

# **AFPM Annual Meeting 2014**

**Orlando, Florida, USA  
23-25 March 2014**

**ISBN: 978-1-63266-412-9**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2014) by American Fuel & Petrochemical Manufacturers (AFPM)  
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact American Fuel & Petrochemical Manufacturers (AFPM)  
at the address below.

American Fuel & Petrochemical Manufacturers (AFPM)  
1667 K Street, NW, Suite 700  
Washington DC 20006

Phone: (202) 457-0480  
Fax: (202) 457-1486

[info@afpm.org](mailto:info@afpm.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

<b>AM-14-02 RFS2 Version 2.0, Armageddon Averted</b> .....	1
<i>Thomas Hogan</i>	
<b>AM-14-06 Process Safety Site Assessment Program – Promoting a Culture of Process Safety</b> .....	12
<i>Andrew Broadbent</i>	
<b>AM-14-08 The Human Side of Errors</b> .....	24
<i>Ian Nimmo, David Lee</i>	
<b>AM-14-09 Networks Enhance Process Safety Performance</b> .....	48
<i>Doug Evans, Chitram Lutchman</i>	
<b>AM-14-11 Alarm Upgrades VIA Rationalization</b> .....	71
<i>Kevin Brown, Allen Bauman</i>	
<b>AM-14-12 Will OPEC Sideline US Producers by Defeating Tight Oil?</b> .....	83
<i>Ann-Louise Hittle</i>	
<b>AM-14-13 Challenges and Solutions for Processing Opportunity Crudes</b> .....	94
<i>Mike Dion</i>	
<b>AM-14-14 Distillation Heater Operation While Processing Tight Oil</b> .....	107
<i>Patricia Marques, Fernando Feisto Oliveria</i>	
<b>AM-14-15 Challenges of Processing Feeds Derived from Tight Oil Crudes in the Hydrocracker</b> .....	116
<i>R.D. Deepak, Wes Whitecotton, Matthew Goodman, Andy Moreland</i>	
<b>AM-14-16 Processing Tight Oils in FCC: Issues, Opportunities and Flexible Catalytic Solutions</b> .....	127
<i>Michael Federspiel, Kenneth Bryden, E. Thomas Habib Jr., Rosann Schiller</i>	
<b>AM-14-17 Diesel Hydrotreating Challenges &amp; Opportunities when Processing Tight Oil</b> .....	175
<i>Kaspar Vogt, Hiroshi Toshima, Bob Leliveld</i>	
<b>AM-14-18 Catalytic Solutions for Increasing Middle Distillate Yields and Managing Product Properties</b> .....	191
<i>Greg Rosinski, Brian Watkins, Charles Olsen</i>	
<b>AM-14-19 A New Catalyst Generation for Additional Hydrogenation and Volume Swell</b> .....	214
<i>Per Zeuthen</i>	
<b>AM-14-20 Catalyst Selection – A Refiner’s Perspective</b> .....	230
<i>George Hoekstra</i>	
<b>AM-14-21 A Step-Wise Approach to Meeting the Growing Imbalance between Diesel and Gasoline Production</b> .....	248
<i>Larry Wisdom, Eric Peer, Mike Craig, Cedric Perat</i>	
<b>AM-14-23 Capturing Maximum Values for Processing Tight Oil through Optimization of FCC Catalyst Technology</b> .....	263
<i>Shaun Pan, Alicia Garcia, Alexis Shackelford, Robert Gallogly</i>	
<b>AM-14-24 Shale Gas-Driven Wave of New Petrochemical Plants in North America is Opportunity for Refiners</b> .....	277
<i>Dillip Dharia, Alexander Maller, Eusebius Gbordzoe</i>	
<b>AM-14-25 Advances in Propylene Maximization from the FCC Unit</b> .....	298
<i>Udayshankar Singh, Mike Ziebarth, Wu-Cheng Cheng, Jeffrey Nicolich, Jurgen. Knoll, Christoph Fougret, Stefan Brandt</i>	
<b>AM-14-26 Take ACTION™ - to Maximize Distillate and Alky Feed from your FCC Unit</b> .....	321
<i>George Yaluris, Alan Kramer</i>	
<b>AM-14-27 FCC Additive Improves Residue Processing Economics with High Iron Feeds</b> .....	346
<i>Todd Hochheiser, Bart de Graaf</i>	
<b>AM-14-28 Implementation of State-of-the-Art FCC Technology for Improved Reliability and Profitability at Deer Park Refinery</b> .....	360
<i>David Hunt, Bill Munsch, Sayantan Chatterjee, Richard Sanborn</i>	
<b>AM-14-29 Dividing Wall Column Technology Hydrocarbon Separations</b> .....	384
<i>Ian Elgey, Bhari Singh, Bill Townsend</i>	
<b>AM-14-31 Semantic Procedure Analysis</b> .....	393
<i>Thomas Kindervater, David Strobhar</i>	
<b>AM-14-32 Planning, Design, and Implementation of the Automation System for the Marathon Petroleum Detroit Refinery Expansion</b> .....	403
<i>Edward Bullerdiek</i>	
<b>AM-14-33 Innovation Leads to New Solids Management Technology</b> .....	429
<i>Doug Longtin, Gerry Hoffman</i>	

