

WEBINAR TALK ON AGRIVOLTAIC TECHNOLOGY FOR A SUSTAINABLE SOLAR INDUSTRY AND AGRI-FOOD SECURITY

Organised by :
Agricultural and Food Engineering Technical Division, IEM

REGISTRATION FEES

IEM Students: Free

IEM Members: RM15 (Online)/RM20 (Offline)

Non-IEM Members: RM70

Date :
1st Aug 2024
(Thursday)



Venue :



Time :
2pm to 4pm

Virtual Platform ZOOM

BEM Approved CPD/PDP Hours: 2 Ref No: IEM24/HQ/296/T (w)



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Speaker

Ir. Dr. M. Mohammad Effendy Ya'acob

Synopsis

This presentation delves into Agrivoltaic Technology, which merges agricultural practices with solar energy infrastructure to optimize land use and enhance agri-food security. It begins by introducing the principles of agrivoltaics, highlighting global applications and funding opportunities, and showcasing benefits like land use efficiency and water conservation. Videos from Lightsource BP Solar (US Solar Grazing) and the Colorado Agrivoltaic Learning Centre illustrate practical implementations.

The environmental and socio-economic advantages of agrivoltaics, including green job creation, are discussed, emphasizing the mitigation of environmental impacts such as land degradation. The presentation also addresses challenges like weed management in large-scale solar PV farms, highlighting issues like vertebrate pests and PV shading effects due to weeds, which affect energy generation. Solutions to these challenges are explored, including natural cooling mechanisms that increase DC generation by 3% and ground resistivity improvements.

Research outcomes and achievements, such as the Largest Herbal Agrivoltaic System for Natural Cooling Mechanism recognized by The Malaysia Book of Records and the Agrivoltaic Edu-Trail, are shared. Future plans for agrivoltaics in Malaysia are outlined, demonstrating its potential to promote sustainability within the solar industry, enhance food security, and support Malaysia's energy transition (NETR) to a resilient and sustainable future.

Speakers Biodata

Ir. Dr. M. Mohammad Effendy Ya'acob graduated his engineering degree in multiple disciplinary, bachelor degree in Electrical and Electronic in 2003 and continued M. Sc in Engineering Management by the year 2005 both in Universiti Putra Malaysia. He successfully defended his PhD Doctorate in March 2014 in the field of Electrical Power Engineering. Effendy who's Electrical Engineer by profession have worked more than 10 years in building maintenance, project engineering design and construction, and SHE (Safety, Health and Environment) concurrently. He was certified as Professional Electrical Engineer by the Board of Engineer Malaysia (BEM) in 2010 (PEPC in 2015) and become active member of The Institute of Engineers Malaysia (IEM). He was appointed as Senior Lecturer at the Department of Process and Food Engineering, Universiti Putra Malaysia since March 2015 and also affiliated with Advanced Lightning, Power and Energy Reserach (ALPER) Research Centre. He is actively involved with activities organised by IEEE PES Malaysia and the Malaysian Society for Agricultural and Food Engineers (MSAE). His research interests is in Green and Renewable Energy, AgriVoltaic System, Water Purification, Solar PV System, and Environmental Impact Assessment. His research team manage to secure the Malaysia Electric Supply Industries Trust Account (MESITA) Grants and received the first Malaysia Book of Records (MBR) for the Largest Herbal Agrivoltaic Farm for Natural Cooling Mechanism. He has made significant contributions to the development of agrivoltaic technologies, particularly in optimizing crop production beneath solar panels while maximizing energy generation efficiency. Dr. Effendy's expertise spans various aspects of agrivoltaic systems, including microclimate analysis, crop selection, cultivation methods, and economic viability assessments. Through interdisciplinary collaborations and innovative approaches, Dr. Effendy strives to advance sustainable agricultural practices and contribute to the transition towards a circular economy model.