



# THE INSTITUTION OF ENGINEERS, MALAYSIA

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## TALK ON

### Computational Fluid Dynamics in the Oil and Gas Industry

(Organized by Oil, Gas and Mining Technical Division, IEM)

DATE : 23 April 2011 (Saturday)  
TIME : 9.30 to 11.30 a.m (Refreshments will be served at 9.00 a.m)  
VENUE : IEM C&S Lecture Room, 2<sup>nd</sup> Floor, Wisma IEM  
SPEAKER : Ir. Rafael Shamsudin & Zamir Rashid

BEM Approved  
CPD/PDP HOURS: 2  
Ref No: IEM 11/HQ/106 / T

## SYNOPSIS

Computational Fluid Dynamics (CFD) is a simulation tool that solves fluid flow, heat transfer, and other related phenomenon using mathematical equations. Used as a "Virtual Experiment" tool, CFD allows realistic assessment of full three dimensional processes equipment on the computer prior to full CAPEX investment. This results in higher product quality, performance and efficiencies.

This talk intends to raise awareness of participants on the increasing importance of CFD in the oil and gas industry. This is achieved by sharing real life examples of CFD applications in Malaysia and how it helped companies in understanding process and equipment issues and assisted them in making sound engineering decisions.

Examples include applying CFD:

- to find a working design for a conceptual design of a novel slug catcher on an FPSO
- to debottleneck an oil-water tilted plate separator
- to investigate severe metal thinning in a crude oil pipeline
- to understand the effects of subsea pipeline leaks on the surrounding environment
- to understand thermal plume behaviour on an FPSO

## BIODATA OF SPEAKER

Ir. Rafael Shamsudin started his professional career with Protek Engineers Sdn Bhd as Process Engineer after completing his BSc in Chemical Engineering from University of Southwestern Louisiana, USA. He joined Babcock K-W Sdn Bhd later on, but soon after he decided to venture into his own business, establishing Dinaz Engineering Sdn Bhd in 1997, providing generic process engineering design capabilities particularly for oil and gas industry. In 2007, he sold Dinaz engineering to Bumi Armada Bhd, which let Bumi Armada to have in-house engineering capabilities. He was appointed as Senior General Manager to lead the new company for 18 months. Ir. Rafael then stepped down and established Integrated Process Solutions Sdn. Bhd., again, providing process design and specialist studies for the oil and gas industry.

Zamir Rashid graduated with a BEng (Hons) in Mechanical Engineering in 2003 and a MSc in Thermal Power and Fluids Engineering in 2004 from UMIST Manchester. He started off his career as a CFD analyst in Lotus Engineering in Norwich, UK on a 2-year graduate training programme before coming back to Malaysia where he joined CAD-IT Consultants Sdn. Bhd., the sole representatives to ANSYS Inc, as the technical sales engineer for ANSYS Fluent and ANSYS CFX CFD software. During this time, Zamir conducted various training courses and supported CFD users in Malaysia, from various industries (such as Automotive, Aerospace, Semiconductor, and Oil and Gas) as well as from academic institutions (such as Uniten, UKM, UM, UPM, UTM and UTP). He is currently the Simulations Manager at Integrated Process Solutions Sdn. Bhd., a local Oil and Gas consultant providing process design services. Zamir is currently completing his MBA from Manchester Business School on a part time long distance basis, and is due to graduate in 2012. He loves cars and has a passion for motorsport.

Ir. AL-KHAIRI MOHD DAUD  
Chairman  
Oil, Gas and Mining Technical Division

### Announcement to note:

1. Talk is **STRICTLY** for IEM Members only (pre-registration is **NOT** required)
2. Limited seats available on a "first come first served" basis (maximum 100 participants)
3. Telephone and/or fax reservation will not be entertained
4. Latecomers will not be allowed entrance, if the lecture hall is full
5. Please bring along this flyer for confirmation of attendance (CPD purpose)

For IEM members, membership cards **MUST** be presented for identification purpose. Members who fail to show their membership card will be charged a fee of RM20.00.

### FUNDS FOR WISMA IEM

Kindly be informed that IEM will be charging participants RM10.00 administrative fee for talks organized by IEM. The fee would be used for overhead costs, building maintenance expenses as well as to support the purchase of the new building.

Students are however exempted. Your understanding is greatly appreciated.

### FOR OFFICE USE ONLY (CPD HOURS CONFIRMATION)

Name of Member: .....

M'ship No: .....

Date : 23 April 2011

Signature: .....

