## About Department of Mathematics, IIT Kharagpur



The Department of Mathematics, IIT Kharagpur, is one of the founding departments of the Institute, established at its inception. The department has earned wide recognition in Applied Mathematics and Mathematical Sciences, with active research groups in PDEs, numerical analysis, fluid mechanics, scientific machine learning, and mathematical modelling. It offers comprehensive academic programmes for students and researchers, and serves as an intellectual hub for interdisciplinary collaboration across engineering and science.

## IIT Kharagpur — Platinum Jubilee

In celebration of the Institute's **75th Platinum Jubilee**, the Department of Mathematics is organising this flagship international conference on Applied Mathematics, bringing together eminent researchers and early-career mathematicians from across the globe to showcase frontiers of the discipline — from classical analytical methods to modern AI-driven computational approaches.

## Publication

Selected papers presented at this conference will be published in a **special volume with Springer**.

## Accommodation

All participants will be accommodated in several guest houses and hostels on the IIT Kharagpur campus.

For further details visit:

Link: https://sites.google.com/view/icmaa-2026/home

# Mathematical Modelling, Analysis and Applications of AI in Applied Mathematics

**ICMA2026**

This conference aims to bring together leading researchers, mathematicians, and practitioners to present and discuss the latest advances in mathematical modelling, analytical techniques, and AI-driven computational methods. It covers both theoretical foundations and real-world applications across science and engineering, providing a platform for collaboration and intellectual exchange at the intersection of classical mathematics and modern machine learning.

> **Session Types:** Invited Talks by Eminent Researchers • Contributed Talks on Applied Mathematics and related disciplines • A special session on contributions to Applied Mathematics by IIT Kharagpur

## Conference Topics

### ▶ Mathematical Modelling & Interdisciplinary Applications

Fluid Mechanics; CFD applications; Micro & Nanofluidics; Biofluids; Energy harvesting; Climate modeling; Turbulent flow; Sedimentation Transport; Porous Media; Homotopy Analysis

### ▶ Theory of PDEs & Analysis

Nonlinear PDEs; Stochastic analysis; Variational methods; Regularity theory; Financial mathematics

### ▶ Numerical Analysis

Finite Volume & Finite Element Methods; Continuous Galerkin methods; Convergence analysis of AI-based solvers; Hybrid traditional-AI numerical schemes; Uncertainty quantification

### ▶ Optimization & Control

Optimal control of PDEs; Reinforcement learning in physical systems; Inverse problems

### ▶ Scientific Machine Learning (SciML)

Theoretical Foundations of PINNs; Deep Ritz methods; Vanilla DeepONets & Training DeepONets; Neural Operators (FNOs, DeepONets)

International Conference on

Mathematical Modelling, Analysis and Applications of AI in Applied Mathematics

ICMA2026

**Department of Mathematics**
Indian Institute of Technology Kharagpur
Kharagpur – 721302, India

### 🏆 ORGANISING COMMITTEE

**Prof. S. Bhattacharyya**
*Convenor*

**Prof. H. S. Mahato**
**Prof. N. Garg**
*Co-Convenors*

### 📅 IMPORTANT DATES

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|---|---|
| Conference Dates | **December 10 – 12, 2026** |
| Venue | **IIT Kharagpur, India** |

*Invited Talks • Contributed Talks •*
*Special Session on IIT KGP contributions to Applied Mathematics*

⭐ In Celebration of IIT Kharagpur's Platinum Jubilee ⭐

✉ Contact the organising committee
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www.iitkgp.ac.in/department/MA