

Faculty Profile

Name : Dr Imran M Jamadar
Designation : Professor
Department : Mechanical Engineering
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About Me:

I currently serve as Professor of Mechanical Engineering and Dean of Research & Development at NIE, Mysuru. My research expertise spans over vibration control in flexible robotic manipulators, predictive maintenance for rotating machinery including Bearings, Gears, Fan Blades etc., the enhancement of Vibration, Fatigue, Tribology and Wear properties in Polymer Composites. I have led externally funded projects in vibration control of lightweight robotic manipulators (SERB–SURE, ongoing), wind turbine and gearbox predictive maintenance using machine learning (TIH–IoT IIT Bombay, completed). Looking ahead, I aspire to engage my students in similar research activities, fostering a collaborative and innovative environment. I also serve as **Editor, *Scientific Reports* (Springer Nature, SCI Q1)** and actively review for leading international journals in vibration, Tribology, composites, and smart system,

1. ASME Journal of Tribology
2. Scientific Reports, Nature
3. IEEE Access
4. Journal of Vibration & Control (SAGE)
5. Polymer Composites (Wiley)
6. PLOS One (Public Library of Science)
7. Noise & Vibration Worldwide (SAGE)
8. Nonlinear Dynamics (Springer)
9. Journal of Mechanical Engineering Science (SAGE)
10. International Journal of Acoustics and Vibration (IIAV)
11. Measurement (Elsevier)
12. Advances in Mechanical Engineering (SAGE)
13. Automation in Construction (Elsevier)
14. SN Applied Sciences (Springer)

15. Testing and Evaluation (ASTM)
16. ISA Transactions (Elsevier)
17. Journal of the Brazilian Society of Mechanical Sciences and Engineering (Springer)
18. Transactions of the Canadian Society for Mechanical Engineering (Canadian Science Publishing)
19. Journal of Industrial Lubrication and Tribology (Emerald)
20. Frontiers in Energy Research (Frontiers Media S.A.)
21. Shock and Vibration (Hindawi)
22. Journal of Vibration Engineering & Technologies (Springer)
23. Non-destructive Testing and Evaluation (Taylor & Francis)
24. Nonlinear Engineering: Modeling and Application (De Gruyter Brill)
25. Simulation Modelling Practice and Theory (Elsevier)
26. Journal of Bio- and Tribo-Corrosion (Springer)
27. Mathematical Problems in Engineering (Wiley)

Positions held at NIE:

M. Tech. Machine Design Program Coordinator From Feb. 2021-2024 Aug.2024.

Dean Research & Development from April 2024 till date

Qualification: **B.E.** (RIT, Shivaji Univ., Kolhapur), **M.Tech.** (VJTI, Mumbai Univ., Mumbai), **Ph.D.** (SVNIT, Surat)

Scholastic Achievements:

- Secured 90 percentile in GATE Mechanical Engineering 2013.
- Secured 93.10 percentile in GATE Mechanical Engineering 2012.
- Secured 97.03 percentile in GATE Mechanical Engineering 2010

Courses Taught:

- **UG-**Theory of Machines, Dynamics of Machinery, Finite Element Methods, Research Methodology, Automotive System Design, Design for manufacturing & Assembly.
- **PG-**Advanced Theory of Vibrations, Finite Element Analysis in Design, Research Methodology

Publications:

Journal Publications:

1. Imran M Jamadar, Allwin Yesuvadian R, P. K. Samal, Residual Vibrations Control of A 3D Printed Lightweight Single Link Flexible Manipulator, 2025, Sigma J Eng Nat Sci - DOI: 10.14744/sigma.2025.00167.

