



Module: **PMRF-ISSS030/2025**

## Introduction to Light-Matter Interactions: Basics of spectroscopy

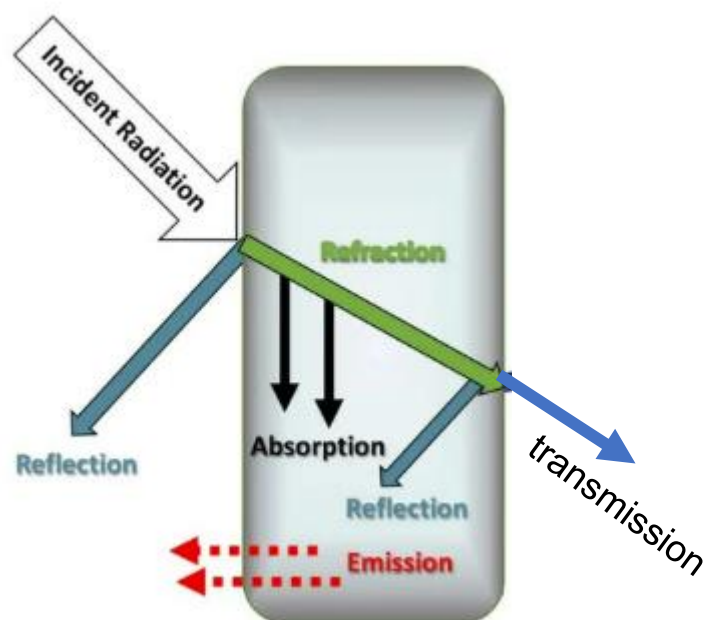
Name of the PMRF student

KAVYA S MONY

Details of the content of the module

### Required background of the students taught

Students from chemistry and physics discipline are welcome to join. The course would be useful for students giving JAM/GATE/NET exams in chemistry



Light-matter interactions are ubiquitous in nature. Photosynthesis is the best example. Like-wise, spectroscopy also refers to the interaction of electromagnetic radiation with matter. In this course, we cover the following topics:

- ❖ Introduction to light-matter interactions.
- ❖ Light or electromagnetic spectrum
- ❖ Introduction to atomic and molecular spectroscopy
- ❖ Microwave spectroscopy
- ❖ Infra-red spectroscopy
- ❖ Raman spectroscopy
- ❖ Electronic spectroscopy
- ❖ Spin resonance spectroscopy

Reference:

- Introduction to Molecular spectroscopy by Banwell
- Organic spectroscopy William Kemp

### Schedule of the module

Start date: 23/3/2025

Two recorded lectures of 1.5 hours duration will be uploaded every Sunday; 20 – 25 hours total.

Topics will be discussed, followed by problem-solving

Meeting link : Will be shared later

Contact email ID: [kavyamony@iisc.ac.in](mailto:kavyamony@iisc.ac.in)

Registration link:

<https://docs.google.com/forms/d/1IEuziVaHoTGqYQhB7aD1GCPivmTU8p0oqSiumdMqgol>