



**Assistant Professor,  
Production Engineering Department,  
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## **Dr. VISHWADEEP HANDIKHERKAR**

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### **Research Interests:**

- ◆ Digital Twin, Condition Based Maintenance, Vibration Analysis, Industrial Internet of Things, Machine Learning

### **EDUCATION:**

- **PhD (2021)**, Mechanical Engineering, Veer mata Jijabai Technological Institute (VJTI), Mumbai
  - Thesis Title- Vibration Analysis Based Condition Monitoring of Gearbox Using Artificial Intelligence Technique
  - To develop a vibration analysis based condition monitoring and fault diagnosis system using simulation driven approach.
  - Supervisor- Dr. Vikas M Phalle
- **M.Tech (2014)**, Machine Design, Mechanical Engineering, Veer mata Jijabai Technological Institute (VJTI), Mumbai
  - Specialization: - Machine Design
  - M.Tech project work completed at “BHABHA ATOMIC RESEARCH CENTER” (BARC), Mumbai
  - Dissertation Title: - Design of Linear Hydrostatic Bearing for Servo Hydraulic Actuators.
  - Designed an experimental test rig, prepared a Mathematical model using Reynold’s Equation, Optimized performance parameters for Actuator bearing.
- **B.E. (2012)**, Mechanical Engineering, Sardar Patel College of Engineering (SPCE), Mumbai

### **WORK/RESEARCH EXPERIENCE:**

- Assistant Professor, Production Engineering Department, VJTI, Mumbai
  - Period- March 2024 to till date
- Engineer (RST), Mumbai Monorail
  - Period- May 2021 to March 2024
- Senior Research Fellow, CoE-CNDS, VJTI, Mumbai
  - Period – November 2020 to March 2021
- Senior Research Fellow, L&T Infotech Project, CoE-CNDS, VJTI, Mumbai
  - Period - July 2018 – March 2019
- Assistant Professor in Mechanical Engineering Department, VJTI, Mumbai.
  - Period- August 2014 to August 2016

### **CERTIFICATION:**

- Certified Level-2 Vibration Analyst as per ISO 18436-2
- Certification in Diploma in CAD

### **MEMBERSHIP OF PROFESSIONAL BODIES:**

- ◆ Life member of “TRIBOLOGY SOCIETY OF INDIA”. (LM-5197)

## PUBLICATIONS:

1. **Handikherkar, V. C.**, & Phalle, V. M. (2021). Gear Fault Detection using Machine Learning Techniques-A Simulation-driven Approach. *International Journal of Engineering*, 34(1), 212-223.
2. Sangram Patil, Aum Patil, **Vishwadeep Handikherkar**, Sumit Desai, Vikas Phalle, and Faruk Kazi “Remaining Useful Life (RUL) Prediction of Rolling Element Bearing Using Random Forest and Gradient Boosting Technique” ASME’s IMECE-2018 International Mechanical Engineering Congress & Exposition, Pittspergh, USA
3. Kulkarni, P. D., Phalle, V. M., Pawar, S. R., & **Handikherkar, V.** (2024). CFD Analysis of Factors Affecting Conical Journal Bearing Performance. *Zhongguo Kuangye Daxue Xuebao*, 29(4), 407-418.
4. Kulkarni, P. D., Phalle, V. M., Pawar, S. R., & **Handikherkar, V.** Essential Parameters for Optimizing Conical Journal-Bearing Performance. *steel research international*, 2400751.
5. **Handikherkar V.C.**, Phalle V.M. and Patil S. S. “Stacking Classifier based Fault Detection in Spur Gear Train” presentation in Ktrib conference Korea. November 30- December 2, 2020.
6. **Handikherkar V.C.**, Phalle V.M. (2020) Vibration Analysis Based Spalling Defect Severity Assessment of Spur Gearbox Using a Dynamic Model. In: Abali B., Giorgio I. (eds) *Developments and Novel Approaches in Nonlinear Solid Body Mechanics*. Advanced Structured Materials, vol 130. Springer, Cham
7. **Handikherkar V.C.**, Phalle V.M. Vibration Analysis Based Spalling Defect Severity Assessment of Spur Gearbox Using a Dynamic Model. *International Conference on Nonlinear Solid Mechanics (ICoNSoM-2019)*, 16-19 June 2019, Roma, Italy.
8. **Vishwadeep Handikherkar** and Vikas M. Phalle, (2018), “Fault Diagnosis of Bevel Gear by Using Random Forest and Adaptive Boosting Technique”, *International Conference on Tribology (TRIBOINDIA-2018)*, VJTI, Mumbai, 13–15 December 2018.
9. Ameya M. Mahadeshwar, Sangram S. Patil, **Vishwadeep C. Handikherkar**, Vikas M. Phalle “Influence of Operating Parameters on Unbalance in Rotating Machinery Using Response Surface Method” *S&V: Sound and Vibration*, Vol.52, Issue 5 , pp.12-21, 2018
10. Sumit Desai, Shankar Mantha, **Vishwadeep Handikherkar**, Vikas Phalle, and Sangram Patil, “Design and Prototype Development of a Reconfigurable Wheelchair With Stand-Sit-Sleep Configurations” ASME’s IMECE-2018 International Mechanical Engineering Congress & Exposition, Pittspergh, USA
11. **Vishwadeep Handikherkar**, Samadhan Dhangar, Sangram S. Patil and Vikas M. Phalle, (2017), “Stress Analysis of Parallel Misaligned Spur Gear Pair”, *Advanced in Thermal System, Materials and Design Engineering (ATSMDE-2017)* - International Conference, Paper No.-DE-049, 21-22 December, 2017.
12. Sayyad V. M, Patil S. S., **Vishwadeep C. H.** and Dr. Phalle V. M. “Effect of Centre Distance Variation On Performance Of Spur Gear”, *Proceedings of 6<sup>th</sup> International Congress On Computational Mechanics And Simulation (ICCMS-2016)*, 2016, pp.1462-1465
13. Sayyad V. M, Patil S. S., **Vishwadeep C. H.** and Dr. Phalle V. M. “Effect of Friction between Punch & Die on Springback in 60° V Bend” *Proceedings of 6<sup>th</sup> International Congress On Computational Mechanics And Simulation (ICCMS-2016)*, 2016, pp.994-997

