

# PMRF-ISSS Teaching Programme

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



Module PMRF-ISSS098/V/2025

## Dynamics of Advanced Grid Interfaces in EV and Data-Center Systems

### 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 1-4: Introduction to Solid-state Transformer (SST)

- Topology
- Modulation
- Application

#### Week 5-7: Introduction to Grid-following SST

- Control Architecture
- Dynamic Analysis

#### Week 8-10: Introduction to Grid-forming SST

- Control Architecture
- Dynamic Analysis



### Schedule of the module

Start Date: 11<sup>th</sup> October 2025

End Date: 14<sup>th</sup> December 2025 (Tentative)

- Regular Classes
  - Weekly, Saturday and Sunday: 10am to 11.15am (Lecture: 10am to 11am, Doubt Solving: 11am-11.15 am)
  - Make-up Class or Extra doubt-solving session (If Required)
    - Tuesday and Friday: 7pm to 8.15pm

Meeting link : Will be shared later

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

Registration link:  
<https://forms.gle/eF1x7p2zLjp2MePA8>