

I-STEM Software Request - Guide Approval Form

User Details

- Name of Researcher: Ramandeep Kaur
- User Type: ☒ Ph.D. Scholar ☐ Postdoctoral Researcher ☐ Bachelor's ☐ Masters
- Institution Name : Indian Institute of Science, Bangalore
- Institutional Contact No: 080 2293 2228
- Research Topic: Point-of-care Diagnostics

Software Request Details

- Software Name: COMSOL Multiphysics

Justification for Software Request:

I am requesting access to COMSOL Multiphysics software to support my research on immunoassay-based diagnostics using nitrocellulose lateral flow strips. My work involves studying and optimizing the transport and interaction of biomolecules within porous membranes used in point-of-care diagnostic devices.

COMSOL will enable simulation of coupled physical and biochemical processes such as capillary-driven fluid flow, diffusion, analyte transport, and antigen-antibody binding kinetics within the nitrocellulose membrane. These simulations are essential for understanding assay behaviour, optimizing strip design, improving sensitivity and specificity, and predicting assay performance under varying experimental conditions.

• Guide/Supervisor Approval

I, RIHUSHAN TOLEY (Guide/Supervisor Name),

- 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: _____

[Signature]

Date: _____

01/06/2026

प्रोफेसर / Professor

रासायनिक अभियांत्रिकी विभाग

Department of Chemical Engineering

भारतीय विज्ञान संस्थान / Indian Institute of Science

बैंगलुरु - 560012 / Bengaluru - 560012

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