

## Objective

This FDP is focused on providing both the theoretical basis and hands-on training in sensing the inverter output voltages, processing the same and using desired control logic to generate the IGBT gating pulses. The program also includes the theory and design of gate drive circuits for connecting the gate pulse to IGBTs. The complete system will be demonstrated using purpose built inverter modules and SEMIKRON supplied Power Electronic Modules. The major objective of the FDP is to make the participants confident in designing and building Power electronic solutions.

## Preamble

A common problem faced by many research scholars is building reliable power electronic hardware to test their proposed algorithms the problem areas are sensing the inverter output voltage and generating firing pulses in real time. .

In this workshop these problems are addressed using Arduino and LabVIEW platforms. .

The requirement of gate drive units will be discussed in detail and a gate drive circuit will be designed, fabricated and tested..

SEMIKRON made power electronic modules will be introduced. The gate pulsed generated using Arduino and LaBview will be used to drive these modules.

## Scope

Faculty Development Programme will focus on the following areas of interest:

- Design and build Arduino based inverter output voltage sensing and gate pulse generation modules
- Theory and design and building IGBT gate drive hardware
- Design and build LabVIEW based inverter output voltage sensing and gate pulse generation modules
- Introduction to SAMICRON power electronics hardware

## About the Institute

Situated in the Sylvan surroundings at the foot of the Western Ghats, the village of Nitte is 57 km from Mangalore. Nitte Mahalinga Adyanthaya Memorial **Institute** of Technology (NMAMIT), an autonomous institution affiliated to Visvesvaraya Technology University (VTU) Belgaum is a dream reality of Nitte Education Trust (NET). The institution is named after the first ever Engineering graduate from coastal Karnataka. The Nitte Education Trust, (established in 1979) runs 28 Educational Institutions, five of which are at Nitte providing serenity of the rural atmosphere with all the facilities of an urban centre.

All the disciplines at BE level are accredited by the National Board of Accreditation, New Delhi. The Institution is ISO 9001:2008 Certified from NVT Quality Certification (ANAB Accredited) and is recognized as Lead Institution under World Bank's **TEQIP** programme.

NMAMIT, Nitte is an amalgamation of

- 13 Departments.
- 250 highly qualified faculty members.
- More than 4500 motivated students.
- 400 dedicated supporting staff.
- 7 Undergraduate programmes.
- 15 Post graduate programmes.
- Research Centre in all the departments.
- 100 acres of land.
- State of the art lab / workshop and digital library.
- Well connected internet with 50 mbps leased line connectivity.
- 25 years of experience in producing truly world class engineers.

## About the Department

The department of E&E Engineering, established in 1987, conducts UG and PG courses. The department is a VTU-PG Extension Centre for M.Tech in Microelectronics & Control Systems. The Department is offering M.Tech in Power Electronics (Autonomous under VTU) since the academic year 2014-15. With the state of the art Laboratory in Power Electronics, Control Systems, Power Systems, Computers and High Voltage & Relay, which caters to the need of all the Electrical and Electronics Engineering students. Further; the department has been recognized as Research Centre by VTU.



**One Week**

**FACULTY DEVELOPMENT PROGRAMME**

**on**

**Power Electronic Converter Controls  
(Hardware based Hand-on workshop)**

**JULY 17 - 21, 2017**

## Registration Form

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Affiliation : \_\_\_\_\_

Department : \_\_\_\_\_

Telephone No : \_\_\_\_\_

Email : \_\_\_\_\_

Accommodation : Required  Not Required

DD Details : Date: \_\_\_\_\_ Bank: \_\_\_\_\_

No: \_\_\_\_\_

Signature : \_\_\_\_\_

Date : \_\_\_\_\_

Place : \_\_\_\_\_

Endorsement by the Head of the Institution

### Organising Committee

#### Patron :

Shri N. V. Hegde  
President, NET, Mangalore

#### Chairman :

Dr. Niranjana N. Chiplunkar  
Principal

#### Convenor:

Dr. Nagesh Prabhu  
HOD EEE Department.

#### Coordinators:

Dr. Pinto Pius AJ                      Prof. Pradeep Kumar

#### Co-ordinators:

Prof. Abdul Rehman                      Prof. Girisha Joshi

#### Members:

Dr. M Satyendra Kumar                      Prof. K Vasudeva Shettigar

Prof. Suryanarayana                      Prof. Nayana P Shetty

Prof. Naveen J.                      Prof Latha Shenoy

Prof. Mahabaleshwara Sharma                      Prof. Raksha Adappa

Prof. Dinesh Shetty                      Prof Raghavendra Prabhu

Prof. Sowmya Rani                      Prof Gururaj K

Prof. Ravikiran                      Prof. Swathi Hatwar

#### Contact details:

#### Dr. Pinto Pius AJ

Professor, Department of EEE  
NMAM Institute of Technology, Nitte  
Karkala TQ, Udupi – 574110  
Email : [pintopaj@nitte.edu.in](mailto:pintopaj@nitte.edu.in)  
Mob: 944 999 1085

### Resource Persons:

Faculty from host Institute.

### Participants

Faculty from engineering colleges and PhD Research Scholars who are planning to pursue research in Automation and Robotics are eligible to attend the workshop. Maximum number of participants is restricted to 30. Selection is on First-Come-First-Serve basis.

### Eligibility:

Faculty of Engineering Colleges/ Technical Institutions teaching in the Department of EEE, ECE, Research scholars from Engineering colleges and Industries.

### Registration Fees:

For participants from **academic Institutions** :                      **Rs. 2000/-**  
(For faculty, PG students and research scholars)  
For participants from **Industry & Others** :                      **Rs. 3000/-**

### Mode of Payment:

Registration fee may be paid through Demand Draft, drawn in favour of **Principal, NMAMIT, Nitte** payable at Syndicate Bank, Nitte.

### Accommodation

Limited accommodation (at nominal rates) is available in hostel (twin sharing) on first-come-first-serve basis.

### Important dates

Last date for receipt of  
Registration form :                      **May 20, 2017**  
Date of intimation :                      **May 31, 2017**  
Registration :                      **June 15, 2017**



**NMAM INSTITUTE OF TECHNOLOGY**

**NITTE -574 110, KARNATAKA STATE**

*Department of*

**ELECTRICAL AND ELECTRONICS ENGINEERING**

**Organizes**

**One Week**

**FACULTY DEVELOPMENT PROGRAMME**

**On**

**"Control of Power Electronic Converters"  
(Hardware based Hands-on workshop)**

**July 17 – 21, 2017**

**NMAM INSTITUTE OF TECHNOLOGY**

**NITTE -574 110.**

**(An Autonomous College Under VTU Belgaum)**

**(A Unit of Nitte Education Trust)**

**Karkala Tq, Udupi District, KARNATAKA.**

**Phone: 08258-281264**

**Fax: 08258-281265**