



## Centre for Research & Development

### Research Supervisor (Guide) Profiles

Discipline of Supervision: **Mathematics**



#### **Dr. Mamatha S Upadhya**

Associate Professor  
Institute of Management  
School of Computational, & Physical Sciences

#### **Areas of Specialisation:**

Fluid Dynamics

Dr. Mamatha S. Upadhya obtained her Ph.D. from Visvesvaraya Technological University, Belagavi, Karnataka, with her doctoral research titled “Heat and Mass Transfer Analysis in Dusty Non-Newtonian Nanofluids.” She brings over 26 years of teaching experience in higher education and possesses extensive expertise in thermal sciences and fluid dynamics. She has published more than 70 research papers in reputed Scopus- and SCI-indexed journals and has contributed 12 book chapters. She is also the author of the book “Micro and Nanofluid Convection with Magnetic Field Effects for Heat and Mass Transfer Applications using MATLAB®,” published by Elsevier. Her research contributions are widely recognized, with over 1,287 citations and an h-index of 21. She actively serves as a reviewer for several peer-reviewed international journals, reflecting her strong engagement with the global research community. Her areas of research include nanofluids, non-Newtonian fluids, dusty fluids, hybrid nanofluids, heat transfer in fins, and applications of fuzzy logic in thermal systems. With her strong academic background, extensive research output, and domain expertise, she is well-qualified to guide doctoral research scholars in heat and mass transfer and related interdisciplinary fields.

#### **Selected Publications:**

1. Kumar, M. D., **Mamatha, S. U.**, Masood, K., Shah, N. A., & Yook, S.-J. (2026). Gradient Descent-Based Prediction of Heat-Transmission Rate of Engine Oil-Based Hybrid Nanofluid over Trapezoidal and Rectangular Fins for Sustainable Energy Systems. *Computer Modeling in Engineering & Sciences*, 146(1), 1–10. <https://doi.org/10.32604/cmescs.2025.074680>
2. Kumar, M. D., **Upadhya, S. M.**, Ali Shah, N., Raju, C. S. K., & Yook, S.-J. (2025). Adaptive neuro-fuzzy inference system prediction of thermal transport in Casson ternary hybrid nanofluid thin film flow for biomedical applications. *AIMS Mathematics*, 10(11), 27381–27411. <https://doi.org/10.3934/math.20251204>
3. Shah, N. A., **Mamatha, S. U.**, & Raju, C. S. (2025). Axisymmetric flow in an expanding and contracting Darcy radiated walls with suspension of composite-solid nano mixtures of various conductivity and viscosity models: A simple linear regression analysis. *ZAMM - Journal of Applied Mathematics and Mechanics / Zeitschrift Für Angewandte Mathematik Und Mechanik*, 105(3). <https://doi.org/10.1002/zamm.202300397>