PMRF-ISSS Teaching Programme

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

Module PMRF-ISSS178/IV/2024

State-of-the-art Power Converters: Modulation and Control Techniques

Name of the PMRF student

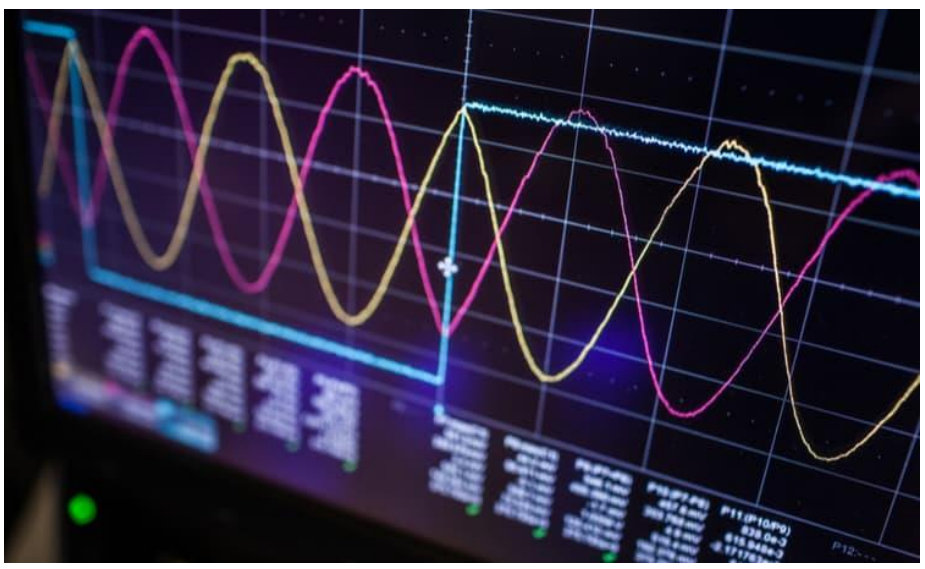
SURJAKANTA MAZUMDER

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 Electronicsis 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: Detailed Modulation of State-of-the-art Power Converters

a. Phase-shifted Full-Bridge (PSFB)
b. Dual-Active Bridge (DAB)

Week 5-6: Soft-switching Aspects of State-of-the-art Power Converters

a. Phase-shifted Full-Bridge (PSFB)
b. Dual-Active Bridge (DAB)

Week 6-8: Aspects of Three-phase Grid-forming Inverter Control

a. Brief Dynamic Modeling in DQ Domain
b. Aspects of Unbalanced
c. Aspects of Short-circuit Protection

Week 9-10: Grid Forming Inverter Control

Schedule of the module

Start Date: 18th January 2025
End Date: 23rd March 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: isss.forum@gmail.com

Registration link: https://forms.gle/D9XFFy5pH64hhg6F8