*Chairman,*
*Electrical Engineering Technical Division,*
*The Institution of Engineers Malaysia,*
*Lots 60 & 62, Jalan 52/4, P.O. Box 223 (Jalan Sultan),*
*46720 PetalingJaya, Selangor Darul Ehsan*
*Tel: 03-7968 4001/2 Fax to 03-7957 7678 (Email : valli@iem.org.my)*

# REGISTRATION FORM
## HALF DAY WORKSHOP ON ENERGY STORAGE APPLICATIONS IN SMART POWER SYSTEMS

**Date : 5th November 2017 (Sunday)**

**(Closing Date: 3rd November 2017)**

| No | Name(s) | M'ship No. | Grade | Fee (RM)* |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | SUB TOTAL | |
| | | | TOTAL PAYABLE | |

***Fees MUST be fully paid BEFORE the CLOSING DATE. Seats could only be confirmed upon payment.**
Enclosed herewith a crossed cheque No: _____for the sum of RM _____ issued in favour of "**The Institution of Engineers, Malaysia**" and crossed 'A/C payee only'. I/We understand that the fee is not refundable if I/We withdraw after my/our application is accepted by the Organising Committee as stated in the **cancellation term**. If I/We fail to attend the seminar, the paid registration fee will not be refunded.

Contact Person: _____ Designation: _____

Name of Organization: _____

Address: _____

_____

Telephone No.: _____ (O) _____ (Fax)

_____ (H) _____ (HP)

Email: _____

_____ _____
Signature & Stamp Date

**Photocopies are acceptable**

**CANCELLATION POLICY**
IEM reserves the right to postpone, reschedule, allocate or cancel the course. Full refund if cancellation is received in writing more than 7 days before start date of the event. No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with prior notification and substitute will be charged according to membership status.

The Institution of Engineers, Malaysia

## 5TH NOVEMBER 2017
# HALF DAY WORKSHOP ON
# Energy Storage Applications in Smart Power Systems

*Jointly organised by*
**Electrical Engineering Technical Division &**
**Electronic Engineering Technical Division,**
**The Institution of Engineers, Malaysia**
*in collaboration with*
**The Institute of Electrical Engineers of Japan**

**Date** : **5th November 2017 (Sunday)**

**Venue** : **Penang Skills Development Centre,**
**Room 2306, Block 2 Level 3, Bayan Lepas, Penang**

**Time** : **9:00 am – 1:00 pm**

**BEM Approved CPD/PDP: 3.5 hours** **Ref. No.: IEM17/HQ/454/W**

| REGISTRATION FEES (INCLUSIVE OF 6% GST) | |
|---|---|
| | **ONLINE / NORMAL** |
| IEM Member | RM 100.00 |
| Non-IEM Member | RM 150.00 |
| *GST will be implemented with effect from 1 April 2015* | |

**PERSONAL DATA PROTECTION ACT**
I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at http://www.myiem.org.my" and I agree to IEM's use and processing of my personal data as set out in the said notice.

## SYNOPSIS

In Japan, large penetration of distributed generations with renewable energy (RE) sources such as photovoltaic (PV) power generations and wind power generations, are growing due to government policies which are towards construction of low carbon society aiming at a sustainable society. Since the introduction of the RPS system in 2003, electric power supply from RE has doubled. Moreover, since the surplus electricity purchase system was introduced in 2009, the introduction of residential photovoltaic power generation has largely increased. Although these RE sources are free from exhaustion and do not generate greenhouse gas emissions at time of power generation, some of RE sources have demerits such as output power instability by weather conditions and difficulty of output power forecast. With large penetration of such variable output sources, it will be difficult to maintain supply and demand balance in a total power system. Due to these backgrounds, to have large integration of RE sources, it is required to create evolution in today's power systems. They must be changed to smarter power systems, where Information and Communication Technology (ICT) is utilised for cooperation of power apparatus and a total optimization is aimed such as minimizing total society cost. Microgrid is a concept of local power and energy supply system using distributed energy resources (DERs) such as distributed generation and energy storage to enable energy efficiency improvement, local generation/consumption, supply reliability improvement, harmonization between distributed generations and bulk system, etc. For these purposes, energy storage system (ESS) such as battery system takes important roles due to its quick response. However, the largest disadvantage of battery system is its expensive installation cost. In this sense, the alternative solution for ESS have been discussed. In this workshop, two interesting demonstrations using hydrogen production process and power to heat (P2H) technologies will be introduced.

