

Programme Details

Date	: 25-26 Jun 2024
Time	: 9am – 6pm
Venue	: IES Academy@Jurong East
	80 Jurong East Street 21, #04-10 Devan Nair Institute for Employment and Employability Singapore 609607
CPD	: (SCEM) & (PEB) – TBC
Fees*	: \$599.50(IES Member), \$708.50 (Non-Member)

* Inclusive of 9% GST and course materials.

 st Certificate of Attendance will be given to participants with <u>100% attendance</u>

Introduction

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Boilers are used in the industries in Singapore and in the region at many different pressures and temperatures with large variations in output and with different fuel burning systems.

Most of the time, the energy efficiency of the boilers is either

ignored or overlooked by the engineers involved with the boilers. For considering and incorporating energy efficiency in the boilers systems, it is important to identify the root causes of the boiler inefficiency by the practicing engineers along with the state-of-the-art boiler and control technologies available in the market.

Therefore, a good understanding of the boiler systems along with the various optimisation techniques using the available state-of-the-art technologies is of paramount importance. This two-day course aims to help the industrial professionals to achieve a good understanding of the different types of boilers used in Singapore and the region which will equip them with the necessary expertise for bringing in the best boiler efficiency for the boilers and achieving energy savings and significant amount of carbon abatement saving the environment as well.

Learning Outcome

Upon completion of this course, the participants should be able to develop good understanding of:

- (i) Good understanding of steam technologies
- (ii) Understanding of different types of boilers
- (iii) Parameters affecting boiler performance
- (iv) Boiler performance indicators
- (v) Boiler optimisation techniques
- (vi) Boiler system economic analysis

Course Syllabus

Day 1:

Course Syllabus

- Steam technologies
- Steam terminologies/parameters
- Steam property table
- Determination of steam parameters from steam property table
- Types of steam
- Steam requirements for processes heating and power generation
- Fundamentals of boilers
- Classifications of boilers
- Fire tube and water tube boilers
- Fuels used in the boilers

Course Syllabus

Day 2:

Course Syllabus

- Boiler draught
- Importance of correct air-fuel ratio
- Boiler blowdown
- Boiler optimisation techniques
- Boiler economiser
- Boiler performance indicators
- Boiler steam to fuel efficiency
- Boiler combustion efficiency
- Boiler performance evaluation
- Once through modular boilers and their applications
- Boiler system economics
- Boiler case studies

Trainer's Profile



Dr. Jahangeer K. Abdul Halim

Dr Jahangeer K. Abdul Halim is a Deputy Director with LJ Energy Pte Ltd. (an accredited ESCO) providing consultancy services for both commercial and industrial sectors in the areas of mechanical and energy systems. Dr Jahangeer's areas of specialization include: HVAC, cogeneration and trigeneration, data centres, cleanrooms, boiler and compressed air systems as well as building energy simulation and energy optimization.

He has also authored chapters in a number of technical books and research papers in international peer-reviewed journals. He is a registered Singapore Certified Energy Manager (SCEM). He is also a member of Institute of Engineers Singapore (IES) since 1999. Dr Jahangeer has also been providing training for local and international practising engineers from the mechanical and energy services sector including the Singapore Certified Energy Manager (SCEM by NEA) and Green Mark Facility Manager (GMFM by BCA) candidates.