



Module PMRF-ISSS029/II/2024

## State-of-the-art Power Converter Design (Part-I)

### Name of the PMRF student

SURJAKANTA MAZUMDER

### Required background of the students taught

B.Tech/ M.Tech in Electrical Engineering. Basic understanding of Basic idea about Semiconductor Physics, Circuit Theory, and Power Electronics is necessary.

### Online session coordinator

Will be chosen from the list of registrants

### Details of the content of the module

This course is dedicated for Electrical Engineers who has keen interest in Power Electronic Converter Control.

#### Week 1-5: Semi-conductor Devices

- IGBT
- Si MOSFETs
- SiC Devices
- GaN Devices

#### Week 6-7: Concept of Switching

- Hard-switching
- Soft-switching
- Dead-time Selection

#### Week 7-8: Loss Estimation

- Switching Loss
- Conduction Loss

#### Week 9-10: Device Selection Methodology



### Schedule of the module

Start Date: 9<sup>th</sup> March 2024

End Date: 12<sup>th</sup> May 2024 (Tentative)

Weekly, Saturday and Sunday: 10 AM to 11.15 AM

(Lecture:10AM to 11AM Doubt Solving:11AM to 11.15AM)

Meeting link : Will be shared later

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

Registration link:  
<https://forms.gle/oYM266XN5onC5M137>