

**Mechanical Engineering Technical Division**

The Institution of Engineers, Malaysia

Bangunan Ingenieur, Lot 60/62, Jalan 52/4

P.O. Box 223 (Jalan Sultan), 46720 Petaling Jaya, Selangor

Tel: 03-7968 4001/4002

Fax: 03-7957 7678

Email: [norfarehan@iem.org.my](mailto:norfarehan@iem.org.my)Website: [www.myiem.org.my](http://www.myiem.org.my)

Organised by:  
Mechanical Engineering Technical Division,  
The Institution of Engineers, Malaysia

**REGISTRATION (TWO-DAY COURSE ON "BOILER DESIGN & EFFICIENCY")**

Name(s)	IEM M' ship No. /Grade	Fees (RM)
SUB TOTAL		
ADD GST @ 6%		
<b>TOTAL PAYABLE</b>		

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Mobile: \_\_\_\_\_ Tel(O): \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

*(Please write clearly as the "Confirmation Notification" will be sent via email)*

Contact Person: \_\_\_\_\_ Designation: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**PAYMENT DETAILS** Cash RM \_\_\_\_\_

Cheque no. \_\_\_\_\_ for the amount of RM \_\_\_\_\_  
(non-refundable) and made payable to "THE INSTITUTION OF ENGINEERS, MALAYSIA"  
and crossed 'A/C Payee Only'.

**Terms & Conditions:**

- For ONLINE REGISTRATIONS, only ONLINE PAYMENT is applicable [via Credit Card]
- Payment via CASH / CHEQUE / BANK-IN TRANSMISSION / BANK DRAFT / MONEY ORDER / POSTAL ORDER / LO / WALK -IN will be considered as NORMAL REGISTRATION
- For online registrations, please note that **payment MUST be made on registration.**
- **FULL PAYMENT** must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non refundable. Registration fee includes lecture notes, refreshment and lunches.
- The Organising Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.

## Two-Day Course on "Boiler Design & Efficiency"

**Speaker**

Ir. Luk Chau Beng and Ir. Chia Chee Weng

**Date**

20 & 21 December 2016 (Tuesday & Wednesday)  
9.00am – 5.30pm

**Venue**

Auditorium Tan Sri Prof. Chin Fung Kee, 3<sup>rd</sup> Floor,  
Wisma IEM, Petaling Jaya, Selangor Darul Ehsan

**REGISTRATION FEES (BEFORE GST)**

Grade	Online Fee	Normal Fee
IEM Student Member	RM 250.00	RM 280.00
IEM Graduate Member	RM 500.00	RM 600.00
Corporate Member	RM 800.00	RM 900.00
Non IEM Member	RM 1100.00	RM 1200.00

**Closing Date: 14<sup>th</sup> December 2016**

**BEM Approved CPD/PDP Hours: 14**  
Ref. No: IEM16/HQ/443/C

**GST is implemented**  
effective 1 April 2015

## SYNOPSIS

Steam is highly considered as one of the most critical resource in today's industrial world. It is widely used in various industries ranging from the power plants, paper & wood products factories, food & beverage processing plants, cooling & heating of large buildings and powering ships. A boiler (or steam generator, as it is commonly called) is a mechanical system that generates steam at the desired rate at the desired pressure and temperature by burning fuel in its furnace. The boiler system is a complex integration of boiler tubes, furnace, superheater, reheater, evaporator, economizer and air preheater along with various auxiliaries such as fuel handling system, burners, pumps, fans, stokers, air pollution control equipments, ash-handling equipments & stack etc. Boiler is the heart of any industrial plant to produce hot water, saturated steam and superheated steam for various process applications, and they are range from small package producing under five tons of steam per hour to several hundred tons of steam per hour in the utility boiler. (Depending on the design & application)

The steam plants of today (consisted of boilers) are a combination of complex engineered systems that work to produce steam in the most efficient and economically feasible manner. A good design and operational management is important to ensure high boiler efficiency, safety and reliability. Performance of a boiler reduces over time due to various reasons such as poor combustion, heat transfer, fouling, poor fuel, and water, operation and maintenance quality. With increasing fuel cost, greater attention is being given to improvement of the combustion efficiency. Most of the new boilers are designed to be fully automated; built in a variety sizes, shapes and forms to fit conditions peculiar to the individual plant and to meet varying requirements. Performance monitoring pays-off in reducing fuel cost. Any observed abnormal deviation should be investigated to pin point the problem area for necessary corrective action. Apart from it, the boiler design shall also take into account the safe operation that is mandatory under regulations. Safety is a major concern in all modern steam boiler systems, where low cost steam and electricity must be produced with a minimum impact on the safety of workers & machines. To the operator of any boiler system, the issue of reliable, safe, and efficient operation remains the utmost important factor to be considered.

