

Dr. Shrinivas Rathod

Assistant Professor (Ad-hoc)

Department of Production Engineering

Veermata Jijabai Technological Institute (VJTI), Mumbai

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Academic Profile

Dr. Shrinivas Rathod is an academic and researcher in production and mechanical engineering with experience in teaching, research, laboratory development, academic administration, and institutional development. His research interests include metal-matrix composites, tribology and wear, physical and mechanical characterization of engineering materials, powder metallurgy, brazing, and advanced manufacturing.

Current Appointment

Designation	Department	Institute	Period
Assistant Professor (Ad-hoc)	Production Engineering	Veermata Jijabai Technological Institute (VJTI), Mumbai	July 2026 – Present

Research Interests

- Metal-based alloys and composite materials
- Tribology, wear, and surface engineering
- Materials characterization and microstructural analysis
- Powder metallurgy and liquid metallurgy
- Additive manufacturing and advanced manufacturing processes
- Brazing of similar and dissimilar materials
- Production engineering, metrology, and quality management

Education

Degree	Institute/University	Year	Remarks
Ph.D., Production Engineering	Malaviya National Institute of Technology Jaipur	2024	
M.Tech., Production Technology	Visvesvaraya Technological University, Belagavi	2005	First Class with Distinction, 76.35%
B.E., Industrial and Production Engineering	Gulbarga University, Karnataka	2000	70.4%

GATE: Qualified, 2003

CSIR-Senior Research Fellowship: 2008

Ph.D. Thesis: *Studies on Physical, Mechanical and Tribological Properties of Cu-Based Composite.*

M.Tech. Thesis: *Characterization of 304 Stainless Steel–Alumina Brazed Joints.*

Employment History

Position	Organisation	Duration
Assistant Professor (Ad-hoc)	Veermata Jijabai Technological Institute (VJTI), Mumbai	July 2026 – Present
Assistant Professor (Ad-hoc)	Veermata Jijabai Technological Institute (VJTI), Mumbai	11 July 2025 – 30 June 2026
Associate Professor (Ad-hoc)	Thakur College of Engineering and Technology, Mumbai	15 February 2024 – 30 June 2025
Principal	Government Tool Room and Training Centre, Chitradurga, Karnataka	10 March 2021 – 22 August 2022
Assistant Professor	DRIEMS, Raigad, Maharashtra	19 July 2019 – 6 March 2021

Assistant Professor,	Institute of Engineering and Technology, JK Lakshmipat University, Jaipur	21 July 2014 – 20 June 2018
Assistant Professor, Department of MSME	Maulana Azad National Institute of Technology, Bhopal	3 January 2014 – 20 July 2014; January 2013 – June 2013
Associate Professor	Gyan Ganga Institute of Technology and Management, Bhopal	2 April 2012 – 31 December 2012
CSIR Senior Research Fellow	Advanced Materials and Processes Research Institute, Bhopal	1 April 2008 – 31 March 2012
Project Assistant	Advanced Materials and Processes Research Institute, Bhopal	13 September 2005 – 31 March 2008

Teaching:

Courses Taught

- Measurements and Metrology
- Production Technology
- Total Quality Management
- Additive Manufacturing
- Advanced Manufacturing Technologies
- Composite Materials
- Operations Management

Student Supervision

- M.Tech. theses guided: 2

Research Projects

Project	Sponsoring Agency
Development of cast in-situ copper-based metal-matrix composites for naval applications and simulation of their microstructural features vis-à-vis properties through FEM analysis	Naval Materials Research Laboratory (NMRL)
Wear performance evaluation of Ni–Ti-based shape-memory alloys and composites under sliding and cavitation-erosion conditions	Board of Research in Nuclear Sciences (BRNS)

