

K VISHWANATH

Assistant Professor; Materials and Metallurgical Engineering; MANIT-Bhopal, India.

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Education:

- Ph.D. in Materials science and Engineering, IIT Kanpur, Kanpur, India Aug 2017- Aug 2024.
(9.0/10 CGPA)
(**Ph.D. Thesis Title:** “The Effect of microstructures on the atmospheric and splash zone corrosion behavior of the mild steel”)
- M Tech in Metallurgical and Materials Engineering, IIT Kharagpur, Kharagpur, India Aug 2015- May 2017
(8.5/10 CGPA)
- B Tech in Metallurgical Engineering, JNTUH College of Engineering Hyderabad, India Aug 2010- April 2014
(69.93 %)
- Intermediate (Class XII), Sri Chaitanya Junior College, Ongole, Andhra Pradesh, India June 2008-April 2010
(91.1 %)
- Secondary Education S.S.C (Class X), Bhashyam Public School, Hyderabad, India 2008
(87.83 %)

Research Experience:

- Working as Institute Postdoctoral Fellow (IPDF) at IIT Kharagpur (Feb 2026 to April 2026).
- Summer Intern in Defence Metallurgical Research Laboratory (DMRL), Hyderabad, 500058 (Dec 2013 to April 2014).
- Summer Inter in Defence Metallurgical Research Laboratory (DMRL), Hyderabad, 500058 (April 2013 to June 2013).

Research Interests:

- Corrosion, Sustainable coatings, Heat treatment of Steels and Alloy design.

Teaching Experience:

Working as an Assistant Professor at MANIT Bhopal (From May 2026 to till now)

Working as an Ad-hoc Faculty at NIT Andhra Pradesh (From July-2025 to Jan 2026)

Working as an Ad-hoc Faculty at NIT Andhra Pradesh (From Aug-2024 to May 2025).

UG Courses Taught (till now)

- Structure, Properties and Characterization of Materials
- Corrosion Engineering
- Phase Transformations and Heat Treatment
- Mechanical Behavior of Materials
- Materials for Automobiles and Aerospace Materials

Publications:

- **K. Vishwanath**, SS Singh, K Mondal, “Development of a simulated marine environment device for studying the simulated splash zone corrosion behavior of materials” *Ocean Engineering* (2025).
- **K. Vishwanath**, B Bhushan, SS Singh, K Mondal, “Atmospheric corrosion behavior of ferritic-pearlitic, spheroidized, and bainitic microstructures made from a mild steel” *Materials Today Communications* (2024).
- **K. Vishwanath**, SS Singh, K Mondal, “Atmospheric corrosion behavior of mild steel with different cooling modes after austenitization” *Journal of Materials Engineering and Performance* (2024).
- **K. Vishwanath**, Harikrishna Kancharla, SS Singh, K Mondal “Effect of Martensitic and Tempered martensitic microstructures on the Atmospheric Corrosion Behavior of Mild Steel” *Journal of Materials Engineering and Performance* (Accepted).
- Athikamsetty Sumanth, **K. Vishwanath**, Subrata Mukherjee, K. Mondal, Kancharla Hari Krishna, “Corrosion performance of X70 and X80 line pipe steels in a simulated concrete pore solution (SCPS) contaminated with 3.5 wt. % NaCl” *Bulletin of Materials Science* (2025).
- Arun Rajput, Gulshan Verma, A P Harsha1, **K. Vishwanath**, J. Ramkumar, K. Mondal, “Microstructural Tailoring for Enhanced Wear Resistance and Improved Mechanical Properties in High Carbon Rail Steel” *Journal of Materials Engineering and Performance* (2025)
- Harikrishna Kancharla, **K. Vishwanath**, G. K. Mandal, Nisheeth Kr. Prasad, B. Bhushan, Kirtiratan Godbole, S. S. Singh, K. Mondal, “Effect of inter-critical annealing atmosphere on microstructure and subsequent corrosion behavior of hot-dip galvanized Mn containing high-strength steel”, *Journal of Applied Electrochemistry* (2024).

