Bijish Babu

Aerobase Innovations AB

ISAM
2025

Topic

AI-driven Multi-physics Modeling: Advancing Additive Manufacturing for Accuracy, Efficiency, and Sustainability

Multi-physics modeling in additive manufacturing integrates thermal, mechanical, metallurgical, and fluid dynamics to optimize process control and material performance. High-fidelity data handling, real-time process adaptation, and cross-disciplinary integration are key challenges. AI-driven agents enhance simulations by automating parameter tuning, predicting defects, and enabling adaptive control. These intelligent systems streamline workflows, improve accuracy, and drive efficient, sustainable AM innovations.

About the Speaker

Expert in computational mechanics & material science with extensive experience in FE simulations, material modeling, and manufacturing process optimization. Founder of Aerobase Innovations AB, specializing in multi-physics modeling for additive manufacturing, advanced material simulations, and the development of physics-based material models for industrial applications. Holds a Ph.D. in Material Mechanics from Luleå University of Technology, Sweden, and a M.Sc. from the Royal Institute of Technology, Sweden. Fluent in English, Malayalam, Tamil, and Hindi.