Research Publications

Journal Articles

1. **Rathod, S.**, Srivastava, Y., Kiragi, V. R., and Patnaik, A. “Evaluation of physical, mechanical and sliding wear properties of in-situ AB–TiC composite: A comparison with NAB alloy.” *Engineering Research Express*, 5(2), 025041, 2023. <https://doi.org/10.1088/2631-8695/acd435>
2. **Rathod, S.**, Raghubanshi, A., Srivastava, Y., Kiragi, V. R., and Mondal, D. P. “Sliding wear behaviour study of alumina-silicate short fiber reinforced AA2014-Al alloy composite.” *Materials Research Express*, 6(10), 1065a7, 2019. <https://doi.org/10.1088/2053-1591/ab3d60>
3. **Rathod, S.**, Srivastava, Y., Kiragi, V. R., and Patnaik, A. “Effects of in-situ TiC dispersion and test parameters on the dry sliding wear behaviour of aluminium bronze.” *Materials Research Express*, 6(8), 08655, 2019. <https://doi.org/10.1088/2053-1591/ab1d32>
4. Prasad, B. K., **Rathod, S.**, Modi, O. P., Gupta, G. K., and Yadav, M. S. “Two-body abrasive wear behaviour of in-situ Al–TiC particle composites: Influence of TiC reinforcement and content in the alloy matrix and experimental parameters.” *Tribologia–Finnish Journal of Tribology*, 36, 4–23, 2019. <https://doi.org/10.30678/fjt.74449>
5. Srivastava, Y., **Rathod, S.**, and Srivastava, S. “Influence of Cr and Fe on magnetic phase transition and magnetocaloric effect in Co₂(Cr_{1-x}Fe_x)Al soft magnetic Heusler alloys.” *Phase Transitions*, 92(3), 205–216, 2019. <https://doi.org/10.1080/01411594.2018.1563787>
6. Srivastava, Y., **Rathod, S.**, Singh, P. K., Vajpai, S. K., and Srivastava, S. “Study of magneto-structural phase transitions and magnetocaloric effects in Co-based Heusler alloys synthesized via mechanical

- milling.” *Journal of Magnetism and Magnetic Materials*, 462, 195–200, 2018. <https://doi.org/10.1016/j.jmmm.2018.05.014>
7. Mondal, D. P., Jha, N., Badkul, A., Gul, B., **Rathod, S.**, and Das, S. “Effect of age-hardening on compressive deformation behavior of Al-alloy (LM13)–cenosphere hybrid foam prepared using CaCO_3 as foaming agent.” *Journal of Materials Research*, 28(17), 2528–2538, 2013. <https://doi.org/10.1557/jmr.2013.197>
 8. **Rathod, S.**, Sharma, M., Modi, O. P., Khare, A. K., and Prasad, B. K. “Effect of aluminium addition on densification behaviour and microstructural features of P/M processed Cu–TiC composites.” *International Journal of Materials Research*, 7, 666–674, 2013. <https://doi.org/10.3139/146.110911>
 9. Prasad, B. K., **Rathod, S.**, Yadav, M. S., and Modi, O. P. “Sliding wear behavior of cast iron: Influence of MoS_2 and graphite addition to the lubricant.” *Journal of Materials Engineering and Performance*, 20, 445–455, 2011. <https://doi.org/10.1007/s11665-010-9689-y>
 10. Prasad, B. K., **Rathod, S.**, Yadav, M. S., and Modi, O. P. “Effect of some solid lubricants suspended in oil towards controlling the wear performance of cast iron.” *Journal of Tribology*, 132, 041602, 2010. <https://doi.org/10.1115/1.4002217>
 11. Prasad, B. K., **Rathod, S.**, Yadav, M. S., and Modi, O. P. “The influence of lead suspension in oil lubricant on the sliding wear behavior of cast iron.” *Tribology Letters*, 37, 289–299, 2010. <https://doi.org/10.1007/s11249-009-9526-3>
 12. Prasad, B. K., **Rathod, S.**, Modi, O. P., and Yadav, M. S. “Influence of talc concentration in oil lubricant on the wear response of a bronze journal bearing.” *Wear*, 269, 498–505, 2010. <https://doi.org/10.1016/j.wear.2010.05.011>
 13. **Rathod, S.**, Modi, O. P., Prasad, B. K., Chrysanthou, A., Vallauri, D., Deshmukh, V. P., and Shah, A. K. “Cast in-situ Cu–TiC composites: Synthesis by SHS route and characterization.” *Materials Science and Engineering A*, 502, 91–98, 2009. <https://doi.org/10.1016/j.msea.2008.10.002>
 14. Modi, O. P., **Rathod, S.**, Prasad, B. K., Jha, A. K., and Dixit, G. “The influence of alumina particle dispersion and test parameters on dry sliding wear behavior of zinc-based alloy.” *Tribology International*, 40, 1137–1146, 2007. <https://doi.org/10.1016/j.triboint.2006.11.004>
 15. Kurmi, P., **Rathod, S.**, and Jain, P. “Abrasive wear behavior of 2014Al–TiC in-situ composite.” *International Journal of Modern Engineering and Technology*, 3(3), 229–240, 2012.

