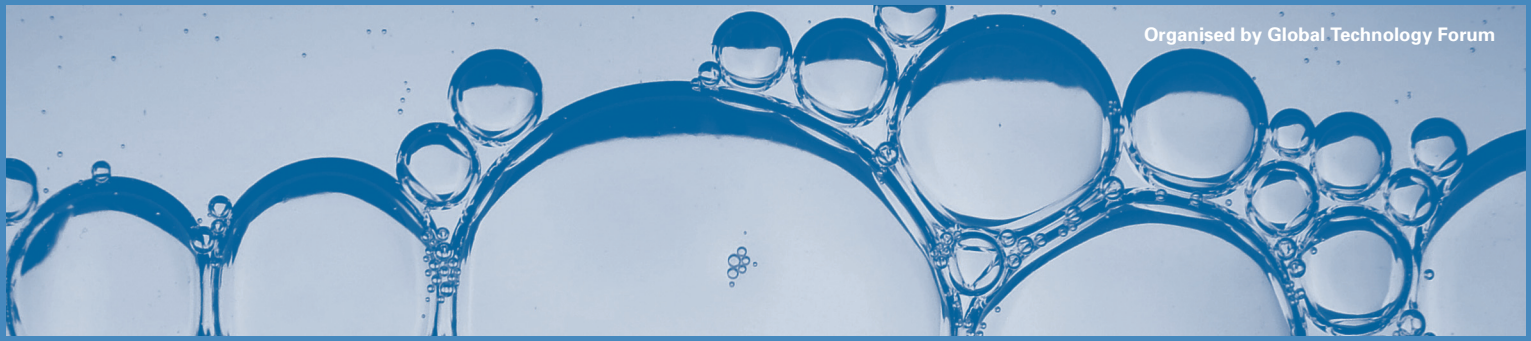

Organised by Global Technology Forum

Introduction to refining

ERTC Training

12 – 14 April 2010

London

gtforum.com/introrefining

Key topics:

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Hydroskimming refinery, complex refinery, petrochemical refinery

Conversion processes

Sulfur recovery

Process control

Troubleshooting and refining processes

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Introduction

The ERTC Introduction to refining course is a comprehensive core skills course for professionals dealing with all aspects of the refining industry.

Those who are experienced in other fields and seek a review of the fundamentals of refining will also find this course most beneficial.

Who should attend?

The course will be highly valuable to all engineers involved in the operation, design and troubleshooting of all refining facilities.

Additionally, the course will be useful to any technical personnel wishing to gain a perspective of how refining fits into the operation of an integrated oil company.

Learning objectives

Upon completion of the course participants should have:

- A comprehensive overview of the refining process from crude sourcing and analysis to product specifications and applications
- Knowledge of fractionation of heavy and light hydrocarbon systems
- Knowledge of hydroprocessing catalytic systems
- Knowledge of conversion processes.

In addition a systematic approach to troubleshooting of refining processes is developed including a section on root cause analysis.

"Good delivery and appropriate agenda to the audience needs, with lots of industry and practical knowledge"

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Course description

The refinery is the engine of the oil industry where crude is converted into fuels and lubes available for consumption by it's customers. This needs to be done safely and efficiently.

This course gives an overview of the elements of the refining process and provides an insight into the criteria used to size and rate the individual components. Starting with the feedstock, the student is gradually introduced to the various processes used to convert the crude into finished product. Troubleshooting of the processes and components is then introduced to allow the student to analyse a system and restore it to a safe and operable state.

Upon completion of this course, participants will have gained an understanding of the processes, equipment and procedures of the design, operation and control of refineries.

The course is designed to complement and supplement material presented in other ERTC training courses and conferences.

