

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Deepalakshmi M
- **User Type:** Ph.D. Scholar
- **Institution Name:** Vellore Institute of Technology, Vellore – 632 014, Tamilnadu, India
- **Institutional Contact No:** 04162243091
- **Research Topic:** Synthesis and Interfacial Engineering of Tailored Ferrite/Garnet–Polymer Nanocomposites for Mechanically Robust and Electronically Tunable Electromagnetic Interference (EMI) Shields

Software Request Details

- **Software Name:** COMSOL Multiphysics - RF Module, Composite Materials Module, CAD Import Module, Material Library, LiveLink™ for MATLAB, Structural Mechanics Module
- **Justification for Software Request:** COMSOL Multiphysics is required to support the computational investigation of ferrite/garnet–polymer nanocomposites for EMI shielding applications. The **RF Module** will be used to simulate electromagnetic-wave propagation, reflection, transmission, absorption, S-parameters and shielding effectiveness over the relevant frequency range. The **Composite Materials and Structural Mechanics Modules** will support modelling of different composite and multilayer architectures and evaluation of their mechanical behaviour. The **CAD Import Module** will facilitate the development and incorporation of complex geometries and Multiphysics structural configurations, while the **Material Library** will provide access to relevant material properties for the constituent phases of the nanocomposite. **LiveLink™ for MATLAB** will facilitate automated parameter studies, simulation-data processing and advanced analysis of simulation results. These modules together will enable an integrated experimental–computational approach for understanding and optimizing the electromagnetic, mechanical performance of the developed shielding materials.

Guide/Supervisor Approval

I, Sumangala T P, Assistant Professor Sr. Grade 2

- 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