

Fluid Catalytic Cracking

1 – 3

June 2011

London

gtforum.com/fcc



Training

Key topics:

- FCC Overview
- Key Process Reactions
- Critical Process Balances
- Operating Strategies
- Feedstock Effects
- Catalyst Technology
- Equipment Technology
- Mitigating Stack Emissions
- Open Forum/Q&A
- FCC Monitoring
- FCC Optimization
- FCC Troubleshooting

Introduction

As refiners worldwide see higher crude oil prices, a variety of crude sources and continued demand for clean transportation fuels, a sound knowledge of fluid catalytic cracking (FCC) technology is essential.

The FCC is the conversion 'heart' of the fuels refinery, with over half the world's gasoline produced by this process, as well as heating oil, fuel oil, propane, butane and chemical feedstocks. Understanding its function and operation is key to understanding how a modern refinery produces the finished product. The frequency with which this operation is used for conversion in refineries indicates that designing and operating the FCC in an optimal manner can realise substantial returns.

Over the 60-year life of this process major changes have occurred in terms of unit design and operation, catalytic and additive functionalities and characteristics of the feedstocks processed.

Who should attend?

The ERTC FCC training course is a comprehensive core skills course for professionals dealing with all aspects of the Fluid Catalytic Cracking Unit.

The course will be highly valuable to all engineers involved in the operation and design of FCC facilities. Additionally, the course will be useful to any technical personnel wishing to gain a perspective of how the FCCU fits into the operation of a complete refining plant.

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

Learning objectives

Upon completion of this course, participants will have gained a solid understanding of the key elements associated with the design, operation and control of FCCs.

This will include the impact of feed quality, catalyst, operating conditions and unit design on product yields, product qualities and heat balance. In addition they will have gained some valuable insight into how to optimise, debottleneck and troubleshoot their FCC unit.



Course description

The petroleum industry operates the FCC as a primary source of conversion. This course covers the core elements of FCC process technology.

A solid foundation is laid by covering FCC plant design features and processing basics. Key variables that affect product yields and selectivity are described and their impact on the optimisation of the unit operation discussed. Techniques used for monitoring and improving the FCC operation are also presented. Finally, a framework is presented for troubleshooting operating problems and, throughout this discussion, participants are encouraged to describe their specific challenges.

The scope of the course includes the core of most FCC problems and attempts to cover solutions useful to design and operating engineers.

Concerns associated with processing heavy feeds are covered.

This course will provide an overview of the diverse nature of the FCC processes, depending on the feedstocks used, products made and the environmental issues. It will address process integration issues, which are vital for economic viability.

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





Course programme

The ERTC FCC course provides delegates with a practical understanding of the FCC process along with the know-how for improving performance and profitability. Facts and concepts will be presented with an interactive approach, encouraging delegates to share their real-world applications and challenges. A key objective is to train all delegates so that each will make a positive difference in their area of their FCC responsibility as soon as they return to their workplace.

The entire FCC course covers both fundamental and advanced topics. FCC fundamentals are presented during the first two days of the course, followed by a third day covering more advanced material. Delegates wishing to learn the process basics or who may be new to the FCC process area may opt to register for the first 2 days. Delegates having a good understanding of the process and seek more advanced material are encouraged to register for the full 3 day course. Each day builds upon the previous to provide delegates with the process knowledge needed to address their education and business challenges.

Wednesday 1 June

FCC DESIGN, PROCESSING AND OPERATING BASICS

FCC Overview

Design and technology evolution / Feedstock flexibility / Product distribution & recovery / Flue gas processing & emissions

Key Process Reactions

Cracking-side / Combustion-side

Critical Process Balances

Material / Heat / Pressure

Operating Strategies

Process variable impact on product yields, selectivities, and qualities

Thursday 2 June

FCC FEEDSTOCK EFFECTS AND TECHNOLOGY APPLICATIONS

Feedstock Effects

Feedstock property impact on product yields, selectivities, and qualities

Catalyst Technology

Composition / Cracking selectivities / Product qualities / Reformulation / Additives

Equipment Technology

Cracking-side / Combustion-side

Mitigating Stack Emissions

Environmental control additives / Flue gas equipment technologies

Open Forum/Q&A

Friday 3 June

FCC PROCESS IMPROVEMENT AND PRACTICAL PROBLEM SOLVING

FCC Monitoring

Cracking-side / Combustion-side / Catalyst quality / Feedstock quality

FCC Optimization

Limits & constraints / Process modeling / Feedstock selection / Technology options & selection procedures

FCC Troubleshooting

Cracking-side / Combustion-side

Open Forum/Q&A



Training course fee (per delegate)

Please indicate which days you will be attending:

Attend days 1 & 2 – **£1599 +20% VAT** Attend days 1, 2 & 3 – **£1999 +20% VAT**

A late booking supplement of £300 +20% VAT will be applied to both sets of prices received after 6 May 2011

Reservation form

Please make a reservation for the following delegate:

Title	First name
<hr/>	
Surname	
<hr/>	
Position	
<hr/>	
Company	
<hr/>	
Address	
<hr/>	
<hr/>	
Telephone	
<hr/>	
Fax	
<hr/>	
E-mail	
<hr/>	

