Hydrotreating & Hydrocracking Process Technology

18 - 22 Nov 2018, Dubai
Introduction

This comprehensive Hydrotreating & Hydrocracking Process Technology training seminar overlays the process fundamentals and sound knowledge of Hydrotreating and Hydrocracking processes where Hydrogen is a key material in the upgrading and treatment of refinery products and fractions. A review of the state-of-the-art in process design, energy and mass integration will be presented as potential key improvements.

In-depth practical review of Hydrotreating / cracking technologies is provided across the training seminar topics. The contents focus on the Hydro-conversion of heavy products, distillates, diesel, and naphtha into other hydrogenated / lower molecular weight products, besides saturated products with enhanced Cetane number, free of sulfur, nitrogen and metals. The training seminar also discusses some process design/chemistry and engineering principles for such processes and presents scope for improvements.

This training seminar is valuable to engineers / scientists, designers and researchers involved in the industry of Hydro-conversion in refiners. Yet it is most beneficial to those professionals with experiences in other fields and willing to acquire knowledge in Hydro-conversion processes.

Objectives

By the end of this training seminar, participants will be able to:

- Develop deep understanding of mass / H2/ energy balance in refining processes
- Gain in-depth knowledge of the state-of-the-art of material and energy integration
- Evaluate different flow schemes for hydrotreating and hydrocracking processes
- Manipulated process design and operation variables for better H2-conversion performances
- Master experiences of chemistry / kinetics, function of catalysts, clean production, environmental issues of very typical upgraded fuel productions

Training Methodology

This training seminar will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes training seminar materials, proposed reading / state-of-the-art of the training seminar content, lecture talks, exercises, team works and discussions, and solved applications. The nature of the training will be interactive and a practice of how to think, not what to think will be mastered. The philosophy of the training seminar delivery will be:

- Development of a deep understanding of the-state-of-the-art of all contents and topics
- Analysis and improvement of some case studies with respect to economics and environment
- Practices in process design / simulation of specific applications based on Excel or commercial packages if available

Who Should Attend?

The training seminar is of great significance to process/operational engineers, technicians, control engineers, designers, scientists and researchers working closely in the refining industry in general or particularly Hydrocracking, Hydrotreating processes. It is also substantially beneficial to other professionals and experts who have considerable experiences in other fields of business and keen to gain a sufficient knowledge in the particular industry of Hydro-conversion. All levels of professionalism are eligible for the training seminar, ranging from young-fresh personnel to highly experienced ones.

This training seminar is suitable to a wide range of professionals but will greatly benefit:

- Process and Development Engineers
- Plant Managers
- Operational Engineers / Control Personnel
- Researchers / Scientists
- Project and Design Engineers
# Seminar Outline

## Day 1

**Introduction: The Basics**
- Fundamentals of Mass / Hydrogen and Energy Balance in Refineries
- State-of-the-Art of Material and Energy Integration
- Fundamentals of Petroleum Refinery Processing: Downstream Crude Oil Refining
- Products’ Specifications and Characteristics
- Process Design / Optimisation and Heat Integration Schemes
- Environmental and Economic Issues

## Day 2

**HydroTreating – Fundamentals and Principles**
- Introduction to Hydro-Conversion Processes and H2 Sources
- Process Flow Schemes
- Process Chemistry and Kinetics
- Catalysts / Heat of Reactions
- Operating Conditions, Principles and Design Considerations
- Hydrogen Requirements for Hydrotreating

## Day 3

**HydroTreating – Advanced Processing**
- Reactors Design
- Applications to Naphtha, Middle Distillate, Gas Oil
- Atmospheric Residue Desulphurisation
- Saturation of Benzene in Gasoline
- Potential Improvements for Material and Energy Savings
- Clean Diesel Hydrotreating Process Technology - Critical Issues

## Day 4

**Hydrocracking – Fundamentals and Principles**
- Feed Stocks and Products
- Process Chemistry / Kinetics
- Catalysts / De-activation and Re-Generation
- Products Quality and Yields: Process Configuration, Catalyst Type and Operating Process Variables and Parameters
- Reactors Technology for Hydrocracking
- Single Stage Hydrocracking Process Technology

## Day 5

**Hydrocracking – Advanced Processing**
- Two Stage Hydrocracking Process Technology
- Process Design Features
- Hydrogen Balance and Consumption
- Scope for Process Integration Improvements
- Hydrogen Balance / Integration and Management
- Steam/Methane Reforming

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PAYMENT DETAILS

☐ Please invoice my company
☐ Cheque payable to GLOMACS
☐ Please invoice me

CERTIFICATION

Successful participants will receive GLOMACS’ Certificate of Completion

4 WAYS TO REGISTER

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TERMS AND CONDITIONS

• Fees – Each fee is inclusive of Documentation, Lunch and refreshments served during the entire seminar.
• Mode of Payment – The delegate has the option to pay the course fee directly or request to send an invoice to his/her company/sponsor. Credit card and cheque payments are both acceptable.
• Cancellation / Substitution – Request for seminar cancellation must be made in writing & received three (3) weeks prior to the seminar date. A US$ 250.00 processing fee will be charged per delegate for each cancellation. Thereafter, we regret that we are unable to refund any fees due, although in such cases we would be happy to welcome a colleague who would substitute for you.
• Hotel Accommodation – is not included in the course fee. A reduced corporate rate and a limited number of rooms may be available for attendees wishing to stay at the hotel venue. Requests for hotel reservations should be made at least three (3) weeks prior to the commencement of the seminar. All hotel accommodation is strictly subject to availability and terms and conditions imposed by the hotel will apply.
• Attendance Certificate – a certificate of attendance will only be awarded to those delegates who successfully completed/attended the entire seminar including the awarding of applicable Continuing Professional Education Units/Hours.
• Force Majeure – any circumstances beyond the control of the Company may necessitate postponement, change of seminar venue or substitution of assigned Instructor. The Company reserves the right to exercise this clause and implement such amendments.
• Fair Access / Equal Opportunities – in the provision of its services as a world-class Training Provider, the Company is committed to provide fair access/equal opportunities throughout the delivery of its courses and assessment leading to the completion of training seminars, or 3rd party qualifications/certifications.

Code Date Venue Fees
OG067 18 - 22 Nov 2018 Dubai $4,750

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