

TECHNICAL TALK ON ZERO WASTE PALM OIL PROCESSING: AN INDUSTRY-UNIVERSITY INITIATIVE

Organized By: Women Engineers Section, IEM

BEM Approved CPD/PDP Hours: 2 Ref. No: IEM19/HQ/207/T

Date : 16th May 2019 (Thursday)
Time : 5.30 pm – 7.30 pm
Venue : Auditorium Tan Sri Prof. Chin Fung Kee, Third Floor, Wisma IEM
Speaker : Ir. Prof. Dr. Mohd Sobri Takriff

OPEN TO ALL

SYNOPSIS

The palm oil industry is the key driver for rural development in Malaysia that provides direct employment to half a million Malaysian populations and indirect employment to another 250,000 people. The industry is however facing numerous environmental challenges due to the wastes that are generated during the production process. For every ton of fresh fruit bunch (FFB) processed, 0.6 – 0.7 tons of effluent (POME) and 0.37 tons of solid wastes that is made up of empty fruit bunch, 0.22 tons (EFB), shell, 0.6 tons and fibers, 0.9 tons are generated. For the POME, the conventional treatment method is by using open ponds where it is subjected to a series of biological treatments. However this method suffers from emission of GHGs namely CH₄ and CO₂ due to the anaerobic and aerobic processes, respectively. According to RSPO GHG working group report in 2009, 70% of GHGs emission from palm oil milling is due to the POME. The fibers are used as boiler fuel while the EFB is used for mulching at the plantation and the shell and palm kernel cake is sold as low value product. Universiti Kebangsaan Malaysia together with Sime Darby Foundation and Sime Darby Research Sdn. Bhd. embarked on a collaborative initiative since 2010 to come with a practical strategy for zero waste palm oil processing. Zero waste means that whatever byproducts that are generated become resources to another party or process and waste is eliminated. This initiative is an example of industry-academia collaboration in tackling sustainability issues. The strategy that was jointly developed utilizes the liquid effluent and solid byproducts to generate renewable energy, produce biofertilizers, capture CO₂ and recycle the water, thus no waste being discharged. The developed technology is fully demonstrated in a pilot plant scale facility installed at one of Sime Darby Plantation palm oil mill in Selangor.

BIODATA OF SPEAKER



Ir. Prof. Dr. Mohd Sobri Takriff is a professor of fluid mechanics at Universiti Kebangsaan Malaysia and Co-Chair Professor of Universiti Kebangsaan Malaysia- Sime Darby Foundation Chair on Sustainable Development. Professor Takriff holds a PhD in Chemical Engineering from the University of Arkansas, USA. He is a registered Professional Engineer with the Board of Engineers Malaysia, a registered Chartered Engineer (CEng) with the UK Engineering Council and a Fellow of The Institution of Chemical Engineers, UK. Currently Professor Takriff is the Director of IDEA Center at Universiti Kebangsaan Malaysia and one of the Director of UKM Pakarunding Sdn. Bhd. He has completed more than 40 environmental consultancy projects with major corporations and multinational companies. His research interest addresses many aspects of environmentally sustainable biochemical and chemical processes. Professor Takriff is heading a research program on zero waste technology for palm oil industry. The research program is funded by Sime Darby Foundation and Sime Research Sdn. Bhd. through an endowment, scholarships and research grant with total fund of RM21.6 Millions. The research program involves collaboration with Wageningen University (The Netherland), Feng Chia University (Taiwan), Thailand Institute of Scientific and Technology Research (Thailand), Universitas Sumatera Utara (Indonesia), Lembaga Ilmu Pengetahuan Indonesia (LIPI) and several local universities. The scope of the research program covers the conversion of oil palm biomass into biofuels, organic fertilizer, chemicals, generation of clean energy, water recycling as well as techno-economic analysis. A pilot scale facility has been installed at one of Sime Darby Plantation's palm oil mills to demonstrate the zero waste technology that has been developed.

Ir. MAH SIEW KIEN

Chairman

Women Engineers Section 2018/2019

NOTE: Fees Announcement (Effective: 1st October 2017)

Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
 - (a) Online RM15
 - (b) Walk-In RM20

Non-Members:

- (i) Registration Fee : RM50
- (ii) Administrative Fee : RM20

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