



# Dr. VISHAL MAHALE

Diligent and dedicated professional with total 11+ years of work experience. (6+ years of industrial and 5 years of academic research experience)

Specialized in Tribology, Polymer bearings, Brake friction materials and Development of polymer composites & nano-composites for enhanced tribo-performance. Has working experience in various domains like new product development, project management, customer handling, application engineering, business development, vendor development, patent analysis and market research. Also familiar with global environment and working inclusively with virtual global teams. Excellent interpersonal and communication skills. Dynamic and determined with exceptional leadership qualities.

## CONTACT

(091) 9717046910

mahale.vishal09@gmail.com

## PUBLICATIONS

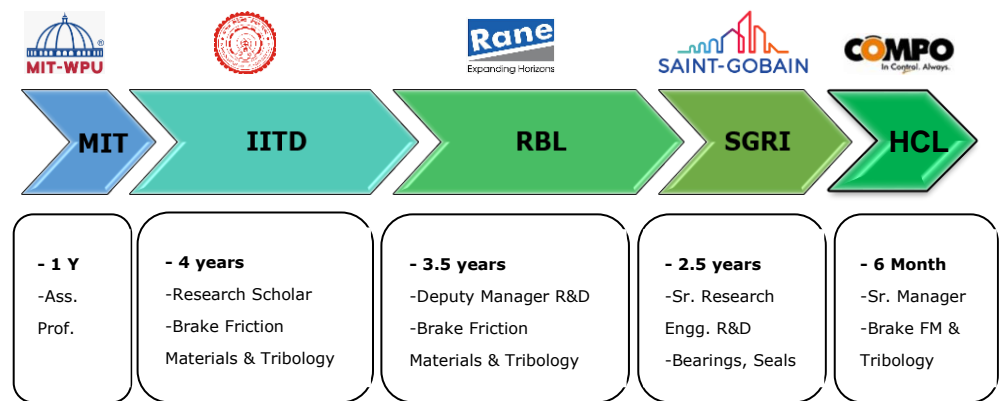
- Journals – 9
- Conferences – 6
- h-index – 8
- Citations – 359
- <https://scholar.google.co.in/citations?user=jg380CQAAAAJ&hl=en>
- <https://www.linkedin.com/in/dr-vishal-mahale-8292b38b/>

## CORE QUALIFICATIONS

### Technical & Software Skills

- Project management
- New product development
- Tribological testing and NVH analysis
- Solar bearing, steering gear and headset bearing testing
- Friction material formulation development for brake pads
- Conducting new friction material development trials
- Physical properties characterization
- Development of polymer composites & nano-composites
- Problem-solving approach
- Multilingual
- Good Communication skills
- Operating Systems: Windows Family

## PROFESSIONAL EXPERIENCE



### Senior Manager

Hindustan Composites Ltd, R&D – Paithan, India. (6 months)

- Responsible for driving new-product-development activities and leading R&D activities of commercial brake linings
- The major focus is on leading CV lining/ CV Pad R&D, development of new opportunities and improvement in project management and manufacturing processes.

### Senior Research Engineer

Saint-Gobain Research India, R&D – Chennai, India. (2.5 years)

- Responsible for driving new-product-development activity for Saint-Gobain's Performance Plastic Business (Bearings, seals, Automotive polymer solutions and their applications)
- Acts as a bridge between market, sales and technical & Application engineering support
- New opportunities and business development through patent research and customer connect
- Skilled in anti-friction material and Tribology
- Worked on new products and applications developmental projects for automotive and industrial market
- Solution driven interactions with internal and external customers
- Managing Projects with stage gate process by interfacing with multiple stakeholders globally and locally in a matrix organization.

- Microsoft Office: MS Word, PPT, Excel

### **Tool: Power BI**

- Comprehensive knowledge of data design, data modelling, data management, and Data visualization.
- Create customize charts and custom calculations as per requirements.
- Create dashboards and interactive visual reports using Power BI.
- Perform DAX queries and functions in Power BI.