IEM Electrical Engineering Technical Division, Electronic Engineering Technical Division & the Institute of Electrical Engineers of Japan have organised **"Half Day Workshop On Energy Storage Applications In Smart Power Systems"** which will focus on informing participants on the knowledge of realisation of a low carbon society, smart grid power system's reliability, and energy storage applications.

## ABOUT THE SPEAKERS

**Prof. Toshihisa FUNABASHI, C.Eng. SMIEEE, MIET, MIEEJ**
**Institute of Materials and Systems for Sustainability (IMaSS), Nagoya University**
Toshihisa FUNABASHI received the B.S. degree in Electrical Engineering from Nagoya University, Aichi, Japan, in 1975. He received his Doctorate degree in Electrical Engineering from Doshisha University, Kyoto, Japan, in 2000. In 1975, he joined Meidensha Corporation, Tokyo, Japan, where he had been engaged in research on power system analysis and also distributed generation applications in power systems. Since April 2014, he is a professor of Nagoya University, Aichi, Japan. His current interest are operation and control of power systems with renewable energy sources, output power forecast of photovoltaic and wind power generations, and generation and transmission lines planning considering large integration of renewable energy sources and power electricity markets. He has published over 100 journal papers and over 150 international conference papers in these technical areas. Prof. Funabashi is a Chartered Engineer in the U.K, a member of IET, a senior member of IEEE and a member of IEE Japan. Academic press has published his book titled "Integration of Distributed Energy Resources in Power Systems, -Implementation, Operation and Control-" on March 2016.

**Prof. Masahide HOJO, Tokushima University**
Masahide HOJO received the B.S. and M.S. degree from Kobe University, Japan, in 1994 and 1996, respectively, and the Ph.D. degree from Osaka University, Japan, in 1999. In 1999, he joined Tokushima University as an Assistant Professor, and is currently a Professor in the Department of Electrical and Electronic Engineering, Graduate School of Technology, Industrial and Social Sciences, Tokushima University, Japan. His research interests are in the area of power system control based on power electronics technology, including FACTS apparatus and distributed energy resources.

**Assoc. Prof. Ryoichi HARA, Hokkaido University**
Ryoichi HARA received Ph.D degree from Hokkaido University, Sapporo, Japan in 2003. In same year, he was appointed as an assistant professor at Yokohama National University, Yokohama, Japan. In 2006, he has been an associate professor at graduate school of information science and technology, Hokkaido University in Sapporo, Japan. His research interests are analysis, and operation and control of power and energy systems. Recent years, he is particularly interested in the technological and economical harmonization of bulk power systems and distributed energy resources. He has worked as a member of international steering committee of symposium on Microgrid since 2009.

**Dr. Yoshinobu Ueda**
Dr. Yoshinobu Ueda joined Meidensha Corporation in 2001. He mainly engages in development of power electronics application for power quality conditioning, electric power system analysis and renewable energy system with system stabilizing functions. He received Ph. D. from the University of Tokyo in 2001.

| Tentative Programme | |
|---|---|
| **08:30 – 09:00** | **Registration** |
| **09:00 – 09:15** | Opening Remarks & Speakers Introduction |
| **09:15 – 10:00** | Introduction: Renewable Energy Sources and Smart Power Systems by Prof. Toshihisa Funabashi |
| **10:00 – 10:15** | **Coffee Break** |
| **10:15 – 11:00** | Stabilisation of Small-Scale Power System by Inverter Control by Prof. Masahide Hojo |
| **11:00 – 11:45** | Energy Storage Applications in Microgrids by Assoc. Prof. Ryoichi Hara |
| **11:45 – 12:30** | Energy Storage Applications In Rural Power Systems by Dr. Ueda Nobuyoshi |
| **12:30 – 13:30** | **Lunch** |

**Terms & Conditions:**

- For **ONLINE REGISTRATIONS, only ONLINE PAYMENT** is applicable [via RHB and Maybank2u –Personal Saving & Personal Current; Credit Card - Visa/Master].
- Payment via **CASH / CHEQUE / BANK-IN TRANSMISSION / BANK DRAFT / MONEY ORDER / POSTAL ORDER / LO / WALK -IN** will be considered as **NORMAL REGISTRATION.**
- **FULL PAYMENT** must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the course, the fee is to be settled in full.
- Fee paid is not refundable. Registration fee includes lecture notes, refreshment.
- The Organizing Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.