

I-STEM SOFTWARE REQUEST – GUIDE APPROVAL FORM

User Details

- **Name of Researcher:** Bharath P K
- **User Type:** Ph.D. Scholar
- **Institution Name:** PES University, RR Campus, Bengaluru
- **Institutional Contact No.:** 08026721983
- **Research Topic:** Computational Study of Integer and Fractional Models in Fluid Flow and Heat Transfer Across Different Geometries

Software Request Details

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

The requested software is required to support my Ph.D. research in computational fluid mechanics, particularly for the numerical and computational investigation of fluid flow, heat transfer, mass transfer, magnetohydrodynamic (MHD) flows, non-Newtonian fluids, nanofluids, and fractional-order mathematical models. The software will be used to formulate and solve the governing mathematical equations, implement appropriate boundary conditions, perform numerical simulations, and analyse the resulting velocity, temperature, concentration, and other physical characteristics. The software will significantly support the development, validation, and interpretation of computational results obtained as part of my doctoral research.

Guide/Supervisor Approval

I, **Dr. Swetha D S**, Guide/Supervisor,

- 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

Guide/Supervisor Signature: _____

Date: 11/9/26

Official Stamp/Seal:

Department of Science & Humanities
PES University
100 Feet Ring Road, BSK III Stage
Bangalore-560035.