



ABOUT THE DEPARTMENT:

The Department of Electrical and Electronics Engineering offers an undergraduate program, post-graduate programmes (Power Systems & Power Electronics) and research degrees (M.S. & Ph.D.) in various fields of Electrical and Electronics Engineering. The Department is recognized for excellence in teaching, research and service to the profession.

A Five-day Workshop

on

***Solar Photovoltaic System Design
and***

MPPT Implementation

15th - 19th May 2019

Interface card with MSP430 microcontroller:



CO-ORDINATORS

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Organized by

**Department of
Electrical and Electronics Engineering
National Institute of Technology,
Tiruchirappalli, Tamil Nadu - 620 015.**

Scope of the Workshop:

With the growing importance for reducing the dependence on the non-renewable sources of energy, photovoltaic energy conversion has gained much popularity as a viable green alternative. Although PV modules are cheaper than ever before, there is a desperate need to maximize the extracted energy to gain practical returns on the huge investment on PV arrays. One of the main factors detrimental to the PV energy yield is partial shading. To minimize the mismatch losses among the modules, it is desired to reconnect the conventional series-parallel array so as to distribute the shading effect over the entire array without altering the electrical connections of the modules. Whatever be the physical configuration of the array, the output power-voltage characteristics are non-linear, with the PV power dependent on the voltage at which it is extracted. Thus there is a need for Maximum Power Point Tracking technique, which requires power electronic interfaces such as DC/DC or DC/AC converters.

This course is designed to introduce the basics of solar photovoltaics, effect of temperature, irradiation and the impact of partial shading conditions on the extracted power and methods of extracting maximum available power under any environmental conditions. The workshop methodology includes classroom lectures, case study simulations, practical demonstrations and hands-on laboratory experience on MPPT implementation and exposure to PCB design of power converters.

The five-day workshop shall have sessions on:

- Modelling of PV cells
- Simulation of electrical characteristics of PV array
- Control of grid connected PV inverters
- Impact of partial shading on PV systems
- Design and implementation of Power Converters
- Laboratory-based training module on “Design of Printed Circuit Boards for Power Converters”
- Laboratory-based training module on “MPPT Implementation using the TI MSP430 microcontroller”.

The course will enlighten the participants with new paradigms and findings, practical challenges encountered and the possible solutions for the challenges faced in solar photovoltaic systems. The workshop is anticipated to enhance the technical interaction between groups paving the way for an overall fortification of technical capabilities of the power electronics community.

Resource persons:

Faculty members from NIT Trichy with rich experience in teaching, research and laboratory development will be handling the sessions.

Registration:

Registration Fee:

The registration fee includes workshop kit, working lunch and refreshments. It is proposed to provide all registrants with a hardware kit consisting MSP430 and MPPT boards for effective teaching and practice*.

***Subjected to the sponsorship receiving of which is anticipated.**

	Individual	Group (for 3 registrations)
Industry delegates	Rs. 5,000	Rs. 12,000
Academicians/ faculty	Rs. 3,000	Rs. 8,000
Scholars/ students	Rs. 2,000	Rs. 5,000

The participants may be provided hostel accommodation, depending on the availability, on additional payment basis.

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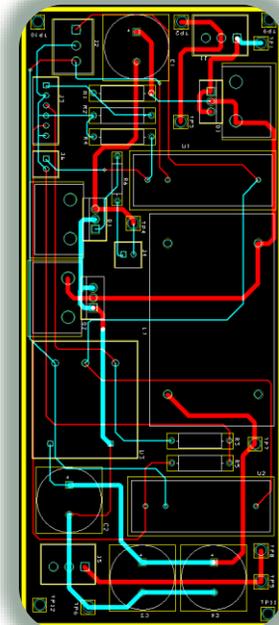
For Registration

Please visit: <http://spvsd2019.nitt.edu/>

The selected candidates will be intimated by 5th May 2019 by e-mail.



DC/DC converter board:



PCB layout