

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Dr Mahesh Kumar
- **User Type:** ☐ Ph.D. Scholar ☒ Postdoctoral Researcher (Faculty) ☐ Bachelor's ☐ Masters
- **Institution Name:** Pandit Deendayal Energy University
- **Institutional Contact No:** 7851992509
- **Research Topic:** Microfluidic MEMS Devices for Disease Diagnostics

Software Request Details

- **Software Name:** COMSOL Multiphysics

Justification for Software Request: The software enables realistic modelling of coupled physics—fluid flow, electrostatics, dielectrophoretic, and solid mechanics—critical for my research in microfluidics and sensor design. It supports:

- **Sensor Design & Optimization** – Simulating MEMS and biomedical sensors for improved efficiency and reliability.
- **Microfluidics & Cell Analysis** – Studying particle trajectories and dielectrophoretic separation of blood and cancer cells under realistic flow and field conditions.
- **Prototype Validation** – Reducing cost and time by testing multiple design iterations virtually before fabrication.
- **Healthcare Diagnostics** – Replicating biological environments to design devices for early cancer detection and antimicrobial resistance studies.

Guide/Supervisor Approval

I, Dr. Mahesh Kumar, Assistant Professor (ICT), PDEU Gandhinagar (Guide/Supervisor Name/Self),

- 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: 09/09/2025

Official Stamp/Seal:

