



THE INSTITUTION OF ENGINEERS, MALAYSIA

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PRE AGM TALK ON

“DUAL-FUEL TECHNOLOGY AND ITS APPLICATION IN DIESEL ENGINES”

(Organised by Marine Engineering and Naval Architecture Technical Division, IEM)

BEM Approved CPD/PDP: 2 Hours

Ref No: IEM15/HQ/283/T

Date : 29th August 2015 (Saturday)
Time : 9.00 am to 11.00 am (Refreshments will be served at 8.00 am)
Venue : TUS and C&S Lecture Rooms, 2nd Floor, Wisma IEM, Petaling Jaya
Speaker : Prof. Ir. Dr. Azhar Bin Dato' Abdul Aziz

SYNOPSIS

The talk offers an insight into the importance of dual-fuel diesel engines, the gaseous fuels they can use, and their operational practices. Reflecting cutting-edge advancements in this rapidly expanding field. The talk will also touch on:

- the benefits and challenges associated with internal combustion, compression ignition, gas-fuelled, and premixed dual-fuel engines
- explores methane and natural gas as engine fuels, as well as liquefied petroleum gases, hydrogen, and other alternative fuels
- examines safety considerations, combustion of fuel gases, and the conversion of diesel engines to dual-fuel operation
- addresses dual-fuel engine combustion, performance, knock, exhaust emissions, operational features and management, and
- Describe the legislations and standards required for the implementation of dual fuel technologies in diesel engines in some leading countries that have set the trend of its use in diesel engines around the globe.

At the end of the talk a few examples, especially in the marine and the power generation sectors, will be highlighted to provide the audience the impact of this technology upon the way diesel engines will be produced for future markets.

BIODATA OF SPEAKER

Ir. Dr. Azhar Abdul Aziz is a mechanical engineer graduated from Brighton Polytechnic, (UK, 1984). He received his MSc Mechanical Engineering (UTM, 1990) majoring in alternative fuel. He then goes on to obtain his PhD (from UMIST, 1999) for his research on temporal and spatial distribution of gas species in direct-injection diesel engine. He is now a member of IEM (since 1997) and holds a chartered engineer status (IMarEST), and was recently accepted as a member of the International Association of Engineers (IAENG). He is the Alumni of Harvard Business School (Malaysian Chapter) since July 2012.

Currently Ir. Dr. Azhar is a professor in UTM Johor, where he undertakes teaching, R&D activities related to fuels such as biodiesel and butanol, biomass densified fuels, thermal system, and fuel system for automotive engines. Previously he was the dean of Faculty of Mechanical Engineering and the Director of Innovation & Commercialisation Centre, UTM. As to date, he has implemented many consultancy work (since 1990) for private and government sectors. He has led 18 R&D projects and has published more than 180 scientific publications (journals and conference papers) in the field of thermodynamics, internal combustion engines and alternative fuels. He now holds 5 patents related to his R&D ventures.

Apart from his academic duties Ir. Dr. Azhar is the technical advisor to several SMEs, on matters pertaining to technology development on renewable energy and thermal systems, new refrigerants, diesel engines, and pumps. He is also the external program examiners to five local universities (UMP, UTHM, UTEM, UMP and UniKL) and a visiting professor of Shariff University in Iran.

Capt. Ir. Hj. Rani Mohd Raji (Rtd)

Chairman

Marine Engineering and Naval Architecture Technical Division, IEM

ANNOUNCEMENTS TO NOTE:

- Preferential admission to talk shall be accorded to IEM members (pre-registration and online registration are NOT required). Telephone and/or fax reservation will NOT be entertained.
- **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.
- For members of affiliated organisations, there will be no registration fee payable. However, they are requested to produce their membership card as proof of membership. For the list of affiliated organisations, please refer to IEM website at www.myiem.org.my under International/MoU.
- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- IEM members are required to produce membership cards for confirmation of attendance (CPD purpose).
- Latecomers will not be allowed to enter if the lecture hall is full nor be entitled to CPD.
- **IEM members who fail to produce their membership cards will be charged a fee of RM25.00. GST is inclusive.**

ADMINISTRATIVE FEE

- Kindly be informed that an administrative fee of **RM15** is payable for talks organized by IEM. GST is inclusive.
- The fee would be used to cover overhead costs, building maintenance expenses as well as contribute to Wisma IEM Building Fund.
- All contributions will be deeply appreciated by IEM.
- Student Members are however exempted.

CPD/PDP HOURS CONFIRMATION

Name:

Membership No:

Signature: