GIAN Course on Intelligent Electrical Power Grids

27th November 2017 to 01st December 2017
Organised by
Department of Electrical and Electronics Engineering,
National Institute of Technology, Tiruchirappalli - 620015, Tamil Nadu, India

Overview

At present "Smart gird" is the buzzword of the researchers working in the area of electrical and electronics engineering. According to European Technology Platform, A Smart Grid is an electricity network that can **intelligently** integrate the actions of all users connected to it - generators, consumers and those that do both-in order to efficiently deliver sustainable, economic and secure electricity supplies. This course on Intelligent Electrical Power Grids is aimed at elaborating the theoretical and technological limits of present electrical power systems in a changing world, influenced by the liberalization of the electricity market, the uncoupling of generation and transmission and the large scale introduction of renewable and dispersed energy sources. Further, it is proposed to make the participants aware of energy efficiency, DC micro-grid, wind turbine generator systems, demand side management and residential energy management by the application of recent advancements in embedded systems and information & communication technology.

The primary objectives of the course are as follows:

i. Exposing participants to the importance and need for intelligent electrical grid,
ii. Making awareness amongst the participants about the energy efficiency and energy efficiency audit practice,
iii. Providing exposure to smart grid modelling through simulation case studies and experimentation,
iv. Enhancing the knowledge of participants in wind turbine generator system, DC micro grids and embedded system applications in micro-grid control and residential energy management system.

Dates for the Course	27th November 2017 to 01st December 2017
Course content	➢ Fundamentals of energy efficiency and Energy efficiency of buildings ➢ Smart grid modelling, Automation protocols and Information security ➢ Demand side management and Residential energy management system ➢ IoT applications to intelligent electrical grid, Application of 6LowPAN ➢ Wind-driven generators with DC microgrid ➢ Applications of embedded system for intelligent electrical grid
You Should Attend If…	• You are an Executive/ Engineer /researcher from manufacturing/ service/government organization including R&D laboratories • You are a Faculty from reputed academic institution /technical institution. • You are a Student at any level (B. Tech. / M. Sc. / M. Tech. / M.S/Ph. D.) **Number of participants for the course will be limited to fifty.**

Course Fee	The participation fee for taking the course is as follows: Participants from abroad: US $200, Student Participants from abroad: US $100, Participants from Industry/Government Research Organizations: Rs. 5,000/- Participants from Academic Institutions: Rs. 3,000/- (for faculty), Rs. 2,000/- (for students). The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges and working lunch and refreshments. It will be very helpful if you can bring your laptop for the course. The participants may be provided hostel accommodation, depending on the availability, on additional payment basis. Request for hostel accommodation may be submitted to: iepg.nitt@gmail.com

How to Register	**Stage 1: GIAN Web (Portal) Registration:**
	(Individuals who have already registered to GIAN earlier do not need to repeat)
	
	Visit GIAN Website at the link: http://www.gian.iitkgp.ac.in/GREGN/index and create login user ID and Password. Fill up the registration form and do web registration by paying Rs.500/- through online Net Banking/ Debit/ Credit Card. Please do not confuse GIAN web registration with course registration. The course registration fee is separate. The candidate has to pay course registration fee as per stage 3 given below.
	
	Registration to the GIAN portal is one time affair and will be valid for lifetime of GIAN. Once registered in the portal, an applicant will be able to apply for any number of GIAN courses as and when necessary.
	
	Stage 2: **Course Registration (Through GIAN Portal):**
	
	Log in to the GIAN portal with the user ID and Password created in Stage 1. Click on "Course Registration" option given at the top of the registration form. Select the Course titled "Intelligent Electrical Power Grids" from the list and click on "Save" option. Confirm your registration by Clicking on "Confirm Course".
	Last date for Registration : 15th November, 2017
	
	Stage 3 : Course Fee Payment (Only selected candidates) :
	
	Only Selected Candidates will be intimated through E-mail by the Course Coordinator. They have to remit the necessary course fee in the form of DD drawn in favor of "**The Director, NIT, Tiruchirappalli – 620015**" payable at **NIT-Tiruchirappalli**. **The DD along with the signed hard copy of the filled in application should be sent to the following address:**
	
	Dr. M.P. Selvan
	The Coordinator
	(GIAN-Intelligent Electrical Power Grids)
	Department of Electrical and Electronics Engineering
	National Institute of Technology,
	Tiruchirappalli 620015
	
	For any queries, you may contact : Mr. Arun S.L.
	                                  Mobile : 8248109353
	                                  Email : iepg.nitt@gmail.com

The Faculty

Dr. Peter Palensky is Professor for intelligent electric power grids at TU Delft, Netherlands. Before that he was Principal Scientist for Complex Energy Systems at the Austrian Institute of Technology (AIT) / Energy Department, Austria, Head of Business Unit "Sustainable Building Technologies" at the AIT, CTO of Envidatec Corp., Hamburg, Germany, associate Professor at the University of Pretoria, South Africa, Department of Electrical, Electronic and Computer Engineering, University Assistant at the Vienna University of Technology, Austria, and researcher at the Lawrence Berkeley National Laboratory, California. He is active in international committees like IEEE and is associate editor for the IEEE Transactions on Industrial Informatics. His main research field is complex energy systems. For more details visit : http://www.palensky.org/

Dr. N. Kumaresan is presently an Associate Professor in the Department of Electrical and Electronics Engineering at National Institute of Technology, Tiruchirappalli, India, where he is associated with Power Electronic Converters Research Laboratory and Hybrid Electrical Systems Laboratory. His fields of interest are Design and development of Electrical Machines and Power Electronic Controllers for Renewable Energy Electric Conversion Systems.

Dr. M.P.Selvan is currently an Assistant Professor with the Electrical and Electronics Engineering Department, National Institute of Technology Tiruchirappalli, India, where he is also associated with the Hybrid Electrical Systems Laboratory. His research interests include distribution system analysis, distributed generators, micro-grid, smart-grid, demand-side management, custom power devices, and power quality.

Course coordinators

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