2. P.K. Samal, **I. M. Jamadar**, V Baligar , A comparative analysis of machine learning algorithms for fault classification in cylindrical roller bearings, *FME Transactions* 53 (4), 681-692, doi: 10.5937/fme2504681K.
3. P. K. Samal, R. Srinidhi, P. K. Malik, H. J. Manjunatha and **I. M. Jamadar**, Benchmarking Machine Learning Algorithms for Bearing Fault Classification Using Vibration Data: A Deployment-Oriented Study, in *IEEE Access*, vol. 13, pp. 113984-114002, 2025, doi: 10.1109/ACCESS.2025.3581711.
4. Ramesh, G.,**Imran M. Jamadar** Dharmaraj, U., Rao, B.V.S. et al. Analysis for conceptual design of domestic scale Ragi Mudde machine. *J Food Sci Technol* (2025). <https://doi.org/10.1007/s13197-025-06205-2>.
5. **I M Jamadar**, V Sharma, B Suresha, AS Lathika, A Ankaiah, PK Samal, Evaluation of Damping Characteristics of 3D Printed CF-reinforced PLA/ABS Composite Sandwich Panels. *Romanian Journal of Acoustics and Vibration*. 21, 2 (Dec. 2024), 121–127.
6. **Imran M. Jamadar**, Pavankumara Kamate, Prasanta Kumar Samal, Evaluation of fatigue characteristics of 3D printed/composites reinforced with carbon fiber using design of experiments, **Wiley, Polymer Composites (Q1)** (2024), <https://doi.org/10.1002/pc.28958>.
7. PK Samal, **I M Jamadar**, AI-Enhanced Fault Diagnosis in Rolling Element Bearings: A Comprehensive Vibration Analysis Approach, *FME Transactions (Q2)* (2024) 52, 450-460, doi: 10.5937/fme2403450S.
8. **Imran M. Jamadar**, Ajit Kumar Patil, Prasanta Kumar Samal, B. Suresha, An Empirical Model Integrating Dimensional Analysis and Box-Behnken Design for Crack Detection in Rotor Fan Blades,*FME Transactions (Q2)* (2024) Vol.52, pp. 45-56, doi: 10.5937/fme2401045J.
9. **I M Jamadar**, Nithin R, Nagashree S, Prajwal Prasad V R, Preetham M, P K Samal, Shekhar Singh, Spur Gear Fault Detection Using Design of Experiments and Support Vector Machine [SVM] Algorithm, **Springer Journal of Failure Analysis and Prevention(Q3)**, (2023) 23:2014–2028. DOI: <https://doi.org/10.1007/s11668-023-01742-4>.
10. Ajit Kumar Patil, **Imran Jamadar** and B. Suresha, Numerical and Experimental Study of Vibrations Caused by Defects in Fan Blades, *Journal of Mines, Metals and Fuels(Q4)*, 71(6): 770-775; 2023. DOI: 10.18311/jmmf/2023/34492.
11. S.M. Darshan, B. Suresha, **I.M. Jamadar**, June.2022, Optimization of Abrasive Wear Parameters of Halloysite Nanotubes Reinforced Silk/Basalt Hybrid Epoxy Composites using Taguchi Approach, **Tribology in Industry(Q3)**, Vol. 44, No. 2, pp. 253-267, 2022 DOI: 10.24874/ti.1131.06.21.08.