Recent Manuscripts

- Bharti, K., **Rathod, S.**, and Mathan Kumar, N. “Structural assessment of tubular welded joints with varied lacing angles using FEM.” *China Welding*. Under review, Manuscript No. 20251103054.
- **Rathod, S.**, et al. “Recent advances in additive manufacturing of high-entropy alloys: Processing routes, microstructural evolution, and performance.” *China Welding*. Accepted, Manuscript No. 20251028051.

Conference Publications

Published and presented papers at national and international conferences on aluminium-, copper-, and titanium-carbide composites; abrasive and sliding wear; stainless-steel/alumina brazing; and advanced materials processing. Conferences include MANFEX, ICIT, AMPC, ICAMC, the International Brazing and Soldering Conference, and NMD–ATM.

Patents

1. Dwivedi, K. K., Shrivastava, V., Rathod, S., Verma, S. A., Agarwal, N. B., Gadhavi, L. J., Singh, R., and Jain, D. “Device for Removing Animal Excrement.” Indian Design Patent No. 457793-001, 6 May 2025.
2. Biradar, A. K., Bharti, K., and Rathod, S. “Sea Water Desalination Apparatus Using Solar Energy.” Indian Design Patent No. 469850-001, 15 August 2025.

Academic and Administrative Responsibilities

- Coordinated departmental projects, library activities, examinations, and academic programmes.
- Served on Boards of Studies and the Department Undergraduate Committee.
- Led academic administration and finance functions.
- Facilitated AICTE approval for new courses and developed academic–industry collaborations and institutional MoUs.
- Convened the Transport Committee for the ISG–ISRS National Symposium on *Geomatics for Digital India* (16–18 December 2015).

Technical Facilities and Experimental Expertise

- Materials characterization using optical microscopy, SEM/EDXS (JEOL JSM-5600 and IT200), FE-SEM/EBSD, and X-ray diffraction.
- Operation of tubular, muffle, vacuum, and vacuum-induction furnaces; attritor and planetary ball mills.
- Mechanical and tribological testing, including microhardness, Brinell and Vickers hardness, pin-on-disc, two-body and three-body abrasive wear, erosion-corrosion, and cavitation-erosion tests.
- Interpretation of microstructural, XRD, wear, hardness, and mechanical-test data.
- Synthesis and characterization of copper-, aluminium-, and zinc–aluminium-based alloys and metal-matrix composites through liquid- and powder-metallurgy routes.
- Brazing of similar and dissimilar material systems.

Professional Memberships

- Life Member, Tribology Society of India, Membership No. LM 5179
- Life Member, Materials Research Society of India
- Life Member, The Indian Institute of Metals
- Member, Global Society for Technical Education, Membership No. F-1499