



Module PMRF-ISSS008/II/2025

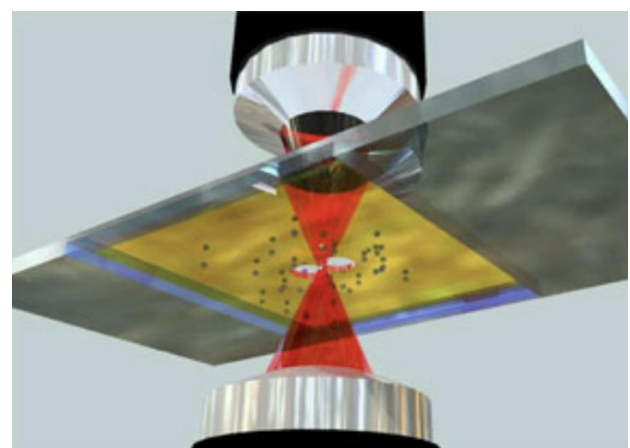
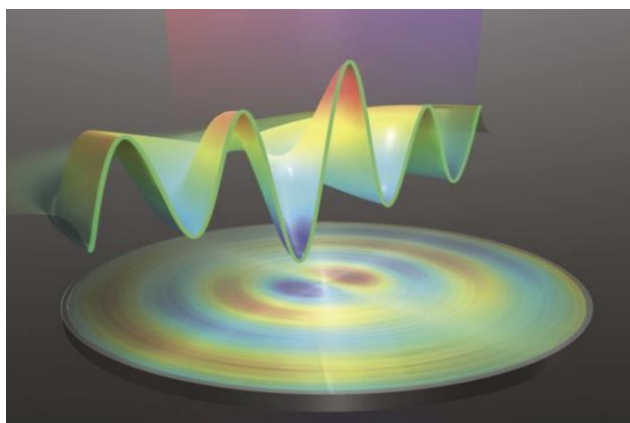
## Introductory course on Nano-optics

Name of the PMRF student

Souravi Mukherjee

Required background of the students taught

A basic understanding of optics and mathematical physics is essential. Well suited for undergraduates and postgraduates in physical sciences or engineering.



Details of the content of the module

The course will include –

- Concept building
- Developing Problem-solving skills
- Doubt-clearing discussions

The main topics to be covered are:

- Theoretical foundations: wave equations and constitutive relations
- Angular spectral representation of optical fields
- Understanding Evanescent fields
- Propagation and focusing of optical fields
- Gaussian Laser beams
- Light matter interactions
- Radiating dipoles
- Quantum emitters and Optically detected magnetic resonance
- Basic plasmonics
- Optical forces and optical tweezers

Schedule of the module

**Start Date:** 17<sup>th</sup> February 2025

**End Date:** 14<sup>th</sup> April 2025

**Schedule:** Monday (6pm -7:30pm)  
Thursday (5pm – 6:30pm)

**Total hours:** 25.5 hours

Meeting link : Will be shared later

[Link](#)

Contact email ID: [issf.forum@gmail.com](mailto:issf.forum@gmail.com)

Registration link:

<https://forms.gle/VXfyzuXihASzfeTR7>