12. **I.M.Jamadar**, B.Suresha, P.K.Samal, March 2022, Dimensional Amplitude Response Analysis of Vibrations Produced by Defects in Rolling Contact Bearings, **Sound and Vibration (Q3)**, Vol.56, No.2, 2022.
13. **I. M. Jamadar**, Feb. 2022, Vibration Characteristics Diagnosis and Estimation of Fault Sizes in Rolling Contact Bearings: A Model-Based Approach, **ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems (Q2)**, February 2022, Vol. 5 / 011003-1, pp. 1-13, DOI: 10.1115/1.4051176.
14. **I. M. Jamadar**, June 2021, A Model to Estimate Synchronous Vibration Amplitude for Detection of Unbalance in Rotor Bearing System, **International Journal of Acoustics and Vibration(Q3)**, Vol. 26, No. 2, 2021, pp. 161-169, <https://doi.org/10.20855/ijav.2021.26.21756>.
15. G.S. Divya, B. Suresha, H.M. Somashekar, **I.M. Jamadar**, June 2021, “Dynamic Mechanical Analysis and Optimization of Hybrid Carbon-Epoxy Composites Wear using Taguchi Method”, **Tribology in Industry(Q3)**, Volume 43, No 2, 2021, Pages 298-309, DOI: 10.24874/ti.931.07.20.11.
16. **I.M.Jamadar**, S.A.I.Bellary, 2019, “Model Based Condition Monitoring for the Detection of Failure of a Ball Bearing in a Centrifugal Pump”, **Springer Journal of Failure Analysis and Prevention (Q3)**, Vol.19, pp.1556–1568.
17. **I.M.Jamadar**, D.P.Vakharia, 2018, “Correlation of base oil viscosity in the grease with vibration severity of damaged roller bearings”, **Emerald, Journal of Industrial Lubrication and Tribology(Q3)**, Vol.70 (2) pp.264-272.
18. **I.M.Jamadar**, D.P.Vakharia, 2017, “A New Damage Diagnostic Approach for Deep Groove Ball Bearings having Localized Surface Defects in the Raceways”, **ASME Journal of Tribology(Q2)**, Vol.139, pp.061103-1-10.
19. **I.M.Jamadar**, D.P.Vakharia, 2016, “A Novel Approach Integrating Dimensional Analysis and Neural Networks for the Detection of Localized Faults in Roller Bearings”, **Elsevier Journal of Measurement,(Q1)**, Vol.94, pp.77–185.
20. **I.M.Jamadar**, D.P.Vakharia, 2016, “An in-situ synthesized model for detection of defective roller in rolling bearings”, **Elsevier Journal of Engineering Science and Technology, (Q1)**, Vol.19, pp.1488-1496.
21. **I.M.Jamadar**, D.P.Vakharia, 2016, “A Numerical Model for the Identification of the Structural Damages in Rolling Contact Bearings Using Matrix Method of Dimensional Analysis”, **ASME Journal of Tribology(Q2)**, Vol.138, pp. 021106-1-12.

22. V. G. Mulik, V.A. Mane, **I. M. Jamadar**, 2014, “Implementation of the Hidden Markov Models in the Robust Speech Recognition”, **International Journal of Advance Research In Science & Engineering**, Vol.3, Issue 10, Oct.– 2014, ISSN: 2319-8354.
23. S.M. Patil, R. G. Desavale, **I. M. Jamadar**, 2013, “Conceptual Structure Design Through Thickness Optimization of High Pressure and High Temperature Self-Regulated Pressure Valve Using Non-Linear Transient Finite Element Analysis”, **International Journal of Engineering Research & Technology (IJERT)**, Vol. 2, Issue 6, June – 2013, ISSN: 2278-0181.
24. S.S.Chavan, R.G.Desavale, and **I. M. Jamadar**, “Experimental Investigation of Effect Of Angular Positioning Of Legs On Structural Stability Of Pressure Vessel And By Using Non-Linear Finite Element Analysis”, **International Journal of Engineering Research & Technology (IJERT)**, Vol. 2, and Issue 6, June – 2013, ISSN: 2278-0181.
25. G. N. Rakate, R.G. Desavale, **I.M. Jamadar**, 2013, “Structural Design of Overhanging Pressure Vessel Support Used in Pyrolysis Process Using Non-Linear Finite Element Analysis for Structural Stability”, **International Journal of Engineering Research & Technology (IJERT)**, Vol. 2, Issue 6, June – 2013, ISSN: 2278-0181.
26. **I.M.Jamadar**, S.M.Patil, S.S.Chavan, G.B.Pawar, and G.N. Rakate, 2012, “Thickness optimization of inclined pressure vessel using nonlinear finite element analysis using design by analysis approach” ,**International Journal of Mechanical Engineering and Technology (IJMET)**, Volume 3, Issue 3, Sep- Dec (2012) ISSN 0976 – 6340(Print), ISSN 0976 – 6359(Online) © IAEME.
27. **I.M. Jamadar**, R.M.Tayade, and V.G. Patil, 2012, “Structural Analysis of Inclined Pressure vessel Using FEM”, **International Journal of Engineering Research & Technology (IJERT)**, Vol. 1, Issue 3, May – 2012 ISSN: 2278-0181

Conference Publications:

1. Samal, P.K., Sunil, K., **Jamadar, I.M.**, Kowshik, M., Srinidhi, R. (2024). Fault Classification in Rolling Element Bearing Based on Vibration Signature Using Artificial Neural Network. In: Suresh, S., Lal, S., Kiran, M.S. (eds) Intelligent Control, Robotics, and Industrial Automation. RCAAI 2023. **Lecture Notes in Electrical Engineering**, vol 1220. Springer, Singapore. https://doi.org/10.1007/978-981-97-4650-7_38.
2. **Imran M. Jamadar** attended as a Faculty Delegate, **10th International Conference on Transformation in Engineering Education (ICTIEE 2023)**, at Vidyavardhaka College of Engineering Mysuru in Association with Indo Universal Collaboration for Engineering Education (IUCEE) From Jan.06-07, 2023.

