

I-STEM Software Request - Guide Approval Form

User Details

- Name of Researcher: Manu Srivathsa
- User Type: ☒ Ph.D. Scholar ☐ Postdoctoral Researcher ☐ Bachelor's ☐ Masters
- Institution Name: Manipal Institute of Technology, MAHE, Manipal
- Institutional Contact No: 9448153177
- Research Topic: Photoconductivity and photocatalytic behaviour of spray pyrolyzed lanthanide ions doped zinc oxide thin films.

Software Request Details

- Software Name: COMSOL
- Justification for Software Request:

COMSOL Multiphysics is a crucial tool in my research, enabling simulation, modeling, and analysis of thin-film materials, optoelectronic devices, and photocatalytic systems.

Thin-Film Deposition & Defect Engineering: Simulates stress distribution, charge transport, and defect states in ZnO and lanthanide-ion-doped thin films.

Photocatalysis: Models light absorption, charge carrier dynamics, and reaction kinetics for optimizing ZnO-based photocatalysts in hydrogen and oxygen evolution reactions (HER/OER).

Optoelectronic Device Design: Simulates UV photodetectors, LDRs, and gas sensors, aiding in band structure analysis, carrier transport modeling, and photonic enhancements.

Gas Sensing & Surface Interactions: Models adsorption-desorption mechanisms and defect-induced conductivity variations, enhancing sensor performance.

Guide/Supervisor Approval

I, Dr. B V Rajendra,

- 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: 14/03/2025

Dr. B. V. RAJENDRA, M.Sc., Ph.D.

Professor

Department of Physics

Manipal Institute of Technology

MAHE, Manipal - 576 104

Official Stamp/Seal:

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