Objective of the Programme

The objective of this course is to impart an in-depth knowledge in selection, design and control techniques of power converter circuits for solar PV and wind energy conversions. The course will address circuit oriented aspects and system oriented aspects of power electronics. The course will help the faculty for smooth conduct of both theory and practical sessions related to power electronics under the curriculum of APJ Abdul Kalam Technological University for UG and PG courses. This programme provides a platform for strengthening modeling and hardware implementation capabilities and gives an opportunity for participants to know the emerging technology in the related areas both in academic and industry perspective which will promote their research interest in the field of renewable energy systems.

Target Audience

The STTP is open for faculty members, research scholars and PG students of APJ Abdul Kalam Technological University (KTU) affiliated Engineering colleges. Faculty and students from EEE, EIE and ECE can attend the program. Number of external participants limited to 30. Selection will be on the first-come-first-served basis and will be intimated through email only. Participation certificates will be issued to all participants who have attended STTP on all days.

Registration

Fill the online form at [https://goo.gl/forms/3ttKL2Aap505OkUm2](https://goo.gl/forms/3ttKL2Aap505OkUm2) The scanned copy of signed sponsorship certificate has to be uploaded in the online form.

Registration Fee: Rs.1000/-

Dates to Remember

Last date for online registration: 26-11-2018
Intimation about selection (by e-mail): 27-11-2018

For more information contact

Dr. Pinkymol K.P
Associate Professor (Mobile:9526710598)
Er. Deepu E Koshy
Assistant Professor (Mobile:7012270190)
Department of Electrical and Electronics Engineering, Pathamuttom, Kottayam -686532
E-mail: fdpeee@saintgits.org

Sponsorship Certificate

Certified that Mr./Ms./Dr. ……………...………… is an employee/student of this institution and is hereby sponsored for the STTP on Design and Development of Power Converter for Renewable Energy Applications at Saintgits college of Engineering, Pathamuttom during 03rd-07th December 2018. He/she will be permitted to attend the course fully, if selected.

Place: Name & Signature of The Sponsoring Authority

Date: Seal of the Institution
Course Content

The course aims to provide an insight into:

- Power Semiconductor switches – Characteristics, losses and modeling.
- Design of drive circuits for IGBTs and MOSFETs
- Converter topologies and control techniques for solar and Wind power conversion
- Different modeling methods and their applications to power electronic circuits to obtain a dynamic model.
- Design of controllers for power electronic systems.
- Selection of power converters and design parameter challenges in Hybrid Microgrid systems
- **Hardware development** of Solar PV based battery charger development using SMPS system. Which will cover the basics of solar PV systems, Power converter (SMPS selection for the application) (From practical perspective) (Buck converter design, Basics of inductor winding, MOSFET/Switch selection, MOSFET driving techniques and driver development (totem pole))

Partial Programme Schedule (Tentative)

<table>
<thead>
<tr>
<th>Day 1 and 2</th>
<th>Solar PV based battery charger development using SMPS system (hands-on)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Er. Bharath K R</td>
<td>Amrita School of Engineering, Amritapuri, Amrita Vishwa Vidyapeetham</td>
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<table>
<thead>
<tr>
<th>Day 3</th>
<th>Modeling of Power Electronic Circuits and design of controllers (hands-on)</th>
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</thead>
<tbody>
<tr>
<td>Dr. Dinesh Gopinath</td>
<td>Government Engineering College, Idukki (GECI)</td>
</tr>
</tbody>
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|-------|------------------------------------------------------------------------|
| 1. Shri Saravana Kumar A | CDAC, Thiruvananthapuram  
| 2. Shri Ajeesh A | CDAC, Thiruvananthapuram |

<table>
<thead>
<tr>
<th>Day 5</th>
<th>Design and development of power electronic controller for wind energy conversion system.</th>
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</thead>
<tbody>
<tr>
<td>Dr. Vijayakumar Krishnasamy</td>
<td>Indian Institute of Information Technology Design and Manufacturing (IIITDM), Kancheepuram</td>
</tr>
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