3. Naik, Charanaraja, Samal, Prasanta Kumar, Hulugappa, B., Bheemappa, Suresha, **Jamadar, Imran**, Malik, Pramod. (2023). Effect of Filler Material Type on Dynamic Behaviour of Composite Beams; an Experimental Study. 10.2174/9789815079395123010017., **Book Chapter Intelligent Technologies for Scientific Research and Engineering**, pp 147-154.
4. S L Aravind, HP Bharath, B Suresha, B Harshavardhan, **Imran M Jamadar**, PK Samal, A Anand, Feb.2023, Experimental Investigations on the Effect of Carbon Nanotubes and Nanoclay Additives on Thermo-Kinetics and Mechanical Characteristics of Acrylonitrile Butadiene Styrene (ABS), **International Symposium on Lightweight and Sustainable Polymeric Materials - LSPM'23 (Virtual mode), Bangkok, Thailand, 17th February 2023.**
5. B. Suresha, Vikas Hanamasagar, **Imran M Jamadar**, S. L. Aravind, H. M. Somashekar, Feb.2023, Mechanical properties and abrasion resistance of 3D printed lightweight CF-reinforced PLA/ABS composites using design of experiments, **International Symposium on Lightweight and Sustainable Polymeric Materials - LSPM'23 (Virtual mode), Bangkok, Thailand, 17th February 2023.**
6. Prasanta Kumar Samal, C Amara Chandra, D Lokesh, **Imran M Jamadar**, Chandan M, Pramod Kumar Malik, Srinidhi R, Nov. 2022, Experimental Technique to Determine Mode Shapes of A Rectangular Plate By Hammer Impact Test, **4th International Conference on Innovative Product Design and Intelligent Manufacturing System (IPDIMS) 22, 25-26 November 2022, NIT Rourkela.**
7. Prasanta Kumar Samal, Harsha K, **Imran M Jamadar**, Chandan M, Pramod Kumar Malik, Srinidhi R, Nov. 2022, Identification of Damage in Fixed-Fixed Beam By Classification of Normalized Natural Frequencies, **4th International Conference on Innovative Product Design and Intelligent Manufacturing System (IPDIMS) 22, 25-26 November 2022, NIT Rourkela.**
8. Ajit Kumar Patil, **Imran Jamadar**, Prasanta Kumar Samal, August 2022, Integration of Box-Behnken design and finite element analysis for damage detection in fan blades, **2nd International Conference on Future Trends in Materials and Mechanical Engineering (ICFTMME 2022), 19-20 August 2022, SRM Institute of Science and Technology, Ghaziabad.**
9. Sridutt H. R., **I. M. Jamadar**, July2022, Modelling and Motion Simulation of Vertical Load in Three axis Mechanism, **International Conference on Mechanical, Industrial and Production Engineering(ICMIPE) held in Tumakuru, India on 22 July, 2022.**

