PMRF-ISSS Teaching Programme

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

Module PMRF-ISSS110/II/2024

Introduction to Band Theory

Name of the PMRF student

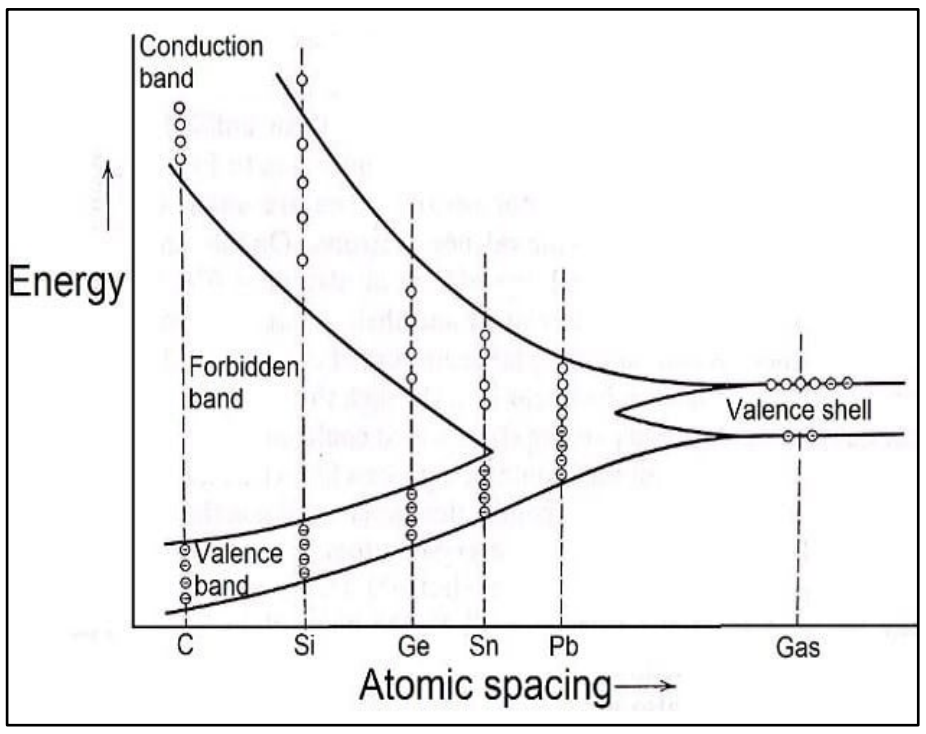
ARNAB DAS

Required background of the students taught

Basic knowledge of solid-state physics

Online Session Coordinator

Will be chosen from the list of registrants



Details of the content of the module

This will be a lecture series on an introduction to the band theory aiming to build a good understanding of the origin of band theory and the various models that were proposed to explain it. The course will also contain details on how to experimentally calculate or determine the band structure of real-life materials giving feel of real-life problems. The broad topics that will be covered are:

1. Introduction to Bloch States
2. Periodic Hamiltonian and periodic boundary condition
3. Kronig Penny Model
4. Tight Binding Model
5. Realization of band structure
6. Experimental techniques for band structure calculation and realization.

Schedule of the module

Start Date: 15.08.2024

Live lectures will be conducted (or recorded lectures uploaded) on Saturday from 8 PM to 9 PM and Sunday from 11 AM to 12 PM (25 Lectures)

End Date: 31.01.2025 (Tentative)

Total lecture hours : 50

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link:

https://forms.gle/PAU26z4J1hjAdAxz5