I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher**: Saumyaranjan Tripathy
- **User Type**: [✓] Ph.D. Scholar [ ] Postdoctoral Researcher [ ] Bachelor's [ ] Masters
- **Institution Name:** National Institute of Technology Rourkela
- **Institutional Contact No**: 0661-246-2020
- **Research Topic**: Additive Manufacturing (Electroactive 4D Printing)

Software Request Details

- **Software Name**: COMSOL Multiphysics
- **Justification for Software Request**:

  The requested COMSOL Multiphysics software is needed for my research work in Electroactive 4D Printing under Additive Manufacturing. The software will be used to perform coupled Multiphysics simulations involving electrical, thermal, and structural behaviour of smart printed materials.

  My research work includes Joule heating analysis, electro-thermal coupling, temperature distribution, thermal deformation, and shape-changing behaviour of 4D printed structures under electrical stimulation. These simulations are important for understanding and optimizing the performance of smart materials and actuator systems for advanced engineering and space-related applications.

  COMSOL is essential for this research because it provides the required Multiphysics simulation environment needed to accurately analyse and develop these systems.

Guide/Supervisor Approval

I, Saroj Kumar Patel,

- 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: 22/5/26

Official Stamp/Seal:

Head of Department
Mechanical Engineering Department
NIT, Rourkela-769008, Odisha, INDIA