Fuels and Petrochemicals Division 2021

Held at the 2021 AIChE Spring Meeting and 17th Global Congress on Process Safety

Online 18 - 23 April 2021

ISBN: 978-1-7138-5342-8

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© (2021) by AIChE All rights reserved.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact AIChE at the address below.

AIChE 120 Wall Street, FL 23 New York, NY 10005-4020

Phone: (800) 242-4363 Fax: (203) 775-5177

www.aiche.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

The Digital Transformation Promises to Change Innovation in the Materials Industry. Will It?	1
Digital Twins & Smart Manufacturing –Where Data Analytics Meet Modeling & Optimization	2
Color Changing Processes: Moving from Black to Green	3
APC Toolkit: Choosing the Right Tool for the Job	4
Multifaceted Biochar: Biofuel Source, Graphene Precursor and Methane-to-Hydrogen Catalyst	5
Integrated Scheduling for Petroleum Refinery Supply-Chain Management	8
Heat Release Analysis of Neat and Upgraded Biorenewable Thermal Deoxygenation Oils in a Diesel Engine	10
"Development of a Production Scale CO2 Conversion Catalyst for a Single System Circulating Fluidized Bed to Create Value Added Chemicals"	11
Novel Techniques to Improve Polymer Reactor Temperature Controller Tuning	12
The Power of RAM Modeling: Optimizing Facility Performance throughout Life	13
Sustain and Improve APC Performance without Breaking the Bank	14
7 Ways to Monitor Controller Variability – Which One Is Right for You?	15
The Digital Transformation Promises to Change Innovation in the Materials Industry. Will It?	16
Digital Twins & Smart Manufacturing –Where Data Analytics Meet Modeling & Optimization	17

Author Index