## COURSE OBJECTIVE

The main objective of this course is to provide the basic concept and understanding of the boiler system from the design & efficiency perspectives. We hope that the boiler owners and operators are able to select and operate the boiler in a more efficient and safe manner, starting from the boiler design & selection stage till the operation & maintenance stage. This course will introduce the basic guidelines and standard requirements of the boiler design from the local factory machinery acts/regulations and international boiler ASME codes. Apart from it, it will also describe the various systems and equipments of steam generators that are so important to everyday life, whether it be for the generation of electricity, for heating, or for a process that leads to a product. In addition, this course will also cover the standard practice that any operator should follow to ensure safe, continuous service and efficient operation. It is intended to assist the operator in the correct use of the equipment, to recognize unsatisfactory conditions and to take the necessary corrective measures before dangerous and costly emergencies develop. In summary, this course will provide you experiences in efficient boiler design, design codes, selection of boilers, optimizing steam system efficiency, best practices in operation and maintenance to achieve reliability, safety and efficiency.

## CANCELLATION POLICY

IEM reserves the right to postpone, reschedule, allocate or cancel the course. Full refund less 30% if cancellation is received in writing more than 7 days before start date of the event. No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with prior notification and substitute will be charged according to membership status.

## BIODATA OF SPEAKER

Ir. Luk Chau Beng is Professional Engineer and holds a Masters Degree in Engineering Management, a Bachelor degree in Mechanical Engineering, a First Grade Steam Certificate and a First Grade Internal Combustion Engineers Competent Certificate issued by Department of Safety & Occupational Health, Malaysia. He had previously completed many turnaround in the large power industries successfully and possess vast experience in boilers and pressure vessels. Apart from it, Ir. Luk was the past Chairman of the Mechanical Engineering Technical Division of IEM and also a former Council Member. He holds several chairmanships which include Chairman for ISO TC 11 on boiler and unfired pressure vessel, Chairman of TC for mechanical engineering components with the Malaysian Standardization & Research Organization (SIRIM) and chaired the draft on Malaysian energy efficiency guidelines for pumps, compressor, boilers and thermal oil heater with Malaysian Energy Center and KeTTHA. Presently he is a Head of Department at a Power Plant in Malaysia.

Ir. CW Chia is a Mechanical Engineer graduated from University of Malaya (UM) in 2004. He is a certified Professional Engineer by the Board of Engineers Malaysia (BEM) and also a corporate member with the Institution of Engineers Malaysia. (IEM) Currently, he is a member of sub-committee on Projects for Mechanical Engineering Technical Division under IEM. He is also appointed as IEM's representative on technical committee of electromagnetic field for Malaysian Standardization & Research Organization (SIRIM). Ir. Chia had more than 10 years working with renewable energy sector. His experiences cover engineering, design consultancy, installation, testing, commissioning, maintenance and project management services for waste (biomass and incinerator) and coal power plants. Currently, he owns a project management and engineering consultancy firm provides the complete range consultancy services from feasibility studies to testing and commissioning for biomass boiler and power plant development projects.

## TENTATIVE PROGRAMME

TIME	DAY 1	DAY 2
08:30 – 09:00	<b>Registration</b>	
09:00– 10:30	Steam Fundamentals	Managing Boiler Efficiency
10:30 – 11:15	<b>Tea Break</b>	
11:15 – 13:00	Steam Fundamentals	Managing Boiler Efficiency
13:00 – 14:00	<b>Lunch</b>	
14:00 – 15:30	Boiler Design & Selecting Issues	Safety in Boiler Operations
15:30 – 15:45	<b>Tea Break</b>	
15:45 – 17:00	Boiler Design & Selecting Issues	Safety in Boiler Operations
17:00 – 1730	Questions & Discussions	Questions & Discussions
1730	End of Day 1	End of Course

## PERSONAL DATA PROTECTION ACT

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at <http://www.myiem.org.my> and I agree to IEM's use and processing of my personal data as set out in the said notice.