

**Short term course on
Power Electronics Converters for Machine Drives
(PECMD)
February 19-23, 2020**

Registration Form

Please complete the details below and mail along with the registration fee.

1. Name (Mr./Ms.) _____
2. Category: **Academic/Industry/Student**
[For registration as student, please enclose a bonafide certificate from parent institution]
3. Organization: _____
4. Address:

5. Tel. No. (Mob): _____
6. E-mail ID: _____
7. Highest Acad. Qualification: _____
8. Bank Draft No.: _____ Dt _____
9. Amount Rs. _____ drawn on _____
10. Reference no. & date (In case online payment): _____
11. Accommodation Required: Yes /No
(Out station participant needs to Extra pay for accommodation and fooding)

Signature of the Candidate

Signature of the Head of the Department/Institution

Resource Persons:

Academician from IITs, NITs, Reputed Universities, CDAC and professionals from industries

Course content:

- Power Electronics converters, PWM Inverter
- Application of Power Electronics converter in Power system and E-mobility
- Advanced Power Electronics Converters for High Power Drives.
- Advanced control techniques for industrial drives.
- Modern control technique of multi-level converter and multiphase drives.
- Control strategies of special machine drives.
- Lab Demonstration

Patron:

Prof. Rajat Gupta, Director, NIT Mizoram

Organizing committee:

Dr. P.K. Biswas, Assistant Professor, NIT Mizoram

Mr. S. Majumder, Assistant Professor, NIT Mizoram

Prof. S. Chatterjee, Professor and Dean Academic, NIT Mizoram

Mr. A. Bhattyacharya, HoD and Assistant Professor, NIT Mizoram

Mr. S. Debnath, Assistant Professor, NIT Mizoram

Mr. R. Kumar, Assistant Professor, NIT Mizoram

Mrs. K. De, Assistant Professor, NIT Mizoram

Mrs. U. Das, Assistant Professor, NIT Mizoram

Mr. Nitesh Kumar, T.A, NIT Mizoram

Mr. Lalrinmawia, T.A, NIT Mizoram

Advisory committee:

Mr. Tara Shanker, Sr. Director, MeitY, Delhi

Prof. D.Chatterjee, Professor, Jadavpur University

Prof. P.K.Sadhu, Professor,ISM (IIT), Dhanbad.

Dr. A.Datta, Associate Professor and HOD, MZU

Dr.A.Banerjee, Associate Professor, NIT Meghalaya

Prof. Gopakumar, Professor, DESE, IISc, Bangalore

Mr.Renji V Chacko, Sr. Director & HOD, PEG, CDAC

Mr.V.S.Suresh Babu, Nodal officer, NaMPET- CDAC

NaMPET @ NIT Mizoram

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Power Electronics Converters for
Machine Drives
PECMD – 2020**

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Organized by



Department of
Electrical and Electronics Engineering
National Institute of Technology Mizoram

Under the aegis of



NaMPET Phase III

National Mission on
Power Electronics Technology
Towards Power Electronics Excellence

An Initiative of

Nodal Centre



Ministry of Electronics &
Information Technology,
(MeitY) Govt. of India



Centre for Development of
Advanced Computing
Trivandrum

Preamble: The power electronics and motor drives technology has gone through dynamic evolution in the recent years due to many innovations in power semiconductor devices, converter topologies. As the technology is advancing, the applications of power electronics are proliferating in industrial, commercial, residential, aerospace, military, transportation and utility systems. Power electronics is destined to play key role in global industrialization and energy conservation trends of the 21st century. In the environmentally clean renewable energy systems, such as wind, PV and fuel cells, the role of power electronics is significant. Modern power electronic converters are involved in a very broad spectrum of applications like switched-mode power supplies, active power filters, electrical-machine-motion-control, renewable energy conversion systems distributed power generation, flexible AC transmission systems, and vehicular technology, etc.

