

## Technical Talk on

### “The Potential for Mass Production of Nanocellulose from Oil Palm Biomass in Malaysia”

Organised by the Engineering Education Technical Division, IEM

in collaboration with Engineers Australia Malaysia Chapter (EAMC), and Institute of Mechanical Engineers Malaysia Branch (IMechE)

**BEM Approved CPD/PDP: 2 Hours**

**Ref: IEM19/HQ/332/T**

**Date** : 28 September 2019, Saturday  
**Time** : 11:00am – 01:00 pm  
**Venue** : CFK Auditorium, 3<sup>rd</sup> Floor,  
Wisma IEM, Petaling Jaya, Selangor  
**Speaker** : Assoc. Prof. Dr. Hidayah Ariffin

#### SYNOPSIS

Malaysia is the second largest producer of palm oil in the world with more than 100 million tonnes of oil palm fresh fruit bunches being processed annually. From this amount, only 24% is crude palm oil and the rest are mainly lignocellulosic biomass. Other than biomass, palm oil industry has a valuable untapped resource which is excess steam, generated from boiler fueled with oil palm biomass (OPB). These two resources are the key resources in cellulose nanofibrils (CNF) production as the mechanically processed CNF requires high energy for its production. CNF is a type of nanocellulose, which is an emerging nanomaterial with high acceptance rate worldwide due to its renewability, sustainability, biodegradability and superior mechanical properties. Vast research has been done to overcome the high energy consumption during CNF production, and it has been a hot topic discussed among the researchers and CNF producers globally.

Can palm oil industry solve this issue?

How the characteristics of oil palm biomass are different from other resources?

What are the potential applications of nanocellulose in Malaysia?

These are among the discussion topics during the talk.

#### SPEAKER BIODATA



**Dr. Hidayah Ariffin** is an Associate Professor and Innovation Coordinator at the Faculty of Biotechnology and Biomolecular Sciences, and a Deputy Director at the Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia (UPM). She obtained her Bachelor degree in the field of Process and Food Engineering in 2004 from UPM, before pursuing for her MSc degree in Bioprocess Engineering in the same year at the same university. She went to Kyushu Institute of Technology (Kyutech), Japan in 2006 to undergo her PhD study, and was conferred a PhD degree in Environmental Engineering in 2009.

Her research interests include biopolymers, biomass valorization, and utilization of lignocellulosic materials. At present, her research focuses on the production and applications of nanocellulosic materials, in which she has successfully commercialized nanocellulose from oil palm biomass through UPM Innohub start-up program. To date she has published more than 70 high impact journal articles with more than half as senior author, 1 edited book, 6 chapters in book and more than 30 conference papers. Dr Hidayah Ariffin has also invented multiple research products – 8 of them with intellectual property (IP) protection. She has been invited as speakers and has served as committee members in multiple international conferences. At present, she is the Editorial Board Member of Journal of Renewable Materials and one of the editors for Asian Federation of Biotechnology (AFOB) Newsletter. She is also a member of Research Committee for TAPPI Nano Division. Dr Hidayah is actively contributing as reviewer for high impact journals namely International Journal of Biological Macromolecules (Elsevier), Journal of Cleaner Production (Elsevier), Composites Part A (Elsevier), RSC Advances (RSC Publications), and Journal of Applied Polymer Science (Wiley).

**Ir. Assoc. Prof. Dr. Mohamed Thariq Bin. Haji Hameed Sultan**  
**Chairman**

Engineering Education Technical Division  
Session 2018 / 2019

#### ANNOUNCEMENT TO NOTE

#### FEES

(Effective 1<sup>st</sup> October 2017)

#### Members

Registration Fee : NO CHARGE

Administrative Fee :

<b>Online</b>	RM15
<b>Walk In</b>	RM20

#### Non-Members

Registration Fee : RM50

Administrative Fee : RM20

- 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](http://www.myiem.org.my)**

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