

## FACULTY PROFILE



**Name:** Dr. Priya Ranjan

**Designation:** Assitant Professor (Research)

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### Professional Qualification:

Program	Institution	%/CGPA	Year of completion
Ph.D (Mechanical Engineering)	Indian Institute of Technology Madras, Chennai	<u>9.0</u>	May 2023
M.Tech ( Manufacturing Engineering)	Indian Institute of Technology (ISM), Dhanbad	<u>9.15</u>	2017
B.E. (Mechanical Engineering)	Sagar Institute of Science and Technology, Bhopal	<u>86.8%/8.68</u>	2015
STD XII	Bal Vidya Niketan, Jehanabad	<u>70.4%</u>	2010
STD X	Gyan Bharti Public School, Gaya	<u>90%</u>	2008

### Publications (Journals & Conferences):

#### Journals:

- Ranjan, P.** and S. S. Hiremath (2023) Finite element modelling and experimental validation of turning process using bio-mimicked structured tool for outcomes relevant to industry. Machining Science and Technology, 27(3), 209-246. DOI: <https://doi.org/10.1080/10910344.2023.2215304>, Publisher: Taylor and Francis.
- Ranjan, P.** and S. S. Hiremath (2023) An experimental investigation on bio-inspired structure position variation on tool surface during turning of difficult to machine material. Journal of

Materials Engineering and Performance, 32, 1-20. DOI: <https://doi.org/10.1007/s11665-023-08329-y>, Publisher: Springer.

3. **Ranjan, P.** and S.S. Hiremath (2022) Influence of texture parameters of the bio-inspired crescent textured tool on machining performance of martensitic stainless steel. *CIRP Journal of Manufacturing Science and Technology*, 39, 70-90. DOI: <https://doi.org/10.1016/j.cirpj.2022.07.008>, Publisher: Elsevier.
4. **Ranjan, P.** and S. S. Hiremath (2022) Finite element simulation and experimental validation of machining martensitic stainless steel using multi-layered coated carbide tools for industry-relevant outcomes. *Simulation Modelling Practice and Theory*, 114, 102411. DOI: <https://doi.org/10.1016/j.simpat.2021.102411>, Publisher: Elsevier.
5. **Ranjan, P.** and S. S. Hiremath (2022) Investigation of coated tool performance on the machinability, surface residual stress and chip morphology of martensitic AISI 420 steel. *Arabian Journal for Science and Engineering*, 47, 8503-8522. DOI: <https://doi.org/10.1007/s13369-021-06303-1>, Publisher: Springer.
6. **Ranjan, P.** and S. S. Hiremath (2019) Role of textured tool in improving machining performance: A review. *Journal of Manufacturing Processes*, 43, 47-73. DOI: <https://doi.org/10.1016/j.jmapro.2019.04.011>, Publisher: Elsevier.
7. **Ranjan, P.** and S. S. Hiremath (2023) Influence of bio-inspired structured tools with minimum quantity nano-green cutting fluid for sustainable machining of hard-to-cut material. *Materials and Manufacturing Processes*. (Status: Review submitted).
8. **Ranjan, P.** and S. S. Hiremath (2023) An investigation on the performance of bio-mimicked rake surface structured tool during machining of hard to cut materials. *Proceedings of the Institution of Mechanical Engineers, Part E*. (Status: Under Review).

#### **Patent:**

1. **S. S. Hiremath** and **Priya Ranjan** Bio-inspired textured turning tool for sustainable machining of difficult to machine materials. Patent No- 422058, Grant Date -16-02-2023, Application No- 202241037879.

#### **Conferences:**

1. **Ranjan, P.** and S. S. Hiremath (2022) Effect of bio-inspired crescent textured tool parameters on machining performance of martensitic stainless steel. Poster No- 48 in *Advances in Surfaces, Interfaces and Interphases*, 15-18 May 2022.
2. **Ranjan, P.** and V. Bajpai (2017) Finite element modelling of hard turning through micro-textured tool. International conference on *Advances in Materials and Manufacturing (ICAMM'17)*. Organized by National Institute of Advanced Manufacturing Technology on Jan 19-21, 2017.

## **Awards and Achievements**

1. Received Institute Research Award from IIT Madras for excellent work done during PhD, 2023.
2. Our Research work on bio-inspired textured cutting tool has been covered by the Hindu Business Line Article published on 26<sup>th</sup> Januray 2023 titled "More Bio-inspired functional materials pouring out of labs". (<https://www.thehindubusinessline.com/business-tech/more-bio-inspired-functional-materials-pouring-out-of-labs/article66416812.ece>)
3. Nominated for IEI NMLC-FCRIT Excellence Award 2022.

## **Workshops/Seminars/FDPs:**

1. Attended Short Term Course on "Modelling Approach in Micro-Machining Processes" organized by Department of Mechanical Engineering, Pandit Deendayal Petroleum University, Gandhinagar from 26<sup>th</sup>-30<sup>th</sup> October 2020.

**Work Experience:** 8 May 2023- Present at SRM Institute of Science and Technology, Delhi-NCR Campus, Ghaziabad-201204.

## **Professional Memberships:**

1. Life member of Indian Society of Technical Education