MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Ministry of Electronics and Information Technology Government of India

Electronics & ICT Academy MNIT Jaipur Sponsored

Online Faculty Development Programme

on

Modelling and Control of Power Electronic Converters for Green Energy Applications

(23rd June – 04th July 2025)

Day	Date	Forenoon Session 10:00 – 12:00	12:00 –14:00	Afternoon Session 14:00-16:00
1	23.06.2025 Monday	Inaugural and overview of the FDP Session 1: Fundamentals of Power Electronic Converters (Dr. Man Mohan Garg, MNIT Jaipur)	LUNCH BREAK	Session 2: Modelling, Operation and Control of DC Microgrid (Dr. Gururaj M V, IIT Kanpur)
2	24.06.2025 Tuesday	Session 3: Mathematical Modelling of DC-DC Converters: State-Space Averaging Approach (Dr. Man Mohan Garg, MNIT Jaipur)		Session 4: High-Performance Motor Drives for EVs (Dr. Ravi Prakash Reddy, IIT Bombay)
3	25.06.2025 Wednesday	Session 5: Variable Structure and Sliding Mode Control: An Introduction (Prof. Deepak Fulwani, IIT Jodhpur)		Session 6: Design and Development of Bidirectional Chargers with Distributed Energy Resources (Dr. Shailendra Kumar, IIT Bhilai)
4	26.06.2025 Thursday	Session 7: Modelling of Switching Systems using Bond Graphs (Prof. Amod C. Umarikar, IIT Indore)		Session 8: EV Charging Infrastructure: Design and Challenges (Prof. Santanu Kumar Mishra, IIT Delhi)
5	27.06.2025 Friday	Session 9: Mathematical Modelling of DC-DC Converters: Averaged Switch Model Approach (Dr. Man Mohan Garg, MNIT Jaipur)		Session 10: Fundamentals of Control Systems for Power Electronic Converter Applications (Dr. Man Mohan Garg, MNIT Jaipur) Quiz-1
6	30.06.2025 Monday	Session 11: Fundamentals of Model Order Reduction Techniques and Their Applications (Prof. Yogesh Vijay Hote, IIT Roorkee)		Session 12: Magnetics Design: Inductor Design for Buck Converter (Prof. B S Rajpurohit, IIT Jodhpur)
7	01.07.2025 Tuesday	Session 13: Planning and Design of Smart Microgrid (Dr. Ranjan Kumar Behera, IIT Patna)		Session 14: Solid State Transformer for Green Energy Applications (Prof. Mukesh Kumar Pathak, IIT Roorkee)
8	02.07.2025 Wednesday	Session 15: Robust Control of Power Converters (Prof. Deepak Fulwani, IIT Jodhpur)		Session 16: Control Design Approaches for Voltage Regulation in DC-DC Converters (Dr. Man Mohan Garg, MNIT Jaipur)
9	03.07.2025 Thursday	Session 17: High-Gain Inverters (Prof. B L Narasimharaju)		Session 18: Soft Switching Converters: Zero Current Switching (Dr. Man Mohan Garg, MNIT Jaipur) Quiz-2
10	04.07.2025 Friday	Session 19: Soft Switching Converters: Zero Voltage Switching (Dr. Man Mohan Garg, MNIT Jaipur)		Session 20: Real-time Implementation of Control Algorithms for DC-DC converters and Their Applications (Dr. Man Mohan Garg, MNIT Jaipur) Feedback and Valediction