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Course programme

Monday 12 April

Crude Oil Introduction
- Origin, production and transport of crude oil

Crude Oil and Product Types
- Classification of crudes
- Product specifications of crude oil cuts
- EU specifications for gasoline, diesel, jet fuel
- On line blending of products

General Refinery Processes
- Refinery overview and organization
- Hydroskimming refinery, complex refinery, petrochemical refinery
- Refinery flow chart of 200.000 bbl/d refineries
- Petroleum chemistry
- Distillation basics
- Trays, multidowncomer trays, structured packing

Conversion Processes
- Fixed bed hydrocracking
- Ebullating bed hydrocracking
- Visbreaking
- Thermal cracking
- Delayed coking
- Fluid coking
- Fluid catalytic cracking

Q&A Session, exercises

Tuesday 13 April

Octane Processes
- Alkylation (HF alkylation, sulfuric acid alkylation)
- Reforming (CCR reformer, catalyst regeneration, benzene precursors)
- Isomerisation (including de-isopentanizer and de-isohexanizer)
- MTBE/ETBE

Hydrotreating Processes
- Steam reformer (hydrogen plant)
- Chemistry of hydrotreating
- Catalysts
- Product yields and properties
- Operating conditions and process variables
- Desulfurisation, aromatic saturation
- Mild hydrocracking
- Upgrading of aromatic gasoil and kerosene

Sulfur Recovery
- Amine wash
- Amine regeneration
- Claus process

Waste Water Treatment
- Sewer systems
- API separator
- Corrugated plate separator
- Biological waste water treatment

Q&A Session, exercises

Wednesday 14 April

Flue Gas cleaning
- Flue gas denitrification
- Flue gas desulfurization
- SNOx

Synergies Refining/Petrochemicals
- Integration of a steam cracker into a refinery

Troubleshooting
- Root cause analysis
- Troubleshooting aids
- Distillation
- Fouling / coking
- Pump failures
- Incident causation
- Control systems
- Case studies

Q&A Session

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Training course fee (per delegate)

For bookings received before 8 March 2010 Course Fee = **£1999 +17.5% VAT**
A late booking supplement of £300 +17.5% VAT will be applied to all bookings received after 8 March 2010

Reservation form

Please make a reservation for the following delegate:

Title First name

Surname

Position

Company

Address

Telephone

Fax

E-mail

Payment details

I wish to pay by:

◯ **Credit Card** ◯ **Cheque** ◯ **Bank Transfer**

Please note: Card payments to be made at time of reservation

◯ MASTERCARD ◯ VISA ◯ AMERICAN EXPRESS ◯ MAESTRO

Card holder's name

Card number

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Security no

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5 easy ways to book

1
Register online at:
gtforum.com/introrefining

2
Email us at:
training@gtforum.com

3
Complete and return this form by fax to:
+44 (0)20 7504 3730

4
Complete and return this form by mail to the address overleaf

5
Simply call with details on:
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2010 Course listings

Blending
10 – 12 March 2010, London
www.gtforum.com/blending

Watertreating
17 – 19 March 2010, London
www.gtforum.com/watertreating

FCC
24 – 26 March 2010, London
www.gtforum.com/fcc

Asset Management
March 2010, London
training@gtforum.com

Introduction to Refining
12 – 14 April 2010, London
www.gtforum.com/introrefining

Distillation
5 – 7 May 2010, London
www.gtforum.com/distillation

Improving Refinery Profit Margins
May 2010, London
www.gtforum.com/refiningeco

Delayed Coking and Thermal Processes
June 2010, London
www.gtforum.com/delayedcoking

Hydrogen Production by Steam Reforming
June 2010, London
www.gtforum.com/hydrogenprod

Wastewater Treatment
September 2010, London
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Crude Oil Desalting
September 2010, London
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Hydrocracking
October 2010, London
www.gtforum.com/hydrocracking

Catalytic Reforming
December 2010, London
www.gtforum.com/reforming

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For more information, please visit the individual website listed above or send us an enquiry via **training@gtforum.com**

Course presenter

Peter Reich-Rohrwig graduated from University of Vienna in organic chemistry (Ph.D.) in 1970.

After a year and a half of postdoctoral research at Ohio State University, he started at Chemie Linz AG (nowadays AMI) doing research and pilot plant work. In 1975 he joined OMV, Schwechat Refinery, holding different positions in operations, petrochemistry, technology, heat recovery, ecology and training.

Since 2004 PRR works as a consultant for OMV and other companies. He supported an energy savings project, a data reconciliation program and trained many engineers from Schwechat Refinery as well as engineers from Romanian and Abu Dhabi refineries and engineering companies in the mineral oil business.

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