- Bhushan, B., **K. Vishwanath**, A. Banerjee, Subodh Nath Patel, Debdipta Banik, Kirtiratan Godbole, Saikat Mandal, and K. Mondal. "Electrochemical response and passivation affinity of Fe-based amorphous HVOF coatings prepared from pig iron on mild steel." *Surface and Coatings Technology* (2023).
- Samanta, Santigopal, **K. Vishwanath**, K. Mondal, Monojit Dutta, and Shiv Brat Singh. "Electroless Amorphous NiP Coatings Over API X70 Steel: Resistance to Wear and Hydrogen Embrittlement." *Metals and Materials International* (2022).
- Setia, Prince, **K. Vishwanath**, K. Mondal, T. Venkateswaran, Sudhanshu S. Singh, and Shashank Shekhar. "Cushioning effect of austenite in silicon stainless steels (SiSS) leading to improved wear resistance." *Tribology International* 173 (2022).

Patents Grant:

- Mr. Santigopal Samanta, Mr. Atanu Banerjee, Ms. Charu Singh, Mr. Manindra Manna, Mr. Manojit Datta, Mr. Amar Nath Bhagat, Mr. **K Vishwanath**, Dr. Kallol Mondal, Mr. Shiv Brat Singh “Nickel Based Amorphous Coating for Line Pipe Steel, for Preventing Atmospheric Corrosion and Hydrogen Embrittlement” **Indian Patent grant no: 514088.**
- Mr. Santigopal Samanta, Ms. Charu Singh, Mr. Monojit Dutta, Mr. **K Vishwanath**, Dr. Kallol Mondal, Mr. Shiv Brat Singh “Nickel Based Amorphous Coating for Line Pipe Steel, for Prevention of Atmospheric Corrosion and Hydrogen Embrittlement” **Indian Patent grant no: 516119.**
- Mr. Santigopal Samanta, Ms. Charu Singh, Mr. Monojit Dutta, Mr. **K Vishwanath**, Dr. Kallol Mondal, Mr. Shiv Brat Singh “Nickel Based Amorphous Coating for Line Pipe Steel, for Prevention of Atmospheric Corrosion and Hydrogen Embrittlement” **Indian Patent grant no: 552806.**

Reviewer:

- Scientific Reports, Journal of Bio- and Tribo-Corrosion,

Conferences (Nationals and Internationals):

- Poster presentation on “Rapid assessment of corrosion susceptibility of mild steel in simulated splash zone condition”, *EUROCORR 2022*, Berlin, Germany, 28 August-01 September 2022.

- Oral presentation on “Effect of heat treatment on the pearlite variants of mild steel exposed to the atmosphere for 3 years”, *International Conference on Corrosion and Coatings (i3C)*, CSIR-NML, Jamshedpur, 07-08, December 2022.
- Oral presentation on “Effect of microstructures on the atmospheric corrosion behavior of the mild steel exposed for 3 years, *PADARTH*, IIT Kanpur, 18-19 Feb 2023.

Technical Skills:

- **Materials & Mechanical Characterization:**
Optical Microscopy, Scanning Electron Microscopy (SEM), Energy-Dispersive Spectroscopy (EDS), Raman Spectroscopy, FTIR, Optical Profilometry.
- **Corrosion Testing & Electrochemistry:**
Electrochemical techniques including OCP, LPR, EIS, and Tafel polarization; Atmospheric corrosion studies; Simulated splash zone corrosion testing (custom-designed marine corrosion setup).
- **Data Analysis & Software:**
Origin Pro, ImageJ; Data interpretation and visualization for electrochemical and microstructural datasets.
- **Microcontroller & Programming:**
Arduino microcontroller programming.

Extra-curricular activities:

- Served as a Member of Hall Executive Committee (HEC) at IIT Kanpur (2018-2019).
- Participated in the Special Camping Program at Hyderabad of National Service Scheme (NSS), 13 April 2011 to 19 April 2011.
- Participated in National Cadet Corps 2 (A) Air Sqn (Tech) NCC Annual Training Camp at Secunderabad, August 2011.