

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Shivani Lange
- **User Type:** Bachelor's
- **Institution Name** : Dr. Vishwanath Karad MIT World Peace University, Kothrud
- **Institutional Contact No:** 8766436960
- **Research Topic:** Designing Metasurfaces using Distributed Neural Network (DINN)

Software Request Details

- **Software Name:** COMSOL (Basic+Advanced Module)
- **Justification for Software Request:** COMSOL Multiphysics (basic module along with RF and Wave Optics advanced modules) will be used to simulate and analyze the electromagnetic response of metasurfaces at terahertz and optical frequencies. The software will enable accurate full-wave simulations of transmission and reflection spectra, parametric sweeps of geometrical variables, and modeling of material dispersion and near-field effects. The simulation data generated will be used to train and validate Distributed Neural Network (DINN) models for the efficient design of metasurfaces targeting applications in terahertz antennas and optical devices. High fidelity and spectral resolution achieved through COMSOL will be critical for ensuring the reliability of the machine learning models developed in this research.

Guide/Supervisor Approval

I, Dr. Prasad Joglekar,

- 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: Prasad Joglekar

Date: 26-04-2025

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