Power electronic converters can be found wherever there is a need to modify the electrical energy form with classical electronics in which electrical currents and voltage are used to carry information, whereas with power electronics, they carry power. Some examples of uses for power electronic systems are DC/DC converters used in many mobile devices, such as cell phones or PDAs, and AC/DC converters in computers and televisions. Power electronic converters play the role of taking electrical energy from the power system and turning it into a suitable form needed by a motor. The power electronic converter may be determined according to the given power source and the driving motor. For DC drives, power electronic converters such as a controlled rectifier or a chopper can be used to adjust the DC power and AC drives mostly use an inverter to adjust the voltage and frequency in the AC power. AC drives were used for fixed speed operation. Generating an AC voltage with variable frequency was only possible by using rotary converters, which are bulky and inflexible. Although it is possible to use variable voltage with fixed frequency sources to control the speed of AC motors, the efficiency of the drive system will be very poor especially at low speeds. Permanent magnet synchronous motors (PMSM) are typically used for high-performance and high-efficiency motor drives.

About National Mission on Power Electronics Technology (NaMPET): National Mission on Power Electronics Technology-NaMPET is a national mission programme launched by the Ministry of Electronics and Information Technology (MeitY), Govt. of India, with a vision to provide the country with the capability to become a dominant player in Power Electronics Technology. Through this

National level R&D Programme, Research, Development, Deployment and Commercialization of Power Electronics Technology is envisaged by enhancing the indigenous R&D expertise and infrastructure in the country with active participation from academic institutions and industries. Centre for Development of Advanced Computing, CDAC, Thiruvananthapuram, a premier R&D organization under MeitY, is the Nodal Centre coordinating the activities of NaMPET. Ongoing third phase of NaMPET is focusing on Technology development in key areas such as e-mobility, Smart grid, Wide Band Gap devices etc. along with Awareness creation activities.

About Centre for Development of Advancement Computing (CDAC): CDAC undertakes application-oriented research, design and development in electronics, so as to generate state-of-the-art producible, marketable, field maintainable products and systems. The Power Electronics group has wide experience of developing successful power electronics products/systems, and a very good industry interaction by way of transfer of technology, field implementation etc. It has very close association with reputed academic institutions like IISc, IITs, NITs etc. CDAC has contributed significantly to the growth of industry through indigenous development of commercially viable products and systems, foreign technology absorption, consultancy, training and turnkey implementation of contract projects.

About the Institute: NIT Mizoram was started in the year 2010 in the scenically beautiful state of Mizoram with an objective to impart education, research & training leading to B.Tech, M.Tech & PhD. degrees. This institute has been declared as an Institute of National Importance by an Act of Parliament. Wrapped between clouds and mountain rocks, which adds to its beauty it is amongst the most educated states of our country with a literacy rate of 91%. It also beholds a very peaceful and calm environment suitable for studies. The institute is situated in the capital city Aizawl which can be reached by Air through Kolkata / Guwahati. Silchar is the nearest railway station to Aizawl. The journey (by road) from Silchar to Aizawl may take approx. 6 Hrs. Now NIT Mizoram is working under the Ministry of Human Resource Development, Govt. of India.

About the Department: Electrical and Electronics Engineering was one of the first three disciplines in the B. Tech programme that had started in NIT Mizoram since July 2010, while it was functioning under the mentor Institute, VNIT, Nagpur. Since its inception in 2010, the department has been actively engaged in teaching and research in diverse fields of Electrical and Electronics Engineering

with well experienced faculty. The department offers a UG Program in Electrical & Electronics Engineering, PG Programs in the specializations of Power Electronics & Drives and also offers Ph.D Programs of Electrical and Electronics Engineering. All along, the department has been at the modernization of the curriculum for both UG and PG courses.

Registration fee:

- Professionals from Industry and R&D Units: Rs. 5000/-
- Faculty members from universities/institutes: Rs. 3000/-
- Students: Rs.1000/-

Registration:

Application in the prescribed format duly sponsored by the Head of the Institution along with the registration fee in the form of a Demand Draft favouring “NIT Mizoram” payable at SBI, Bawngkawn. Please send a scanned copy of the Demand Draft to pabitra.eee@nitmz.ac.in/suman.eee@nitmz.ac.in on or before **17th February, 2020**.

For Online Payment:

Account No.: 3295192569, SBI, Bawngkawn Branch.
IFSC code: SBIN0007059

Important dates:

Last date for online registration: **17th February, 2020**

[Complete application should be received by the coordinator by this date]

Selection intimation to the applicant: **18th February, 2020**

Boarding and Lodging:

Out station participant need to pay for accommodation and food.

Program coordinator:

Dr. P.K. Biswas

Assistant Professor

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