

AFPM Annual Meeting 2013

**San Antonio, Texas, USA
17-19 March 2013**

ISBN: 978-1-62748-442-8

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© (2013) by American Fuel & Petrochemical Manufacturers (AFPM)
All rights reserved.

Printed by Curran Associates, Inc. (2013)

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

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
Web: www.proceedings.com

TABLE OF CONTENTS

Best Practices for ZSM5 Use In the Fluidized Catalytic Cracker	1
<i>Ray Fletcher, Jeffrey Sexton, Michael Skurka</i>	
Rive Molecular Highway™ Catalyst Delivers Over \$2.50/bbl Uplift at Alon’s Big Spring, Texas Refinery	17
<i>Gautham Krishnaiah, Barry Speronello, Allen Hansen, Jimmy Crosby</i>	
Flexible Pilot Plant Technology for Evaluation of Unconventional Feedstocks and Processes	32
<i>Kenneth Bryden, E. Thomas Habib</i>	
Better Catalyst Evaluation Strategies for Maximizing FCCU M	61
<i>A. C. Pouwels, K. Bruno</i>	
Solutions for FCC Refiners in the Shale Oil Era	82
<i>Chad Huovie, Mary Jo Wier, Richard Rossi, Dan Sioui, Jeff Sexton</i>	
U.S. EPA Flare Enforcement Overview	111
<i>Patrick Foley</i>	
Gas-to-Liquids via Mild Hydrocracking	126
<i>Daniel Thomas, Garry W. Kirker, David A. Pappal, Jason Smith</i>	
Custom Catalyst Systems for Higher Yields of Diesel	138
<i>Brian Watkins, Charles Olsen</i>	
Successes Gained in Oil Sands Derived Feed Processing: A Customized Application of Research & Development	155
<i>Max Ovchinnikov, Josiane Ginestra, Dorian Rauschning, Bill Gillespie, Kevin Carlson</i>	
Diesel Fuel Cold Flow Improvements Using Catalytic Dewaxing	171
<i>Rainer A. Rakoczy</i>	
Impact of Flow Distribution and Mixing on Catalyst Utilization and Radial Temperature Spreads in Hydroprocessing Reactors	181
<i>Sumanth Addagarla, Gavin McLeod, Kris Parimi, Dan Torchia</i>	
Role of Bulk Metal Catalysts in Hydroprocessing Improvement	193
<i>Keith Wilson, Amanda K. Miller</i>	
Flare Mitigation - Case Study for the use of HIPS to Mitigate Flare Load to Avoid Construction of a New Flare	206
<i>Kenneth Sherman, Worley Parsons, Scott Harper</i>	
Technology Application at Fired-Heaters and Boilers for Safer and Efficient Combustion	229
<i>Francisco Rodriguez, Enrique Tova, Miguel Morales, Enrique Bosch, John W. Sale</i>	
Cooling Water Systems and Modeling	245
<i>Rebecca Wood</i>	
FCCU Wet Scrubbing System Modifications to Reduce Air Emissions	253
<i>Edwin H. Weaver, Nicholas Confuorto</i>	
HCN Emissions in Fluid Catalytic Cracking	267
<i>Paul Diddams, Xunhua Mo, Bart De Graaf</i>	
Are Machines Better Than Humans in a Crisis?	276
<i>Maurice J. Wilkins</i>	
The Bottom Line: What Role Do Fired Heater Safety Systems Play?	286
<i>Nikki Bishop, Dave Sheppard</i>	
Considerations for Effectively Managing Emergency Relief Systems Design	297
<i>Thomas Watson</i>	
Big Mechanical Integrity Failures - Six Case Studies What You Can Do To Prevent Them	315
<i>John T. Reynolds</i>	
A Look Inside: Improving Safety within Permit Spaces Utilizing a Centralized Confined Space Monitoring System	324
<i>David Johnson</i>	
Global Biofuels Outlook: Supply, Demand, Policies	351
<i>Tammy Klein</i>	
Competitive Threat of Renewable Gasoline	365
<i>Eric Bober</i>	
Meeting Your Renewable Fuel Obligations in 2014	389
<i>Thomas Hogan, John Mayes</i>	
Implications of the North American Oil Renaissance	400
<i>Neil Earnest</i>	

