

Curriculum Vitae

Dr. Manjesh Kumar Singh

Associate Professor

Mechanical Engineering Department,

Indian Institute of Technology Kanpur

Kanpur: 208016

Uttar Pradesh, India.

Email: manjesh@iitk.ac.in

Phone: +91-512-2592108

Academic Qualification

	Degree	Year	Subject	Institution	% of Marks
1.	Bachelor of Engineering	2009	Mechanical Engineering	IEST Shibpur	82.1%
2.	Master of Engineering	2011	Materials Engineering	IISc. Bangalore	6.6 out of 8
3.	Doctor of Philosophy	2016	Materials	ETH Zurich, Switzerland	NA

Work Experience

S.No.	Positions held	Name of the Institute	From	To
1.	Associate Professor	Indian Institute of Technology Kanpur	01/2023	-
2.	Assistant Professor	Indian Institute of Technology Kanpur	09/2019	12/2022
3.	Postdoctoral Researcher	Max Planck Institute for Polymer Research Mainz (Germany)	08/2016	09/2019
4.	Postdoctoral Researcher	ETH Zurich (Switzerland)	02/2016	07/2016
5.	Research Assistant	ETH Zurich (Switzerland)	09/2011	01/2012

Professional Recognition/ Award/ Prize/ Certificate/ Fellowship

S.No.	Name of Award	Awarding Agency	Year
1.	GATE Scholarship	MHRD, Govt. of India	2009-2011
2.	Scholarship covering registration, accommodation and travel assistance to attend INF Conference 2011	International Nanotribology Forum	2011
3.	Scholarship covering registration, accommodation and travel assistance to attend Gordon Research Conference	Gordon Research Conference: Tribology	2012
4.	Scholarship covering registration, accommodation and travel assistance to attend INF Conference 2014	International Nanotribology Forum	2014
5.	Best Oral Presentation (academia) at IndiaTrib-2019	Tribology Society of India	2019
6.	Scholarship covering registration, accommodation and travel assistance to attend INF Conference 2019	International Nanotribology Forum	2019
7.	Invitation to submit article under Soft Matter Emerging Investigator Series	Soft Matter, Royal Society of Chemistry	2022
8.	Young Tribologist Award	TSI, India and TKTRF, Japan	2022
9.	Dr. Mahua Menon and Mr. Ranodeb Roy Young Faculty Research Fellowship	IIT Kanpur	2024-2027

Membership

- Life member of Tribology Society of India (TSI). Membership number: LM#5596.
- Life member of Indian Society for Applied Mechanics (ISAM). LM#0229

Publications

- J1. *Microstructure and enhanced high-temperature wear properties of TiC reinforced Co-Cr-W metal matrix composite (MMC) coatings fabricated by laser cladding*; V. Tiwari, A. Kumar, M. Sarkar, J. Ramkumar, M. Gupta, K. Mondal, K. Mondal, J. Jain, **Manjesh K. Singh**, S. S. Singh, *Journal of Alloys and Compounds*, **2025**, 1040, 183565.
- J2. *Nano-silica based aqueous colloidal gels as eco-friendly thixotropic lubricant*; Arun Kumar, Vivek Kumar, Yogesh M. Joshi, **Manjesh K. Singh**; *Journal of Colloid and Interface Science*; **2025**; 700(3), 138486.
- J3. *Controlling adhesion of PDMS elastomer through process parameters*; **Susheel Kumar**, Krishnacharya Khare, Manjesh K. Singh; *Tribology International*, **2025**, 209, 110724.
- J4. *Adhesion study at the interface of a PDMS-elastomer and borosilicate glass-slide: effect of modulus and thickness of the elastomer*; Susheel Kumar, Chiranjit Majhi, Krishnacharya Khare, **Manjesh K. Singh**; *Soft Matter*, **2025**, 21, 2493-2501.
- J5. *Enhanced mechanical properties and microstructure of TiC reinforced Stellite 6 metal matrix composites (MMCs) via laser cladding additive manufacturing*; V. Tiwari, V. Mandal, M. Sarkar, A. Kumar, J. Bhagyaraj, **Manjesh K. Singh**, S. Mukherjee, K. Mondal, J. Ramkumar, J. Jain, E.-Wen Huang, S.S. Singh; *Journal of Alloys and Compounds*, **2025**, 178001.
- J6. *Role of Al₂O₃ reinforcements in ceramic-based nanocomposites for sealant applications: Time-dependent modeling of creep and stress relaxation*; Qurat Ul Ain, M. F. Wani, Rakesh Sehgal, **Manjesh K. Singh**; *Ceramic International*, **2024**, 50, 33817-33838.
- J7. *A comparative tribological study on as-cast and heat-treated Inconel-718 superalloy at elevated temperature*; Dhananjay Dubey, Arun Kumar, Rajdip Mukherjee, **Manjesh K. Singh**; *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, **2024** 238(10):1247-1261.
- J8. *Tribological and mechanical characterisation of carbon-nanostructures based PEEK nanocomposites under extreme conditions for advanced bearings: A molecular dynamics study*; Qurat Ul Ain, M. F. Wani, Rakesh Sehgal, **Manjesh K. Singh**; *Tribology International*, **2024**, 109702.
- J9. *Mechanical and viscoelastic characterization of Al₂O₃ based polymer nanocomposites: An experimental and molecular dynamics simulation approach*; Qurat Ul Ain, M. F. Wani, Rakesh Sehgal, **Manjesh K. Singh**; *Computational Materials Science*, **2024**, 239, 112955.
- J10. *Insights into nanomechanical and nanotribological characterization of cross-linked polymer nanocomposites via molecular dynamics simulation*; Qurat Ul Ain, M. F. Wani, Rakesh Sehgal, **Manjesh K. Singh**; *Tribology International*, **2024**, 109702.
- J11. Arun Kumar, Harsh Rachwani, **Manjesh K. Singh**; Dry sliding wear behavior of hard-chrome and zinc-phosphate conversion coatings on steel substrates. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, **2024**; 238(6):662-675.
- J12. *A review on tribological behavior of nickel-based Inconel superalloy*; Dhananjay Dubey, Rajdip Mukherjee, **Manjesh K. Singh**; *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*. **2024**; 238(6):706-732.
- J13. *Tribological and Rheological Study of Thixotropic Gels of 2D Nanoparticles*; Arun Kumar, Vivek Kumar, Yogesh M. Joshi, **Manjesh K. Singh**; *Langmuir*; **2024**; 40(14), 7310–7327.
- J14. *Thermal conductivity of bottle-brush polymers*; Maurya, Manoj Kumar; Laschuetza, Tobias; **Manjesh K. Singh**; Mukherji, Debashish; *Langmuir*; **2024**; 40(8), 4392–4400.
- J15. *Computational indentation in weakly cross-linked polymer networks*; Manoj K. Maurya, **Manjesh K. Singh**; *International Journal of Advances in Applied Mathematics and Engineering Science*; **2023**, 15, 196–206.
- J16. *Free Standing Dry and Stable Nanoporous Polymer Films Made through Mechanical Deformation*, HsiaoPing Hsu, **Manjesh K. Singh**, Yu Cang, Heloise Thérien-Aubin, Markus Mezger, Rüdiger Berger, Ingo Lieberwirth, George Fytas, Kurt Kremer; *Advanced Science* **2023**, 2207472.

