PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS109/II/2024

Topology in Condensed Matter Physics

Name of the PMRF student

TITHIPARNA DAS

Required background of the students taught

Basic Concepts on Quantum Mechanics Condensed Matter Physics

Online Session Coordinator

Will be chosen from the list of registrants

Details of the content of the module

This will be an introductory lecture series on basic topology and its relevance in various condensed matter systems . This course aiming to build a good understanding of the origin of symmetry and topology, topological invariants ,topological phases and surface states along with their experimental realization. The broad topics that will be coved are:

1. Introduction to Topology: Relevance of topology in condensed matter physics, symmetry & topology.
2. 2D Topological Material: Graphene & halden model, edge modes.
3. Topological Insulator: Inverted HgTe/CdTe quantum well,2D and 3D Topological Insulator, experimental tools.

Schedule of the module

Start Date : August 15, 2024

Live lectures will be conducted (or recorded lectures uploaded) on Saturday and Sunday from 8 PM to 9 PM (25 Lectures)

End Date : 30/01/2025(tentative)

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link: https://forms.gle/pju7UJekXWMydDu19