



## Dr Simon Judd

Maersk Oil Professorial Chair in  
Environmental Engineering,  
Gas Processing Centre  
Qatar University

Simon Judd was Professor in Membrane Technology at Cranfield University for 24 years prior to taking up his current position. He has over 25 years' experience in academic/industrial research and development incorporating all aspects of Water and Wastewater Treatment technology, with an extensive network of contacts within the water industry both nationally and internationally from procuring and/or managing a number of large collaborative R&D programmes. He was responsible for initiating one of the original academic studies of physical conditioning of water for scale suppression in the mid 1990s, leading to a number of technical publications and a highly-cited early review of the subject.

Prof. Judd has been responsible for the teaching of water chemistry and treatment process technologies relating to pure water on the University's MSc courses Water and Wastewater Technology/Engineering. He has delivered bespoke short courses in water and wastewater treatment across four continents, and is both a Fellow of the Royal Society of Chemistry and an Associate Fellow of the Institution of Chemical Engineers

**The Gas Processing Center, Cordially invites you to the Course:**

## BOILER WATER TREATMENT

DAY & DATE: January 15-16, 2017

TIME: 8:00 AM to 3:00 PM

VENUE: New Research Complex (H10) Room F101

Course fees: **2500 QAR**

### About the Course:

Water used in boilers for raising steam is required to be of a standard which ameliorates inherent problems of corrosion and scale formation within the boiler and ancillary components. The course provides a guide to the individual unit operations used to attain the required water quality specification, as well as describing facets of the overall water treatment system. The key unit process technologies for ion removal are described, namely ion exchange (softening, dealkalisation and deionisation), reverse osmosis, and electrolytic deionisation. Chemical treatments considered include conditioning for mitigation of scaling (precipitation, threshold inhibition and dispersion) and corrosion (chemical treatment and oxygen scavenging). Processes for the stripping of dissolved gases and volatile species are also outlined. Applications include both make-up water and condensate polishing, with impacts of key water constituents and boiler process application, configuration and operation (temperature, pressure and blowdown) discussed. Case studies are provided, as well as a forum for further discussion.

## **Course content**

### **Introduction to boiler technology**

- History, types, terminology, attributes"

### **Water chemistry**

- Constituents and pH
- Concentration units, example calculations

### **Operation**

- Steam purity, scaling, corrosion

### **Internal treatment**

- Chemical dosing

### **External treatment**

- Deaeration, ion exchange, membrane technology

### **Design calculations**

## **The course will provide an understanding of:**

- Governing water chemistry
  - Carbonate, hardness and pH
  - Scaling and corrosion
- Fundamentals of treatment technologies
  - Internal treatment (chemical dosing)
  - External treatment
- Basis of boiler water treatment process technology design and operation, including treatment schemes and residuals

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## **Eligibility criteria:**

The course is designed for engineers, chemists, operators and other stakeholders within power utilities and other industries employing boilers.

## **Gas Processing Center certificate:**

All the attendee will receive a certificate for attending this training course.

**For more information please contact:**

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