

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Mayukh Paul
- **User Type:** [] Ph.D. Scholar [] Postdoctoral Researcher ☒ Bachelor's [] Masters
- **Institution Name:** Indian Institute of Technology, Kharagpur
- **Institutional Contact No:** 8218282050/+91-3222-260805
- **Research Topic:** Theoretical Modelling of fluid interactions

Software Request Details

- **Software Name:** COMSOL Multiphysics (Latest Version)
- **Justification for Software Request:**

Access to COMSOL Multiphysics is essential for conducting rigorous hydrodynamic theoretical modelling of fluid particles, as it enables the numerical solution of coupled governing equations such as the Navier–Stokes and continuity equations under complex boundary conditions. The software provides a Multiphysics environment where fluid flow, particle interactions, and transport phenomena can be simultaneously analysed with high precision. Its finite element framework allows accurate spatial and temporal resolution of velocity, pressure, and concentration fields, which are difficult to obtain analytically for real systems. Additionally, COMSOL's flexibility in geometry design and parameter variation supports systematic investigation and validation of theoretical models, making it a critical tool for advanced research in fluid mechanics and particle transport phenomena.

Guide/Supervisor Approval

I, Chirodeep Bakli (Guide/Supervisor Name),

- Confirm that the above-mentioned researcher is affiliated with our institution
- Have reviewed the software request and its relevance to the researcher's academic work
- Approve the software request for research purposes

Approval Confirmation

- I approve the software request
- The software aligns with the researcher's research objectives
- The request meets the institutional research guidelines

Guide/Supervisor Signature: _____

Date: 23/04/2026

Official Stamp/Seal:


सह प्राध्यापक / Associate Professor
उर्जा विज्ञान एवं अभियान्त्रिकी विद्यालय
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