEM-2013), 03-04 March, 2013, PPIMT, Hisar.
7. Amit Nain, Vishal Gulati, **Puneet Katyal**, 2014, "A review on experimental Investigation on process parameters affecting forming force in incremental Sheet Forming" International Conference on Computer Applications in Manufacturing, 21-22 Feb. 2014, UIT, Hansi, Hisar.
8. Vishal Gulati, **Puneet Katyal**, 2014, "A review on computer aided manufacturing parameters affecting surface roughness and thickness reduction in incremental sheet formin" International Conference on Computer Applications in Manufacturing, 21-22 Feb. 2014, UIT, Hansi, Hisar.
9. Puneet Katyal, 2015, A note on Design and Analysis to Explore Composite Material Chassis Frame, ISTE, Delhi and UPTU, Lucknow, held on 21st and 22nd March 2015, Organized by Mechanical Engg. Department, NIET, Greater Noida
10. Sugandha, Puneet Katyal and Munish Gupta, 2017, Elastohydrodynamic lubrication analysis of ultra-high molecular weight polyethylene knee joint replacements, Proceedings of 2nd International conference on research & innovations in mechanical engineering (ICRIME-2017), GNDEC, Ludhiana
11. Vijender Singh, Puneet Katyal, 2019, Optimization of parameters in trim cutting operation in WEDM of tungsten carbide composite, 4th National Conference on Trends and Advances in Mechanical Engineering, (TAME-2019), YMCA, Faridabad

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