## **WORKSHOPS/TRAINING ATTENDED:**

1. Vibration Condition Monitoring Level-2 training as per ISO 18436-2 conducted at Mumbai between 13<sup>th</sup> – 16<sup>th</sup> March 2018 by IRD Mechanalysis Limited.
2. Two days short term course on “Advanced Signal Processing Techniques for Fault Detection of Mechanical and Electrical Systems” at IIT Indore from 10<sup>th</sup> – 11<sup>th</sup> March, 2018.
3. One week workshop on “Innovation, Entrepreneurship and Incubation” at IIT Bombay from 14<sup>th</sup> – 18<sup>th</sup> March, 2017, under CEP-TEQIP.
4. One day joint TEQIP-KITE workshop with VJTI Mumbai on “Recent Trends in Biomedical Signal Processing” on 20<sup>th</sup> January 2017.
5. One week course on “Numerical Linear Algebra for Engineering Application” at VJTI Mumbai from 26<sup>th</sup> – 30<sup>th</sup> January 2017, under GIAN MHRD.
6. Two weeks short term training programme on “Mathematical and Statistical Foundations in Engineering Applications” at VJTI Mumbai from 16<sup>th</sup> – 19<sup>th</sup> September 2016 and 12<sup>th</sup> – 17<sup>th</sup> October 2016.
7. One week course on “Robotics for Human Movement Training” at VJTI Mumbai from 8<sup>th</sup> – 12<sup>th</sup> August 2016, under GIAN MHRD.
8. One week course on “Industrial Tribology” at VJTI Mumbai from 4<sup>th</sup> – 8<sup>th</sup> July 2016, under GIAN MHRD.
9. One day workshop on “Skill India” under TEQIP at VJTI Mumbai on 25<sup>th</sup> February 2016.
10. One day workshop on “Digital Transformation” under TEQIP at VJTI Mumbai on 2<sup>nd</sup> February 2016.
11. One day workshop on “Internet of Things” under TEQIP at VJTI Mumbai on 8<sup>th</sup> January 2016.
12. 7<sup>th</sup> Summer School in Tribology, 2015, at Gurgaon
13. Mobitronix a workshop on Fundamentals of Robotics and Electronics conducted by TechnoPhilia.
14. Nexus robotics workshop at Indian Institute of Technology (IIT) Bombay

## **WORKSHOPS ORGANIZED:**

1. One day workshop on “Skill India” under TEQIP at VJTI Mumbai on 25<sup>th</sup> February 2016.
2. One day workshop on “Digital Transformation” under TEQIP at VJTI Mumbai on 2<sup>nd</sup> February 2016.

## **INTERNATIONAL VISITS:**

- Visited Rome, Italy in June 2019 for conference paper presentation. Visit sponsored by VJTI, Mumbai