



Module PMRF-ISSS072/2025

Nonlinear optics

Name of the PMRF student

Abhigyan Goswami

Required background of the students taught

Background in Physics or Engineering with a foundational understanding of electromagnetic theory, including Maxwell's equations.

Details of the content of the module

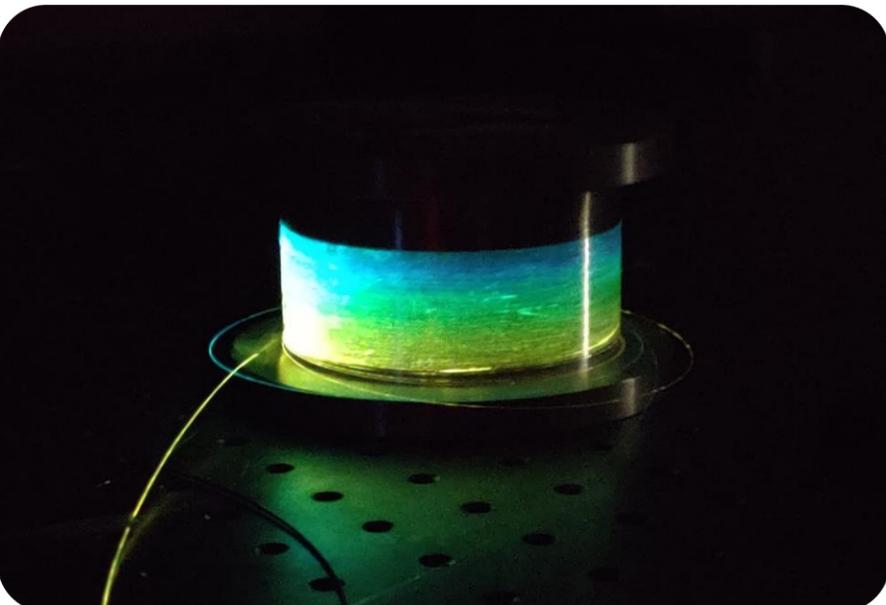
This advanced course explores the fundamental principles and practical applications of nonlinear optics, highlighting both second-order and third-order nonlinear effects. Throughout the course, basic Python simulations will be incorporated to help visualize nonlinear phenomena and reinforce theoretical concepts.

Module I: Fundamentals of Nonlinear Polarization

Module II: Three-Wave Mixing and Harmonic Generation

Module III: Nonlinear Optics in Waveguides and Fibers

Module IV: Stimulated Scattering and Inelastic Interactions



Schedule of the module

Start date: 30th August, 2025 (tentative)

End date: 6th December, 2025

Total hours: 30 hours.

Lecture upload schedule: Every Saturday at 3:00 PM.

Live classes schedule: To be scheduled later.

Meeting link : Will be shared later

Contact email ID: issforum@gmail.com

Registration link: [Click here](#)

