

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Vikash Mishra
- **User Type:** ☐ Ph.D. Scholar ☐ Postdoctoral Researcher ☐ Bachelor's ☒ Masters
- **Institution Name:** Indian Institute of Technology-Hyderabad (IIT-H)
- **Institutional Contact No:** +91-9110015189
- **Research Topic:** Control loop modelling of MEMS-based IMU

Software Request Details

- **Software Name:** COMSOL
- **Justification for Software Request:** COMSOL Multiphysics is essential for simulating and analyzing MEMS-based IMUs within a closed-loop control framework. It supports coupled physics modelling—critical for understanding the electromechanical behaviour of accelerometers, gyroscopes, and magnetometers under real-world conditions. The software allows precise modelling of structural deformation, electrostatics, thermal effects, and damping, enabling optimization at the design level. COMSOL's integration with MATLAB also supports control algorithm testing. This tool will significantly strengthen simulation accuracy, reduce fabrication iterations, and bridge the gap between theoretical and practical implementation.
- **Guide/Supervisor Approval**

I, Ashok Kumar Pandey (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: 08/08/2025

Official Stamp/Seal: [Space for Institutional Stamp]

Important Notes

1. This form must be signed and scanned
2. The scanned copy must be uploaded with the software request
3. Electronic signatures are acceptable if from an official institutional email

