



Module PMRF-ISSS028/2022

Solid State Physics Concepts for Engineers - 1

Name of the PMRF student

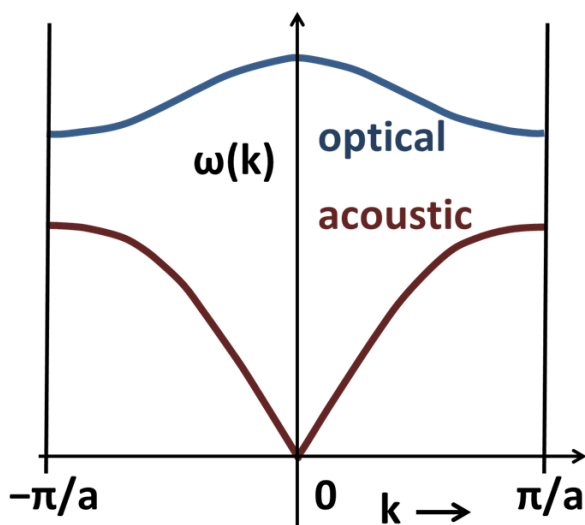
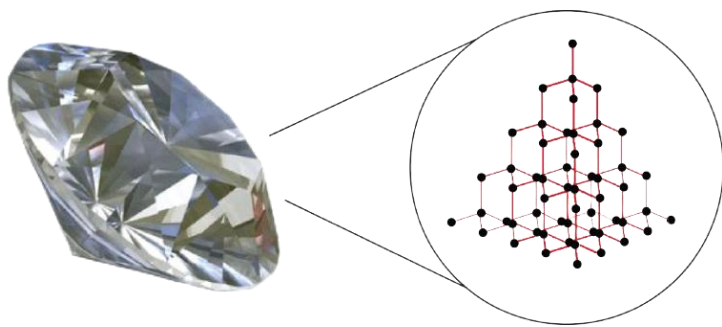
Nikhil Malviya

Required background of the students taught

There is no pre-requisite for the course. All are welcome.

Online session coordinator

Will be chosen from the list of registrants



Schedule of the module

Start date: 11th September 2022

Total number of classes: 12

Day and Time: Every Sunday, 6:00 PM – 7:00 PM
(+ 15 minutes for discussion and problem solving)

Mode of teaching: Online live classes

Details of the content of the module

This introductory solid state physics course deals with matter's macroscopic and microscopic properties, particularly solids. There are two parts to this course. In this first part of the course, we will cover:

- ✓ Introduction and Motivation
- ✓ Specific Heat of Solids: Boltzmann, Einstein, and Debye Model
- ✓ Electrons in Metals: Drude Theory and Sommerfeld Theory
- ✓ Chemical Bonding: Covalent, Ionic, and Metallic Bonding
- ✓ 1D Toy Model: 1D Monoatomic Chain, 1D Diatomic Chain, Tight Binding chain
- ✓ Crystal Structure and Reciprocal Lattice

Book: Solid State Physics by Ashcroft Neil and Mermin N. David

Meeting & WhatsApp group link: Will be shared after registration

Registration link:

<https://forms.gle/DAhe946zmUg7Gid49>



Contact email ID: issforum@gmail.com