10. Ajit Kumar Patil, **Imran Jamadar**, B. Suresha, July2022, Numerical and Experimental Study of Vibrations Caused by Defects in Fan Blades, **International Conference on Sustainable Materials, Manufacturing & Industrial Engineering- ICSMMIE-2022, 1 -2 July, 2022, SIT, Tumkuru, Karnataka, India.**
11. P. Pradeep, M.Y. Aravind Rao,B. Suresha, **Imran Jamadar** , S. Seetharamu, April 2021, “Mechanical behaviour and tribological properties of cenosphere-copper composites using design of experiments”, **Materials Today: Proceedings (Q2)**,Volume 43, Part 2, 2021, Pages 1798-1809, DOI: <https://doi.org/10.1016/j.matpr.2020.10.494>.
12. **I. M.Jamadar**, S.A.I.Bellary, 2019, “A New Approach for Detection of Rotor Unbalance for Minimizing Premature Rolling Contact Bearing Failures”, **10th International Conference on Industrial Tribology, (IndiaTrib – 2019), December 1-4, 2019, Indian Institute of Science (IISc), Bangalore.**
13. **I.M.Jamadar**, S.R.Khade, A.A.Dhanawade, S.C.Tapase, N.L.Devane, M.B.Sutar, 2017 “Design Optimization of Disc Brake Using Thermo-Structural Coupled Finite Element Analysis”, **International Conference onFrontiers in Engineering, Applied Sciences and Technology(FEAST), March 31- April 1, 2017, National Institute of Technology, Trichy, India.**
14. **I.M.Jamadar**, D.P.Vakharia, 2016, “Model Development For Investigation of Localized Defects In Taper Roller Bearings Using Matrix Method of Dimensional Analysis”, **12th International Conference on Vibration Problems (ICOVP), Indian Institute of Technology, Guwahati, India, December 14-17, 2015. Published in Elsevier, J. Procedia Engineering, Vol. 144, pp. 751 – 758.**
15. **I.M. Jamadar**, J.S. Salunkhe, P.U. Bhadare, I.P. Pudale, S.A. Bolawade and N.D. Deshpande, “Damage Detection in Ball Bearings Using Vibration Signature Analysis”, **1st International Conference on Advances in Dynamics, Vibration and Control (ICADVC 2016)**, February 25-27, **National Institute of Technology, Durgapur, India** Published Narosa Publishing House, New Delhi. Feb.2016, pp.174-179.
16. **I.M. Jamadar**, R.M.Tayade, V.G.Patil, “Finite Element Analysis of Inclined Pressure Vessel Using Elastic Stress Method”, **International Conference on Advanced Research in Mechanical Engineering (ICARME-2012), 13thMay, 2012, Trivendum, ISBN : 978-93-81693-59-91,pp.102-107.**

Ph.D. Supervision: 04 Ongoing

1. Mr. Santhosh K G, Research Topic-Fatigue Property Enhancement of Bio- Fiber Based Polymer Composites.
2. Mr. Nithin M , Research Topic-Damage detection in Helical Gears Using AI/ML Algorithms.
3. Mr. Prabodh Saidutt, Research Topic-Mechanical Property Enhancement of Metal-Polymer Composites.
4. Mr. Ramesh G, Research Topic-Design and Development of tamarind deseeding and pulp extraction machine, Co-Supervisor at CsIR-CFTRI, Mysuru.

Sponsored Research Project:

1. Title: Numerical and Experimental Studies for the Vibration Control of 3D Printed Complex Shaped Light Weight Robotic Manipulators

Scheme: State University Research Excellence (SERB SURE), **Science and Engineering Research Board (SERB), New Delhi. Total Budget -Rs. 18,86,400/- Status-Ongoing.**

2. Title: Wind Turbine Predictive Maintenance using Machine Learning Approach

Scheme: TIH-IoT CHANAKYA UG/PG Internship/Fellowship Program 2023, **IIT Bombay Total Budget -Rs. 480,000/- Status-Completed.**

3. Title: Vibration, Noise and Tribological Investigations on the Prospective Use of Different Types of Polymers and its Composites in Gear Transmission Systems

Scheme: Research Grant Scheme 2021 of VTU University, Belgavi **Total Budget -Rs. 10,00,000/- Status-Approved.**

4. Title: Condition monitoring and predictive maintenance of Gear Box

Scheme: TIH-IoT CHANAKYA UG/PG Internship/Fellowship Program 2022, IIT Bombay **Total Budget -Rs. 480,000/- Status-Completed.**

5. Title: A new approach for the detection of unbalance in rotors

Scheme: Research initiation scheme of Shivaji University, Kolhapur **Total Budget -Rs.110,000/- Status-Completed.**

Lab Development:

Coordinator for the establishment of the **AICTE IDEA Lab** at **The National Institute of Engineering (NIE), Mysuru**, responsible for activities from **proposal submission to successful lab setup and operationalization**

Membership of Professional Bodies: **Lifetime Member-Indian Society of Technical Education, Membership ID: LM124458.**
