



Technical Visit to UM Power Energy Dedicated Advanced Centre

by Dr Lo Chin Kim

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UM Power Energy Dedicated Advanced Centre (UMPEDAC), a research center founded by Prof. Dr. Nasrudin Abd Rahim, was recognised as the national Higher Institution Center of Excellence (HICoE) by the Ministry of Higher Education in 2009. UMPEDAC was also the recipient of the Human Life Advancement Foundation (HLAF) Lifetime Achievement Award in 2014. Driven by the vision to empower Malaysia with the capability to become a regional leader in power energy, the UMPEDAC is now equipped with state-of-the-art research facilities in their specialized laboratories, capable of conducting high impact researches, conducting postgraduate programs, offering consultancy services to the power and energy industry, organizing technical courses, and offering specialist research facilities in solar energy.

A technical visit to UMPEDAC was organized by the Electrical Engineering Technical Division (EETD) on 10 October 2016. Prof. Dr. Nasrudin Abd Rahim, founder and director of the UMPEDAC gave a brief introduction on the history, future plans and prospects of the research center prior to the lab tours.

The lab tours started with a visit to the UMPEDAC solar garden. The solar garden is an open space on the UMPEDAC building which receives the sunlight for most of the time in a day, hence a perfect location for solar energy research. Prototypes demonstrated in the solar garden include solar PV tracker system, solar online monitoring system, rain water harvesting system with PV thermal technology, stand-alone solar street light system, solar emergency light, solar water fountain and garden lighting system, as well as the recent solar kiosks.

In the subsequent stops of the visit, a few ongoing research projects were introduced. A self-cleaning PV module concept was explained and the first prototype of water repellent coating proposed to be applied on the module surface was demonstrated. Furthermore, a real-time simulation of the power system network for the power system transient study was demonstrated as well. Besides, the advantages of using the six-phase machine developed by UMPEDAC was explained with a live demonstration of a six-phase machine which could operate without interruption even when open-circuit fault occurred in one phase. A PV inverter testing laboratory was introduced next. The PV inverters can be sent to the testing laboratory to be tested in accordance with the IEC standards.

In conclusion, the technical visit to the UMPEDAC research center was an interesting trip. The visitors were introduced to the state-of-the-art technology in electrical engineering which can be commercialized in the future. In fact some of the products have already been commercialized, such as the solar kiosks and PV inverters.



Ir. Yau Chau Fong, chairman of the EETD handed over the token of appreciation to Prof. Dr Nasrudin Abd Rahim, founder of the UMPEDAC.