



Technology
Innovation Hub
IITG TIDF

Faculty Development Programme on

Experimental, Simulation, and
Programming-Based Approaches in Additive
Manufacturing
(Online mode)



18th December – 23rd December 2025

Indian Institute of Technology Guwahati

Organized by

Indian Institute of Technology Guwahati
Technology Innovation & Development Foundation

Website

<https://iitg.ac.in/tihue/>



Contents

- **Introduction to Additive Manufacturing**
Fundamentals of AM processes, evolution of 3D printing, and applications across metals, polymers, and ceramics.
- **CAD Modelling & STL Preparation**
Essentials of 3D modelling, STL editing/repair, slicing workflows, and design preparation using open-source tools.
- **Simulation in Additive Manufacturing**
Introduction to FEA, CFD, thermal-mechanical simulations, and predictive modelling of AM processes.
- **Metal & Powder-Based AM Technologies**
Fundamentals of powder metallurgy, powder handling, sintering principles, and advanced metal AM systems.
- **Biomedical Implant Design & Printing**
Case studies on implant modelling, material selection, and AM-based fabrication for healthcare applications.
- **AM Pravah – Industry Interaction Sessions**
Expert lectures, demonstrations, and insights from academic and industrial leaders.
- **Pallet-Based & Hybrid AM Systems**
Overview of pallet-supported AM, hybrid manufacturing concepts, benefits, and implementation challenges.



Objective

This 5-day online workshop provides a comprehensive overview of Additive Manufacturing (AM) by integrating fundamental concepts, digital design tools, simulation techniques, and material-specific applications. Delivered by academic experts and industry professionals, the program aims to strengthen both conceptual understanding and practical skills in modern AM technologies.

Key themes of the workshop include:

- Introduction to Additive Manufacturing
- CAD Modelling & STL Preparation
- Simulation in Additive Manufacturing
- Metal & Powder-Based AM Technologies
- Biomedical Implant Design & AM Fabrication
- AM Pravah – Industry Interaction Sessions
- Pallet-Based & Hybrid AM Systems

Contact details

Coordinators: Dr. Biranchi Panda,

Mr. Rahul Kumar Choubey

Contact No.: 8109990353

E-mail: pandabiranchi@iitg.ac.in

rahulchoubey@tih.iitg.ac.in



About IIT Guwahati

Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments and five interdisciplinary academic centres covering all the major engineering, science and humanities disciplines, offering BTech, BDes, MA, MDes, MTech, MSc and PhD programmes.

About IITG-TIDF

IITG-TIDF is the nodal center driving activities in Cyber-Physical Systems and Technologies for underwater exploration. Collaborating with 24 other TIHs, it leverages leading-edge knowledge and facilities, fostering nationwide research, innovation, and technology development. With 41 faculty members and international partnerships, including New York University and Taiwan Ocean Research Institute, TIH, IITG-TIDF is a hub of industry professionals and experts. Currently, the team comprises 60 members, seamlessly blending technical expertise and management skills for impactful outcomes.

Who can apply?

Students, researchers, faculty members, and industry professionals in Mechanical Engineering and hobbies interested in additive manufacturing

How to apply?

Fees:

₹ 1180 : Student / Research Scholars/Faculty Member

₹ 1770 : Industry Professional

Certification: Participants who attend and successfully complete the FDP will receive a certificate.

For NEFT:

A/C Name: IIT Guwahati, TIDF

Account No.: 8652101030401

IFSC Code: CNRB0008652

Registration link: [Click Here](#) / Scan QR



Resource Person

- Prof. Prashant Kumar Jain (IIITDM Jabalpur)
- Dr. Biranchi Panda (IIT Guwahati)
- Prof. Pavan Kumar Kankar (IIT Indore)
- Dr. Pawan Sharma (IIT BHU)
- Dr. Mohammad Taufik (NIT Bhopal)
- Dr. Narendra Kumar (NIT Jalandhar)
- Dr. Ankit Nayak (UPES Dehradun)
- Dr. Jitendar Kumar Tiwari (IIITDM Jabalpur)
- Dr. Vishal Franics (LPU)
- Mr. Piyush Ukey (Nu Ossa Mediquip Pvt Ltd)
- AM PravaH (Paanduv Applications team)
- Mr. Rahul Kumar Choubey (TIH IIT Guwahati)

Outcomes

The FDP aims to enhance participants' proficiency in experimental, simulation-based, and programming-oriented approaches for Additive Manufacturing. It provides foundational knowledge of AM processes, CAD and STL preparation, and MATLAB-based modelling techniques. The program introduces relevant FEA and CFD simulation methods, process optimization principles, and practical case studies in metal and biomedical AM. Participants will also gain exposure to condition monitoring practices and hybrid AM systems. Overall, the FDP strengthens research capabilities and prepares attendees for advanced work in modern manufacturing technologies.

Workshop organizers

Patron

Prof. Devendra Jalihal (Director, IIT Guwahati)

Chair Person

Prof. Santosha K. Dwivedy
(Project Director, IITG-TIDF)

Co-Chair Person

Mr. N N Dutta (CEO, IITG-TIDF)

Coordinators

Dr. Biranchi Panda
Mr. Rahul Kumar Choubey

