

# **AFPM Operations & Process Technology Summit 2019**

Operational Planning, Control &  
Automation Technologies

San Antonio, Texas, USA  
14-16 October 2019

ISBN: 978-1-5108-9690-1

**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© (2019) by American Fuel & Petrochemical Manufacturers (AFPM)  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

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](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: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

<b>Leading-Edge Technology for Profitable Real-Time Tracking and Optimization</b> .....	1
<i>S. Rogers, N. Kenaston</i>	
<b>The Automation of Operating Discipline with State Based Control</b> .....	13
<i>T. Nolan, D. Beebe</i>	
<b>Cloud-Based IIoT Heat Exchanger Optimization Improves Process Performance</b> .....	21
<i>T. Anslinger, M. Donnangelo</i>	
<b>Securing the Supply Chain for Commercial off the Shelf (COTS) Automation, Control Devices and Systems Using ISA/IEC 62443 Standards</b> .....	35
<i>A. Ristaino</i>	
<b>Impact of Refinery Mass Balance and Loss Control on Operational Excellence</b> .....	49
<i>J. Valentine</i>	
<b>Closing the LP and APC Gap with Real-Time Optimization</b> .....	63
<i>K. Teague, P. Le</i>	
<b>Bringing Smart Manufacturing to the Masses</b> .....	69
<i>J. Flores-Cerrillo, J. Dyck, P. Sharpe, Haresh Malkani</i>	
<b>State-Based Control of a Vinyl Acetate Monomer Production Process</b> .....	83
<i>J. Huggins, C. Lane</i>	
<b>Creating Value Using Open Process Automation to Support Digital Transformation</b> .....	97
<i>B. Houk</i>	
<b>Academic Research and its Impact on Industry</b> .....	111
<i>D. Nicol, F. Woeltge</i>	
<b>A Comprehensive Fired Heater Health Monitoring Program</b> .....	123
<i>R. Christianson, T. Hill</i>	
<b>Supporting Integrated Conduct of Operations (CoO) with Integrated Technology</b> .....	165
<i>D. Drerup</i>	
<b>Author Index</b>	