



Anusandhan
National
Research
Foundation



ANRF PAIR Sponsored Three-Day National Workshop on

Teaching / Learning Workshop on Power Electronics, Machines and Drives (Hybrid mode)

Organised by
The Department of Electrical and Electronics
Engineering
National Institute of Technology Goa
Cuncoim, Goa - 403703, India

Hub Institute: IIT Bombay

April 16-18, 2026

About NIT Goa

The National Institute of Technology Goa (NIT Goa) is a premier national-level technical institute in India established in 2010 by an act of parliament (NIT Act, 2007 and NIT (Amendment) Act, 2012). NIT Goa is an autonomous institute functioning under the aegis of Ministry of Education (MoE), Government of India, and has been declared an "Institute of National Importance". The Institute is dedicated to its academic excellence and aims to produce quality Engineers and Scientists. The Institute offers five undergraduate programs and three postgraduate

programs in Engineering Departments. The Institute also offers Ph.D. degree in various stream of Engineering, Applied Sciences, Technology and Humanities & Social Sciences. Faculty members are actively engaged in cutting-edge research and have successfully executed numerous sponsored R&D and consultancy projects. Their work has resulted in the publication of several research articles, book chapters, and books, as well as several patents

About EEE Department

The department of Electrical and Electronics Engineering was established during the inception of the institute in 2010. It offers undergraduate (B.Tech.), postgraduate (M.Tech in Power Electronics and Power Systems), and research programmes in the various fields of Electrical and Electronics Engineering. The faculty members are committed to provide the finest possible education and needed skills for all the UG, PG and Ph.D. students. The major areas of faculty expertise include Power Systems, Power Electronics and Drives, HVDC and FACTS, Electrical Machines, Control Systems, Smart Grids, Electrical Vehicles, Signal Processing, Fuzzy and Neural Networks, Applications of Signal Processing in Power Systems, etc. The faculty members are actively engaged in various research areas ranging from theoretical investigations to practical implementations. Their research is being published in leading international journals and conferences. The lab facilities and the infrastructure are regularly upgraded and are well supported by the institute and industry

needs. All the faculty members are actively engaged in cutting-edge research and have successfully executed and presently executing numerous sponsored R&D projects.

Key Objectives of Workshop

The workshop is aimed at providing comprehensive exposure to effective teaching-learning methodology in learning Power Electronics, Machines and Drives. It is planned to cover these areas systematically, from basics to a reasonably good level of understanding. All the sessions will be highly interactive, fostering meaningful discussions and deeper understanding of fundamentals along with contemporary research challenges in the areas of Semiconductor Devices, Power converter topologies, Magnetics, Electrical machines, Motor control and Converter control. This workshop is aimed to significantly strengthen academic engagement and promote collaborative research opportunities.

Resource Persons



Prof. G. Narayanan from the Dept. of Electrical Engineering, Indian Institute of Science (IISc), Bengaluru, is a distinguished expert in the field of Power Electronics and Machine Drives.

His research interests include AC drives, electric machines, high power converters, multilevel inverters, power semiconductor devices, and pulse-width modulation.



Prof. Shiladri Chakraborty from the Dept. of Electrical Engineering, Indian Institute of Technology Bombay (IITB), is a distinguished expert in the field of Power Electronics for Renewable Energy and Transportation Electrification; Magnetics, Power Semiconductor Packaging, Multi-Physics and Multi-Objective Converter Design.

Topics to be Covered

- Semiconductor Devices
- Power Converter Topologies
- Magnetics
- Electrical Machines
- Motor Control and Drive Systems
- Power Converter Control

Target Participants

- Academicians/ Industrialists/ Govt. Officials
- Research Scholars

Registration Fee (Non-refundable)

- Rs. 500/- (Academicians/ Industrialists/ Govt. Officials)
- Rs. 300/- (Research Scholars)

The number of participants is limited to 50 on a first-come, first-served basis.

Last date for registration: April 14, 2026

Accommodation: Participants need to make their own arrangements for accommodation.

E-certificates will be provided to the participants, with at least 75% attendance.

Registration Link

<https://bit.ly/4sX8hWH>

Patron

Dr. O. R. Jaiswal, Director, NIT Goa

Convenor

Dr. Suresh Mikkili, Head of the Dept, EEE

Organizing Committee

- Dr. Suresh Mikkili, NIT Goa
- Dr. Sreeraj E S, NIT Goa
- Dr. Amol Rahulkar, NIT Goa
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How to Reach NIT Goa

NIT Goa Campus is located at Cuncolim, South Goa. Cuncolim is a city and a municipal council in South Goa district in the Indian state of Goa. Cuncolim city lies about 45 km from Panaji (Capital City of Goa) and 15 km from Margao City. Cuncolim is well connected by road to the Panaji, main railway junction of Margao and Margao bus stand.



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In association with IIT Bombay (Hub-Institute)

April 16-18, 2026

PROGRAMME SCHEDULE (Hybrid Mode)

Youtube: <https://www.youtube.com/c/NationalInstituteofTechnologyGoa>

Day-1 (16th April 2026, Thursday)

8:30 – 9:00 AM		Spot Registration	
9:00 – 9:30 AM		Inauguration	
9:30- 10:00 AM		High Tea	
Technical Session	Time	Topic	Speaker
1	10:00- 11:30 AM	Foundations of Semiconductor Devices: Physics to PN Junctions	Prof. G. Narayanan, IISc Bangalore
11:30 – 11:45 PM		Tea Break	
2	11:45 AM – 1:15 PM	Semiconductor Devices: From Transistors to Power Electronics	Prof. G. Narayanan
1:15 – 2:15 PM		Lunch Break	
3	2:15 – 3:45 PM	Foundations of Power Converter Topologies	Prof. G. Narayanan
3:45 – 4 PM		Tea Break	
4	4 - 5:30 PM	Converter Configurations and Practical Insights	Prof. G. Narayanan

Day-2 (17th April 2026, Friday)

Technical Session	Time	Topic	Speaker
5	10:00- 11:30 AM	Magnetics: From Fundamental Principles to Core Concepts	Prof. G. Narayanan
11:30 – 11:45 PM		Tea Break	
6	11:45 AM – 1:15 PM	Magnetics: Design, Nonlinearities, and Modern Applications	Prof. G. Narayanan
1:15 – 2:15 PM		Lunch Break	
7	2:15 – 3:45 PM	Foundations of Electrical Machines	Prof. G. Narayanan
3:45 – 4 PM		Tea Break	
8	4 - 5:30 PM	Electrical Machines: Performance, Control, and Modern Applications	Prof. G. Narayanan



Day-3 (18th April 2026, Saturday)

Technical Session	Time	Topic	Speaker
9	9 - 10 AM	Guidelines on PCB layout and switching characterization of WBG-based power electronic circuits.	Prof. Shildri Chakraborty, IIT Bombay
10	10:00- 11:30 AM	Motor Control: From Fundamentals to Drive Systems	Prof. G. Narayanan
11:30 – 11:45 PM		Tea Break	
11	11:45 AM – 1:15 PM	Motor Control: Vector Control, Sensorless Techniques, and Drives	Prof. G. Narayanan
1:15 – 2:15 PM		Lunch Break	
12	2:15 – 3:45 PM	Foundations of Power Converter Control: From Principles to Practical Models	Prof. G. Narayanan
3:45 – 4 PM		Tea Break	
13	4 - 5:30 PM	Electrical Machines: Performance, Control, and Modern Applications	Prof. G. Narayanan
5:30 – 6:00 PM		Concluding Session	