<b>AM-14-34 Petrochemical Landscapes: The Blessing and Curse of the Shale Revolution</b> .....	444
<i>Jim Foster</i>	
<b>AM-14-35 Optimizing Naphtha Complexes in the Tight Oil Boom</b> .....	455
<i>Mary Wier, Mark Lapinski, Steve Metro</i>	
<b>AM-14-37 Tier 3 Capital Avoidance with Catalytic Solutions</b> .....	495
<i>Patrick Gripka, Opinder Bhan, James Esteban, Wes Whitecotton</i>	
<b>AM-14-38 Advances in Cracked Naphtha Hydrotreating</b> .....	510
<i>Geoffrey Dubin, Delphine Largeteau</i>	
<b>AM-14-39 Shale Gas Boom and Tight Oil - A New Era for the Refining Industry</b> .....	524
<i>Mark Lockhart, Dominic Varraveto</i>	
<b>AM-14-40 Has the Boom Gone Bust?</b> .....	548
<i>Skip York</i>	
<b>AM-14-41 The Effect of Crude by Rail on Refining and Logistics</b> .....	556
<i>David Hackett</i>	
<b>AM-14-42 Changing Crude Qualities and Their Impacts on U.S.</b> .....	602
<i>John Mayes</i>	
<b>AM-14-44 Capital Project Breakpoints for Recovering Light Hydrocarbons and Hydrogen from Refinery Fuel Gas</b> .....	611
<i>Lily Bai, Jie Yu, Sudhir Golikeri, Bechtel Hydrocarbon, Benjamin Klein, Guang Lee</i>	
<b>AM-14-45 Improving Cooling Tower Operation through Monitoring and Analysis</b> .....	623
<i>Nikki Bishop</i>	
<b>AM-14-46 The Seven Deadly Sins of Sour Water Stripping</b> .....	634
<i>Mike Sheilan</i>	
<b>AM-14-47 Amine System Improvements Drive Refinery Gains</b> .....	659
<i>Jeffrey Zurlo, Scott Simon, Patricio Ayala</i>	
<b>AM-14-48 Caustic Scrubber Designs for H<sub>2</sub>S Removal from Refinery Gas Streams</b> .....	671
<i>Darryl Mamrosh, Ken McIntush, Kevin Fisher</i>	
<b>AM-14-49 Trends in U.S. Refined Product Supply/Demand Balances</b> .....	699
<i>Andy Hill</i>	
<b>AM-14-50 Canadian Tidewater Access – Implications for the U.S.</b> .....	710
<i>Neil Earnest</i>	
<b>AM-14-51 World Best Refineries</b> .....	729
<i>Eric Hutchins, Jon Stroup</i>	
<b>AM-14-53 Can U.S. Refiners Invest for Success</b> .....	742
<i>Samuel Davis</i>	
<b>AM-14-54 Hydrogen Generation and Production Trends</b> .....	749
<i>Kevin Proops</i>	
<b>AM-14-56 CO<sub>2</sub> Emissions from Hydrogen Plants: Understanding the Options</b> .....	758
<i>Goutam Shahani, Christine Kandziora</i>	
<b>AM-14-57 Optimal Hydrogen Management at Minimal Costs Utilizing High High-Performance Catalysts for Refineries</b> .....	770
<i>Ross Brunson</i>	
<b>AM-14-59 Natural Gas in Transportation: The Impact on Oil Demand in the U.S. and Beyond</b> .....	778
<i>Alan Gelder</i>	
<b>AM-14-62 How to Make Anything in a Catalytic Cracker</b> .....	788
<i>Warren Letzsch, Chris Dean</i>	
<b>AM-14-67 Using Your Big Data to Improve Operations and Asset Reliability</b> .....	824
<i>Roy Whitt</i>	
<b>AM-14-68 The Strategic Approach to Operational Excellence in Highly Hazardous Operations</b> .....	832
<i>Jack Pankoff</i>	
<b>AM-14-71 The Path to World Class Reliability Performance</b> .....	846
<i>James Feeney, Ernest Rose</i>	
<b>AM-14-74 Dewaxing Challenging Paraffinic Feeds in North America</b> .....	853
<i>Renata Szykarczuk, Michelle Robinson, Laurent G. Huve</i>	
<b>Author Index</b>	