Characterizing and Tracking Contaminants in Opportunity Crudes	420
<i>Robert Ohmes, Mark Routt</i>	
Upgrading Oil Sands Bitumen Using FlexDS: Pilot Plant Performance and Economics	446
<i>Eric Burnett</i>	
The Impact of Resurgent North American Crude Production on Refining Crude Slate	459
<i>Michael Wojciechowski, Skip York, Alan Gelder</i>	
Going Beyond Functional Safety to Answer the Question: “How Safe is My Plant Operating?”	470
<i>Martin Turk, Ajay Mishra</i>	
Reactor Effluent Air Cooler (REAC): Safety Through Design	493
<i>Eric Lin, Peter Risse</i>	
Stop Corrosion Under Insulation Before it Happens	501
<i>Donald Savage</i>	
OSBL Line Inspection Tracking	507
<i>Andy Rivero</i>	
How to Assess, Develop and Train Your Next Generation of Leaders	515
<i>Steve Anderson</i>	
Mitigating Risks of Chronic Skilled Construction Labor Shortage facing Major US Capital Projects	530
<i>Daniel Lumma</i>	
Accelerated Capability Development	552
<i>Jerry Isch, Kevin Smith</i>	
Capitalizing on Shale Gas in the Downstream Energy Sector	564
<i>Matthew Kuhl, Robert Ohmes, Andy Hoyle</i>	
Shale Gas Monetization – How to Get Into the Action	595
<i>David Myers, Greg Funk, Bipin Vora</i>	
Benchmarking Shale Gas Monetization	613
<i>Uday Turaga</i>	
Problems and Solutions for Processing Tight Oils	622
<i>Bruce Wright, Corina Sandu</i>	
How Shale Hydrocarbons are Reshaping US Refined Products Markets	637
<i>Praveen Gunaseelan, Matt Thundyil</i>	
Blending Modernization Projects in Chevron: Best Practices, Success Stories, Lessons Learned, and Future Plans	659
<i>Paul Singh, Dennis L. Cima, Brian Stefurak</i>	
Advantages of Wireless Valve Monitoring Technology	675
<i>Tito Sequeira</i>	
Growing US Oil and Gas Production Set to Reshape Competitive Position of US Refineries	686
<i>Charles G. Kemp</i>	
Successful Export Centres - Potential Lessons for USGC	709
<i>Alan Gelder</i>	
Outlook for U.S. Refining and Products Markets	719
<i>John Boepple</i>	
Petrochemical Integration: Changing Markets, Changing Strategies	734
<i>Blake Eskew, Chris Geisler</i>	
Operational Excellence: The Key to Success for Oil and Gas	755
<i>John W. Mooney</i>	
Improve Your Delayed Coker's Performance and Operating Flexibility with New OptiFuel Coker Additive	760
<i>Raul Arriaga, Ryan Nickel, Phil Lane, Roger Etter</i>	
Optimizing Refinery Light Ends Recovery	780
<i>Nick Perkins</i>	
Naphtha Train Optimization for the Next Decade	787
<i>Michael Armstrong, Martin Brandt</i>	
The Path to Low Sulfur Bunkers	808
<i>John Mayes</i>	
Optimizing FCC - Pre-Treat Unit Operation to Reach Tier 3 Gasoline Sulfur Targets	816
<i>George Anderson, Steve Mayo, Peter-Paul Langerak</i>	
Gasoline Benzene Reduction Through Reformate Alkylation Catalytic Technology: BenzOUT™	829
<i>El-Mekki El-Malki, Erik Moy, Timothy Thom</i>	
Refiner Options for Dealing with the Coming NGL Tsunami	839
<i>Eric Ye, Daniel Lippe</i>	
Author Index	