- J17. *Thermal Conductivity of Semicrystalline Polymer Networks: Crystallinity or Cross-linking?*; Manoj K. Maurya, James Wu, **Manjesh K. Singh**, Debashish Mukherji; ACS Macro Letters, **2022**, 11(7); 925-929.
- J18. *Computational indentation in highly cross-linked polymer networks*; Manoj K. Maurya, Céline Ruscher, Debashish Mukherji, **Manjesh K. Singh**; Physical Review E; **2022**, 106(1), 014501.
- J19. *An overview of polymer nanocomposites: Understanding of mechanical and tribological behaviour*; Qurat Ul Ain, Rakesh Sehgal, M. F. Wani, **Manjesh K. Singh**; IOP Conference Series: Materials Science and Engineering, **2021**, 1189(1); 012010.
- J20. *Polymer cyclization for the emergence of hierarchical nanostructures*; Chaojian Chen, **Manjesh Kumar Singh**, Katrin Wunderlich, Sean Harvey, Colette J Whitfield, Zhixuan Zhou, Manfred Wagner, Katharina Landfester, Ingo Lieberwirth, George Fytas, Kurt Kremer, Debashish Mukherji, David YW Ng, Tanja Weil; Nature Communications, **2021**, 12(1), 1-7.
- J21. *Tuning thermal transport in highly cross-linked polymers by bond-induced void engineering*; Debashish Mukherji, **Manjesh K. Singh**; Physical Review Materials, **2021**; 5(2), 025602.
- J22. *Glass Transition Temperature of Disentangled Polymer Melts: Single-chain-nanoparticles approach*; **Manjesh K. Singh**, Minghan Hu, Yu Cang, Hsiao-Ping Hsu, Heloise Therien-Aubin, Kaloian Koynov, George Fytas, Katharina Landfester and Kurt Kremer; Macromolecules **2020**, 53 (17), 7312-7321.
- J23. *To Precipitate or to Mix: Why do Elastin-like Polypeptides have Different Solvation Behaviors in Water-ethanol and -urea Mixtures?*; Yani Zhao, **Manjesh K. Singh**, Kurt Kremer, Debashish Mukherji and Robinson Cortes-Huerto; Macromolecules **2020**, 53 (6), 2101-2110.
- J24. *Combined Experimental and Simulation Studies of Cross-Linked Polymer Brushes under Shear*; **Manjesh K. Singh**, Chengjun Kang, Patrick Ilg, Rowena Crockett, Martin Kröger and Nicholas D. Spencer; Macromolecules **2018**, 51 (24), 10174-10183.
- J25. *Effect of Crosslinking on the Microtribological Behavior of Model Polymer Brushes*; **Manjesh K. Singh**, Patrick Ilg, Rosa M. Espinosa-Marzal, Martin Kröger and Nicholas D. Spencer; Tribol. Lett. **2016**, 63, 17.
- J26. *Influence of Chain Stiffness, Grafting Density and Normal Load on the Tribological and Structural Behavior of Polymer Brushes: A Nonequilibrium-Molecular-Dynamics Study*; **Manjesh K. Singh**, Patrick Ilg, Rosa M. Espinosa-Marzal, Nicholas D. Spencer and Martin Kröger; Polymers **2016**, 8 (7), 254
- J27. *Polymer Brushes under Shear: Molecular Dynamics Simulations Compared to Experiments*; **Manjesh K. Singh**, Patrick Ilg, Rosa M. Espinosa-Marzal, Martin Kröger and Nicholas D. Spencer; Langmuir **2015**, 31 (16), 4978-4805.