

About the Workshop:

This workshop is organized by the School of Electronics Engineering, VIT, Vellore. The workshop will combine interactive lectures with practical MATLAB sessions, allowing participants to implement TMM algorithms from scratch and simulate real-world photonic devices. By the end of the workshop, participants will have gained the skills required to analyze multilayer optical systems, interpret photonic band structures, and develop computational models that are directly applicable to research and industry.

We believe this workshop will significantly benefit undergraduate, postgraduate, and doctoral students, as well as researchers working in optics, photonics, materials science, electronics, and related disciplines. It will provide a strong computational foundation and inspire participants to pursue advanced research in modern photonic technologies

Workshop Highlights:

Phase 1: Foundations of Transfer Matrix Method (TMM)

- Introduction to TMM
- Interaction of EM waves with layered structures
- Photonic Spin Hall effect in 2D material

Phase 2: Hands-on with MATLAB

- Introduction to MATLAB
- Coding of TMM using MATLAB
- Study of several layered structures using the TMM-based MATLAB

Phase3: Basics of Fiber Bragg Grating (FBG) and coupled mode theory

- Introduction to FBG
- Fabrication methods
- FBG as a temp. and pressure sensor
- FBG as a chemical sensor

Phase 4: Hands-on with MATLAB

- FBG Simulation
- FBG sensors using MATLAB

Advisory Committee:

Dr. M. Jasmine Pemeena Priyadarsini

Professor and Dean,
School of Electronics Engineering (SENSE),
Vellore Institute of Technology, Vellore, India.

Dr. Kannadassan. D

Professor and Head,
Department of Communication Engineering
SENSE, VIT, Vellore.

Coordinators

Dr. Yadvendra Singh, Asst. Prof. Sr. Grade 2
Dr. Monu Nath Baitha, Asst. Prof. Sr. Grade 1
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Resource Persons

Phase 1 & 2:

Dr. Monu Nath Baitha, SENSE

Phase 3 & 4:

Dr. Yadvendra Singh, SENSE

Registration fee:

UG | PG Students | Research Scholar | Academician
(VIT) : Rs. 200/- (inclusive of 18% GST)

UG | PG Students | Research Scholar | Academician
(Outside VIT) : Rs. 300/- (inclusive of 18% GST)

Registration Link: <https://events.vit.ac.in/>

Last Date for registration: 6th Sept. 2026

E-certificates will be distributed

Mode: Hybrid Platform

Venue: TT-144 (VIT Students)

Time: 10:00 AM to 1:00 PM

02:00 PM to 5:00 PM



One-Day National-Level Hands-on Workshop on

Modelling of Advanced Photonic Devices using MATLAB

(Hybrid Mode)

September, 7th 2026

**Organized by
Department of
Communication Engineering**

**School of Electronics
Engineering
VIT, Vellore.**

