



The Institution of Engineers, Malaysia

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Talk On
“SMART Greenhouse: A Micro-Climate Simulation System for Temperate Crop Production on Lowland Tropics”
 Organised by the Agricultural and Food Engineering Technical Division, IEM
BEM Approved CPD/PDP Hours: Applying

Date : **30th September 2017 (Saturday)**
 Time : **9.00 am – 11.00 am** (*Refreshments will be served at 8.30am*)
 Venue : **Auditorium Tan Sri Prof. Chin Fung Kee, 3rd Floor, Wisma IEM, Petaling Jaya, Selangor**
 Speaker : **Ir. Mat Sharif Bin Ismail**

SYNOPSIS

MARDI has carried out research on the development of a fully controlled environment greenhouse for the cultivation of temperate crops in lowland tropics. The objective is to generate effective and suitable environment for growing temperate crops under tropical climate and to undertake studies to fulfill the crop requirements. The innovation comprised of design techniques of a controlled environment greenhouse (CEGH) to generate effective environmental conditions that satisfies the temperate crop requirements. Specific environmental parameters are set-up, controlled within the comfort zones and stabilized which subjected to external environment variation. The environment is generated by mechanized environmental control system (ECS) including tailored design air-condition, roof-top ventilator, humidifier, CO2 enrichment, photo-periodic lighting and fertigation. The lower limit temperature is induced by air cooling system, distributed through conduits. The upper limit temperature is controlled by the automatic ventilation fans fixed on-top of the double layer roofs, while RH is controlled by humidifier and all are automatically controlled by a computer. The designed of control mechanism is based on the principle of “Stratified air-space” in a controlled volume. This control plane moves up/down as influenced by the external environment. The temperate crops selected were those with high commercial value including broccoli, brussels sprouts, cauliflower, iceberg lettuce, coral shallots, chrysanthemum and strawberry.

BIODATA OF SPEAKER

Ir. Mat Sharif bin Ismail is a Principal Scientist in the Malaysian Agricultural Research and Development Institute (MARDI). He graduated from UPM in Bachelor Engineering (Agricultural) in the year 1988 majoring in Farm Structure and Environment. His first graduated also from UPM in Diploma Animal Science, 1979 and started joint MARDI on the 24 January 1980 until now. In 1992 MARDI sent him pursued his MSc in the field of Electronics Control System under School of Engineering at the University of Aberdeen, Scotland, UK. He managed to conducted study by research in the following year with the Scottish Agriculture College for his Master of Philosophy, registered at the same University (Aberdeen) and conferred with MPhil. by the year 1995 in the field of Controlled Environment Engineering. He is a registered Professional Engineer with practicing certificate under Board of Engineer Malaysia. His being as a PE since the year 2008 till now and had published more than 150 technical papers (Scientific Journals, books, project reports, conference papers, lecture notes for university student, short courses etc.,). He had won a lot of technology innovation and inventions, which consist national and international exhibitions / competitions – series of i-TEX, Geneva Switzerland, MSTE, Magic, etc

ANNOUNCEMENTS TO NOTE:

- **Non members** may also attend the talk but will need to pay a registration fee of **RM50** and an administrative fee of **RM15**. GST is inclusive.
- Limited seats are available on a "first come first served" basis (maximum 100 participants). **To secure your seat, kindly register online at www.myiem.org.my.**

ADMINISTRATIVE FEE

- Kindly be informed that an administrative fee of **RM15** is payable for talks organized by IEM. GST is inclusive.
- Student Members are however exempted.

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