

AFPM Annual Meeting 2022

New Orleans, Louisiana, USA
13-15 March 2022

ISBN: 978-1-7138-6655-8

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© (2022) by American Fuel & Petrochemical Manufacturers (AFPM)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

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
USA

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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Three W's of FCC: Why, What, What.....	1
<i>M. Stine, D. Panchal, B. Duncan</i>	
Artificial Intelligence and Safety.....	14
<i>S. Gill, V. Venkatasubramanian, R. Rathinasabapathy, A. Nahab</i>	
Explainability and Ease of Maintenance	20
<i>A. Malik, A. Mukund</i>	
Monroe Energy's Closed Loop Neural Network Journey.....	34
<i>A. Malik, A. Mukund, J. Myers</i>	
Sustaining the Alarm Management Lifecycle.....	49
<i>P. Robinson, K. Kuhn, A. Austin, T. Jones, D. Logerot</i>	
Advances in Combustion Promoter.....	56
<i>T. Clark, N. Herring</i>	
Treatment Solutions for Chemical Plastics Recycling.....	67
<i>D. Hood, J. Gottlieb, A. Cury</i>	
Delayed Coking Feed Quality - Effects on unit Reliability and Performance	79
<i>S. Romero</i>	
How Data Science and Analytics are Transforming the Technical Workforce	94
<i>R. Dighe, T. Lane, B. Scallan, Y. Soyombo, M. Bowling</i>	
CASE STUDY: How Digital Turnarounds at INVISTA Improved Execution	105
<i>J. Flynn, D. Goulet</i>	
Dynamically Managed Alarms	114
<i>P. Robinson, K. Kuhn, D. Logerot, T. Jones, A. Austin</i>	
AFPM Emerging Leaders Employee Engagement.....	121
<i>R. Dugan, T. Lacorte, K. Taylor</i>	
AFPM Summit-Extensions to APC: Supplementing APC with Machine Learning Technologies	133
<i>A. Kalafatis, T. Sandowski</i>	
Feedstocks for FCC Co-Processing.....	141
<i>M. Schmalfeld, G. Yaluris, L. Wolschlag</i>	
FCC Equipment Reliability	158
<i>J. Colmone, B. Higgins, B. Herasymiu</i>	
Addressing the Human Element in Improving Personal Safety, Process Safety and Reliability Through the Human & Organizational Performance Lens	172
<i>J. Jemigan, H. Kemp, R. Knowles, D. Wurst</i>	
Hydrogen Plant Design: Reliability Perspective	189
<i>S. Fowler</i>	

Hydroprocessing Relief Design - Special Considerations for BOTH: Standard Overpressure Protection and Layers of Protection for Process Safety.....	208
<i>S. Davis, J. Johns, J. Rydberg, W. Wildenberg</i>	
Lift Station Explosion.....	227
<i>K. Bloch</i>	
Flint Hills Resources Event Share - Coker Unit Line-up Error	233
<i>M. Albarado, P. Schulz</i>	
From Concept to Scale: ExxonMobil's VR Training Journey	240
<i>T. Chappell</i>	
Reactor Bed Chemical Cleaning.....	247
<i>A. Azpilicueta, L. Keon, R. Pratt</i>	
Maximizing Profitability and Operational Flexibility with Breakthrough Celestia™ Bulk Metal Catalyst: A Commercial Case Study.....	268
<i>C. Anderson, M. Cotturo, C. Perrott</i>	
Bringing Mobile Technologies into the Maintenance & Reliability Environments - Identifying and Overcoming Challenges Parts 1 & 2	278
<i>G. Celestine, B. Taylor, D. Bailey, T. Cobb, W. Smith</i>	
Monetizing Renewables: Voluntary Markets.....	282
<i>K. Klavers</i>	
Open Process Automation - The Software Defined DCs	298
<i>M. Hammer, D. Debari</i>	
Collaborating on Operating Limits.....	306
<i>S. Gill, B. Clark, N. Birchall, D. Beebe, T. Olsen</i>	
Petrochemical – The Next Frontier for FCC Part 1 & 2	314
<i>R. Pillai, P. Niccum, R. Singh, R. Khandelwal</i>	
Petrochemical Panel	365
<i>K. Bruno, C. Pouwels</i>	
Maximize Profitability from HVO Production.....	373
<i>U. Brasen</i>	
Naphtha Reforming Catalysis 101.....	379
<i>R. Wiltse, S. Philoon, S. Blindauer</i>	
Renewable Fuels Isomerization Discussion	389
<i>J. Arana</i>	
Renewables Townhall – Process Safety.....	402
<i>P. Thakker, K. Hildebrand, C. Hemphill, R. Smith</i>	
Reviving Reforming Assets to Maximize Performance and Profitability.....	409
<i>M. Hutchinson</i>	
The “Secret” Impact of Energy Efficiency - Improving US Refining Competitiveness.....	418
<i>M. Achacoso</i>	

Supplier Relationship Management for Routine Maintenance - When it Comes to Hiring Contractors, it's Important to get it Right	427
<i>M. Hutton, G. Celestine, H. Haught, B. Tupper, S. Brisendine</i>	
Turnaround Roundtable Discussion.....	433
<i>H. Kemp, B. Hase</i>	
US Regining's Record Margins are a Sign of Strength - Is this put at Risk by the Energy Transition?.....	438
<i>A. Gelder</i>	
Operational Readiness for the Pront Lines (Operations and Maintenance).....	450
<i>H. Haught, L. Moreaux, M. McKee</i>	
Walk the Line Technology: E-Permitting	463
<i>D. Armstrong, L. Moreaux</i>	

Author Index