

I-STEM Software Request - Guide Approval Form

User Details

- **Name of Researcher:** Nikita Kumari
- **User Type:** Master's Student and Inventor
- **Institution Name** : Dhirubhai Ambani University (DAU)
- **Institutional Contact No:** (+91) 9890613053
- **Research Topic:** Atmospheric Water Harvesting

Software Request Details

- **Software Name:** COMSOL
- **Justification for Software Request:** We request access to COMSOL Multiphysics to carry out advanced Multiphysics simulations required for our ongoing research. Our work involves the interaction of heat transfer, water flow, and mass transport phenomena in a coupled environment. These processes cannot be accurately analysed through analytical methods or basic simulation tools because they require solving multiple dependent physics fields simultaneously.

COMSOL will enable me to:

- Simulate conjugate heat transfer under varying environmental conditions,
- Model vapor transport and phase-change behaviour,
- Study airflow and particle transport around custom geometries, and
- Evaluate material-level responses under thermal and mass-transfer gradients.
- These capabilities are essential for validating the fundamental physics of my system and optimizing its performance, without disclosing or relying on any proprietary aspects of the design.
- - The software will be used solely for academic research. This project is funded by the Government of Gujarat under the Student Startup and Innovation Policy (SSIP) 2.0 scheme, and supported through the incubation cell at the Dhirubhai Centre for Entrepreneurship and Innovation (DCEI), DAU. It was awarded to the student and inventor, Miss Nikita Kumari, under the Guidance of Dr. Vinay Palaparthi. Access to COMSOL will significantly strengthen the scientific rigor of the project.

Guide/Supervisor Approval

I, Vinay Palaparthi,

- 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: P. V. Srinivas

Date: November 25, 2025

