



## Special Topics in nanoelectronics

### Name of the PMRF student

Mohammad Ateeb Munshi

### Required background of the students taught

Electronics, Electrical, Physics, Material Sciences

### Online session coordinator

Will be chosen from the list of registrants



### Details of the content of the module

#### • Introduction

Semiconductors, History of semiconductors, Semiconductor Devices, Transistors, Diodes, BJTs.

#### • Evolution of Semiconductors

Semiconductors by generation, Large scale integration, LSI, ULSI, VLSI, fabrication techniques.

#### • MOSFETs

Structure, working principle, Short channel Effects.

#### • HEMTs

Structure, working principle, AlGaAs/GaAs HEMTs, GaN HEMTs.

#### • Graphene devices

Introduction, Graphene FETs, Graphene for RF devices.

#### • 2D materials

Introduction, 2D materials, 2d materials for quantum devices.

### Schedule of the module

Lectures will be uploaded on **Saturday** 8pm

Lectures will start from **1<sup>st</sup> January 2024 (Tentative)**

Course will end on April 10<sup>th</sup> 2024.

### Link

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

Registration link:

<https://forms.gle/ceapEyEtdZ2iiLrM9>