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### **DEVELOPMENTAL TRAININGS**

- System Engineering (2023)
- Communication Edge (2022)
- Statistics & TQM (2019)

### **Deputy Manager**

**Rane Brake Lining Ltd, R&D - Chennai, India (3.5 years)**

- 09/2018 - 10/2021
- Skilled in friction material formulation development for brake pads and linings of passenger and commercial vehicles, sintered brake pads and railway brake blocks.
  - Worked on eco-friendly new friction material developmental projects for OE market and friction proposal projects for Maruti Suzuki India Ltd., Hyundai, Tata Motors etc
  - Worked on raw material localization, cost effective friction material development and new vendor development.
  - Worked with Japanese engineers for NVH & failure analysis of brake pads
  - The major focus is on development, Tribo-evaluation & NVH analysis of non-asbestos organic and Copper-free brake-pads, linings etc. for passenger and commercial vehicles.
  - Skilled in raw material and finished products characterization.
  - Skilled in new friction material development for aftermarket.

### **Research Projects**

- Following research projects were handled apart from daily routine work at Rane Brake Lining Ltd
- Analysis of disc rotor chemistry and microstructural effect on performance of brake pads
- Influence of pad profile on compressibility
- Failure analysis of pads like cracks, metal pick-up etc
- Development of Aramid and Copper free formulations for brake pad applications
- Aftermarket customer complaint (noise) analysis of brake pads.

### **Ph.D. Research Scholar**

**Indian Institute of Technology - Delhi, India (4 years)**

- 06/2014 - 08/2018
- Strong research professional with a Doctor of Philosophy (Ph.D) focused on Development & Tribo-evaluation of Eco-friendly NAO Friction Materials for Brake-Pads from IIT Delhi.
  - Worked on development, Tribo-evaluation & NVH analysis of non-asbestos organic and Copper-free brake-pads, linings etc. for passenger and commercial vehicles
  - Developed new Cu free friction materials and published 9 international research papers in high impact journals and 6 papers in international renowned conferences.
  - Analysis and handling experience of following equipment's at IIT Delhi
    - Brake Inertia Dynamometer
    - Scanning Electron Microscope with EDAX facility
    - Customized Brake Test Rig
    - Surface Roughness Profilometer
    - Compression Moulding Machine
    - Tribometer for evaluating wear in adhesive and abrasive modes
    - Raman Spectroscope
    - Laser Flash Thermal Conductivity Instrument
    - Dynamic Light Scattering Particle Size Analyzer

### **Assistant Professor**

**Maharashtra Institute of Technology, College of Engineering - Pune, India (1 year)**

06/2013 - 05/2014

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## EDUCATION

August 2018

### **Ph.D. Industrial Tribology**

**Indian Institute of Technology** - Delhi, India

Supervisors: Prof. Jayashree Bijwe, Prof. Sujeet K. Sinha

CGPA: 9/10

- Dissertation in [Development of Cu free NAO Brake Pads]

June 2013

### **M.Tech Mechanical Engineering**

**Sardar Vallabhbhai National Institute of Technology** - Surat, GJ, India

CGPA: 9.26/10

- Dissertation in [Performance improvement of Bearing Materials]

June 2011

### **B.E Mechanical Engineering**

**Sanjivani College of Engineering** - Kopargaon, MH, India

GPA: 70.6, First class with Distinction

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## ACCOMPLISHMENTS

- Streamlined workflow by consolidating lengthy processes and implementing proper documentation which resulted in more effective and timely completion of business support requests.
- Built and nurtured key customer relationships to grow profit and gaining business.
- Recognized by management for cost saving projects delivering outstanding performance with increased net profit.
- Got BEST PRESENTATION AWARD in 'ICTIE 2017: 19th International Conference on Tribology and Interface Engineering' at Rydges Sydney Central Sydney, Australia on 4-5 December 2017.
- Worked as an organizing member in AUTO CAD competition in 2009-10 and 2010-11 at SRES COE, Kopargaon.

