



Module PMRF-ISSS005

# Semiconductor Theory

## Name of the PMRF student

RUPALI VERMA

## Required background of the students taught

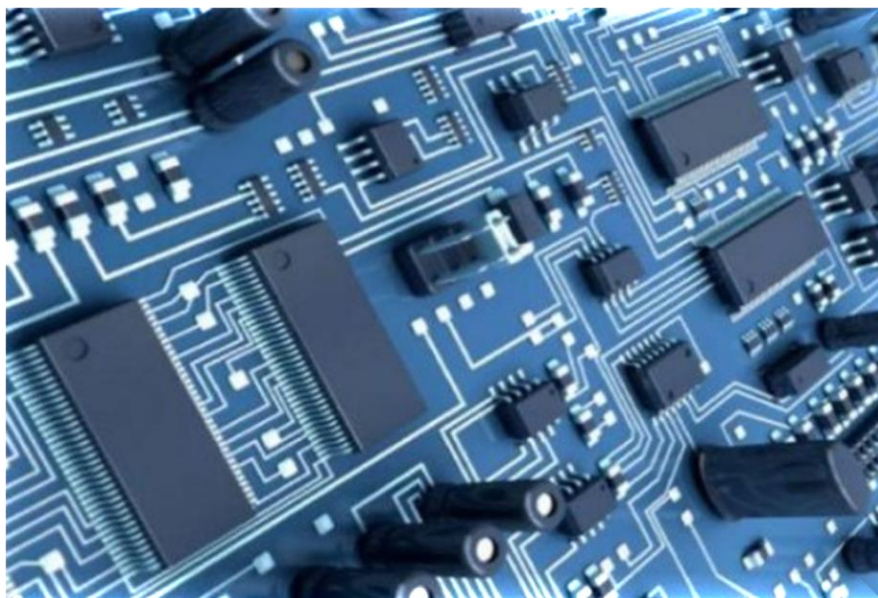
Undergraduate course: EE, ECE, Materials Engg., Physics and other related departments

## Faculty coordinator

Dr. Chirasree Roy Chaudhuri  
Associate Professor of Electronics and  
Telecomm. Engg., IEST SHibpur

## Online session coordinator

Rachith S N



## Details of the content of the module

### Lectures:

Week 1: Introduction

Week 2: Semiconductor in Equilibrium

Week 3: Carrier Transport Phenomena (Carrier Action)

Week 4 & 5: Non-equilibrium Excess Carriers in Semiconductors

Week 6: PN Junction Electrostatics

Week 7 & 8: PN Junction Diode

Week 9: Metal-Semiconductor Junction, Schottky Diodes and Semiconductor Heterojunction

Week 10: Field Effect Introduction and MOS Fundamentals

Week 11 and 12: Basics of MOSFET Operation

Week 13: MOSFET Additional Concepts

Week 14: Modern FET Structures

Week 15: Basics of Device Fabrication

Week 16: Optoelectronic Devices

## Schedule of the module

Start Date: 29th May 2021

End Date: 11th September 2021

Day: Lectures will be uploaded every Sunday

Time: 6 PM – 7 PM IST

Meeting link:

This will be a recorded session

Contact email ID: [iss.s.forum@gmail.com](mailto:iss.s.forum@gmail.com)

Registration link:

[https://docs.google.com/forms/d/19m\\_yswo7pGJvpor6XTTD-bl-ZvkGvaq6eoMWgHk2Bs0/edit?usp=sharing](https://docs.google.com/forms/d/19m_yswo7pGJvpor6XTTD-bl-ZvkGvaq6eoMWgHk2Bs0/edit?usp=sharing)