University College of Engineering, Thirukkuvalai,
(A Constituent College of Anna University, Chennai)

FACULTY PROFILE

Name: Dr. Karmuhilan M

Designation: Assistant Professor

Department: Mechanical Engineering

Institution: University College of Engineering Thirukkuvalai

Date of Joining: 02-12-2025

E mail: karmuhilanmar@gmail.com

EDUCATION

Degree	Specialization	Institution	Year
Ph.D.	Additive Manufacturing	National Institute of Technology, Tiruchirappalli	July 2018-March 2024
MTech	Manufacturing Engineering	National Institute of Foundry and Forge Technology, Ranchi	July 2015-July 2017
B.E	Mechanical Engineering	CARE Group of Institutions	2010 - 2014

PROFESSIONAL EXPERIENCE

Assistant Professor

University College of Engineering Thirukkuvalai | Dec 2025 – Present

Assistant Professor

SRM Institute of Science and Technology, Tiruchirappalli Campus | April 2024 – Nov 2025

RESEARCH PUBLICATIONS

[1] Karmuhilan M. Quantitative Analysis of Heat Accumulation and Cooling Rate Effects on Microstructural Development and Mechanical Properties of Inconel 718 in Wire and Arc Additive Manufacturing. J Mater Eng Perform 2025. https://doi.org/10.1007/s11665-025-11005-y.

[2] Karmuhilan M, Kumanan S, Kannan MV. Orientation-Induced Anisotropy, Failure Mechanisms, and Corrosion Behavior of Wire and Arc Additively Manufactured Nickel-BasedSuperalloy Structure. J Mater Eng Perform 2025. https://doi.org/10.1007/s11665-025-

12421-w.

[3] Karmuhilan M, Kumanan S. Effect of Inter-pass Layer Temperatures on Microstructure and Mechanical Properties of Inconel 625 Fabricated Using Wire and Arc Additive Manufacturing. J Mater Eng Perform 2024. https://doi.org/10.1007/s11665-024-09148-5.

[4] Karmuhilan M, Kumanan S. Mechanical Anisotropy and Failure Analysis of Inconel 625 Parts Manufactured Using Wire and Arc Additive Manufacturing (WAAM). J Fail Anal Prev 2024. https://doi.org/10.1007/s11668-024-01860-7.

[5] Karmuhilan M, Kumanan S. Location-dependent microstructure analysis and mechanical behavior of inconel 625 using Cold Metal Transfer(CMT) based wire and arc additive manufacturing. Vacuum 2023;207. https://doi.org/10.1016/j.vacuum.2022.111682.

[6] Karmuhilan M, Somasundaram K. Microstructural features and corrosion behavior of Inconel 625 components fabricated using Wire and Arc Additively Manufacturing (WAAM). Weld Int 2023;37:617–25. https://doi.org/10.1080/09507116.2023.2269087.

[7] Karmuhilan M, Kumanan S. A Review on Additive Manufacturing Processes of Inconel 625. J Mater Eng Perform 2022;31:2583–92. https://doi.org/10.1007/s11665-021-06427-3.

[8] Karmuhilan M, Kumar A. Intelligent process model for bead geometry prediction in WAAM. Mater Today Proc 2018;5:24005–13. https://doi.org/10.1016/j.matpr.2018.10.193.

CONFERENCES & WORKSHOPS

- Presented a paper at the "International Conference on Advances in Materials and Manufacture Applications" at Amrita University, Bengaluru.
- Participated in the "International Conference on Advances in Materials and Manufacturing" at the National Institute of Foundry and Forge Technology, Ranchi.
- Participated in the "National Workshop on Advances in Manufacturing Engineering" held at the National Institute of Foundry and Forge Technology, Ranchi.

LANGUAGES

- ✓ English: Professional
- ✓ Tamil: Native