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## PUBLICATIONS

### **Publications in International Journals (9)** \_\_\_\_\_

**1)** N Aranganathan, V Mahale, J Bijwe, "Effects of aramid fiber concentration on the friction and wear characteristics of non-asbestos organic friction composites using standardized braking tests", *Wear*, pp. 69-77, vol. 354, 2016.

**2)** V Mahale, J Bijwe, S Sinha, "Influence of nano-potassium titanate particles on the performance of NAO brake-pads", *Wear*, pp. 727-737, vol. 376, 2017.

**3)** V Mahale, J Bijwe, S Sinha, "Application and comparative study of new optimization method for performance ranking of friction materials", *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, pp. 143-154, vol. 232, 2018.

**4)** V Mahale, J Bijwe, S Sinha, "Studies on friction mechanism of NAO brake-pads containing potassium titanate powder as a theme ingredient", *SAE International Journal of Materials and Manufacturing*,

pp. 43-56, vol. 11 (1), 2018.

**5)** V Mahale, J Bijwe, S Sinha, "A step towards replacing copper in brake-pads by using stainless steel swarf", *Wear*, pp. 133-142, vol. 424, 2019.

**6)** V Mahale, J Bijwe, S Sinha, "Efforts towards green friction materials", *Tribology International*, pp. 196-206, vol. 136, 2019.

**7)** MMA Abdel-Latif, NSM El-Tayeb, V Mahale, J Bijwe, "The effect of wollastonite silane-treatment on mechanical and tribological performance of NAO brake-pads", *International Journal of Surface Science and Engineering*, pp. 293-316, vol. 13 (4), 2019.

**8)** V Mahale, J Bijwe, "Exploration of plasma treated stainless steel swarf to reduce the wear of copper-free brake-pads", *Tribology International*, pp. 106-111, vol. 144, 2020.

**9)** V Mahale, J Bijwe, "Role of thermal conductivity in controlling the tribo-performance of non-asbestos organic brake-pads", *Journal of Composite Materials*, pp. 4145-4155, vol. 54 (27), 2020.

### **Publications in International Conferences (6)**

**1)** V. Mahale, J. Bijwe, S. Sinha, "Exploration of Stainless Steel (SS) Swarfs as A Replacement of Copper in NAO Friction Materials" presented in 'EuroBrake' at World Forum centre The Hague, Netherlands on 22-24 May 2018.

**2)** Vishal Mahale, Jayashree Bijwe, Sujeet K Sinha, "Stainless Steel Swarfs for Replacement of Copper in Non-Asbestos Organic Brake-Pads" presented in '19th International Conference on Tribology and Interface Engineering' at Rydges Sydney Central Sydney, Australia on 4-5 December 2017.

**3)** V. Mahale, J. Bijwe, S. Sinha, "Optimized Amount of Potassium Titanate Powder for Best Tribo-performance of NAO Friction Materials" presented in 'EuroBrake' at International congress centre Dresden, Germany on 2-4 May 2017.

**4)** Vishal Mahale, Jayashree Bijwe, Sujeet Sinha, "Influence of nano-potassium titanate particles on tribo-performance of NAO friction materials" presented in 'National Tribology Conference (NTC- 2016)' at IIT (BHU) Varanasi, India on 8-10 December 2016.

**5)** Vishal Mahale, Jayashree Bijwe and Sujeet Kumar Sinha, "Influence of Nano Potassium Titanate Powder on the Performance of NAO Brake-Pads" accepted in 'WOM-2017' at Hilton Long Beach, California, USA on 26-30 March 2017.

**6)** Vishal Mahale, Jayashree Bijwe and Sujeet Kumar Sinha, "Studies on Friction mechanism of NAO brake-pads containing Potassium Titanate Powder as a theme ingredient" accepted in 'SAE Brake Colloquium & Exhibition - 35th Annual' at Orlando, Florida, USA on 24-27 Sep. 2017.