5 easy ways to book

1
Register online at:
gtforum.com/fcc

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:
+44 (0)870 240 8859

Event code:
4509/11

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

Start date

Expiry date

Security no

_____ Last 3 digits on back of card (AMEX – 4 digits on front of card)

Signature

Bank transfers/cheques only – not credit cards

Make cheque payable to: **Global Technology Forum**

Transfers to:	GTF
IBAN BIC:	NWBK GB2L
Sterling IBAN:	GB39 NWBK 5430 3671 0853 27
Euro IBAN:	GB74 NWBK 6072 0406 6529 72
Dollar IBAN:	GB16 NWBK 6073 0106 3861 99

**Fluid Catalytic
Cracking**

**1 – 3 June
2011
London**
gtforum.com/fcc



Training

2011 Course listings

Blending

7 – 9 March 2011, London
www.gtforum.com/blending

Improving refinery profit margins

21 – 23 March 2011, London
www.gtforum.com/refineryprofit

Introduction to refining

4 – 6 April 2011, London
www.gtforum.com/introrefining

Distillation

4 – 6 May 2011, London
www.gtforum.com/distillation

Fluid Catalytic Cracking

1 – 3 June 2011, London
www.gtforum.com/fcc

Wastewater treatment

September 2011, London
www.gtforum.com/wastewater

**Technology selection and
implementation**

22 – 23 September 2011, London
training@gtforum.com

Catalytic reforming

September 2011, London
www.gtforum.com/reforming

Hydrocracking

October 2011, London
www.gtforum.com/hydrocracking

Energy efficiency

9 – 11 November 2011, London
training@gtforum.com

—

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



Course presenter

Robert A. Ludolph is the Principal Consultant and Founder of Ludolph Technology and Consultancy, Inc. Bob has over 33 years of refining experience in fuels and lubricating oil processes. He served as the fluid catalytic cracking process specialist for a large independent U.S. petroleum refining company for 25 years. Bob has held various technical positions in Research & Development and Refining Staff departments, supporting up to eight company facility locations. Chief customers have been Refinery Technical Service, Operations, Business Planning, Environmental, as well as centralized staff departments, refining management and senior company leadership.

Bob approaches FCC technology implementation and unit optimization from a refiner perspective. He brings the experience of assessing and implementing process technologies;

on-site process support during FCC shutdowns; pilot plant, bench scale, and in-plant evaluation experience for optimization and troubleshooting; economic evaluations of alternative processing options, plant or refinery re-configurations, feedstock/crude selections, and process technology enhancements; process simulation modeling to support strategic company projects, advanced process control applications and refinery linear program optimization work.

Bob also has extensive experience in leading teams for troubleshooting and optimizing the plants. He has led best practice forums which facilitated the evaluation, transfer, and application of process technology and know-how throughout the represented locations. Bob mentors developing process engineers through remote and face-to-face interactions. He has also managed process specialists, student process

engineers and technicians throughout his career.

Bob actively participates in or leads committees and events for the National Petrochemical & Refiners Association. For the Cat Cracking Seminar he has served as a Program Committee member, Q&A Panelist, Workshop Presider and Presenter. For the Q&A and Technology Forum he has served as a Screening Committee member, Q&A Panel Presider, Principles & Practices Workshop Presider and Presenter. Bob was an active member of the FCC EPA Consenters Group, an industry forum for sharing the know-how of implementing process technology to meet refiner emission requirements.

Bob holds B.S. and M.S. degrees in Chemical Engineering from Rutgers University, is a registered Professional Engineer, and a member of the American Institute of Chemical Engineers.



Adriana Lobo
 Global Technology Forum
 Incisive Media
 Haymarket House
 28-29 Haymarket
 London SW1Y 4RX



Training
 Meetings of minds

VAT reclaim

You may be able to recover this and other VAT using Vatax Reclaim ltd. Full details are available at vatax.net or telephone +44 (0)20 7831 5115



Online

For the latest information on all GTF Conferences and Training Courses visit our website at: gforum.com



Accommodation

For help with booking accommodation near the course venue, please contact Event Express via:

Telephone:
 +44 (0)1905 732737

Fax:
 +44 (0)1905 732738

Email:
reservations@eventexpressuk.com



Warning: ERTC is a registered trademark, and the titles, contents and style of this brochure are the copyright of Incisive Media. We will act on any infringement of our rights anywhere in the world.
 ©Incisive Media.

Cancellation: A refund (less 10% administration fee) will be made if notice of cancellation is received in writing three weeks before the training course. We regret that no refunds can be given after this period. A substitute delegate is always welcome at no extra charge.

Disclaimer: The programme may change due to unforeseen circumstances, and Incisive Media reserves the right to alter the venue and/or speakers. Incisive Media accepts no responsibility for any loss or damage to property belonging to, nor for any personal injury incurred by, attendees at our training courses, whether within the training course venue or otherwise.

Data Protection: By registering for the ERTC Training Course, Incisive Media will send you further information relating to this event. In addition we will send you information about our other relevant products and services which we believe will be of interest to you. If you do not wish to receive other relevant information from Incisive Media via a particular medium please tick the following relevant boxes: mail phone fax email.

Incisive Media will also allow carefully selected third parties to contact you about their products and services. If you do not wish to receive information from third parties via any of the following media please tick the relevant boxes: mail phone. Please tick if you are happy to receive relevant information from carefully selected third parties by email and fax .



incisivemedia
incisivemedia.com