

# Process Intensification

Topical Conference at the 2022 AIChE Spring Meeting and  
18th Global Congress on Process Safety

San Antonio, Texas, USA  
10 – 14 April 2022

ISBN: 978-1-7138-6824-8

**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 AIChE  
All rights reserved.

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

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](http://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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

Redefining the Upper Bound Curve for Process Intensification in Natural Gas Processing .....	1
<i>Jimoh Adewole, Naveed Khan, Asma Al Kharusi, Muhammad Javed, Habeebllah B. Oladipo, Muhammad Zahir Khan, Riaz Ahmad</i>	
Process Intensification and Reactor Design for Efficient SAF Production .....	2
<i>David Robichaud</i>	
Process Intensification of Enzyme Catalysed Transesterification of Geraniol in the Spinning Mesh Disc Reactor .....	3
<i>Parimala Shivaprasad, Teng Wei Yap</i>	
Kinetic Resolution of 1-Phenylethanol in the Spinning Mesh Disc Reactor: A Techno-Economic Analysis .....	5
<i>Parimala Shivaprasad, Josh Passey, Elif Adiguzel, Emma Emanuelsson</i>	
Comparison of the Dual-Process Langmuir and Generalized Langmuir Isotherms for Representation of Unary, Binary, and Ternary Equilibria .....	7
<i>Michael D. Sees, Chau-Chyun Chen</i>	
Modeling Aqueous Solutions of Rare Earth Elements (REE) Salts with Association Electrolyte Nonrandom Two-Liquid Activity Coefficient Model .....	8
<i>Shikha Bhaiya, Cheng-Ju Hsieh, Chau-Chyun Chen</i>	
Modeling Adsorption of Organics-Laden Air from Wood Drying Using Equilibrium Approaches .....	9
<i>Michael D. Sees, Chau-Chyun Chen, Kim Tutin</i>	
Model-Based Design and Intensification of a Catalytic Fluidized Bed Membrane Reactor for Oxidative Coupling of Methane .....	10
<i>Moustafa Ali, Yuhe Tian, Shauvik De, Alexander P. van Bavel, C. Doga Demirhan, Efstratios N. Pistikopoulos</i>	
Modeling Aqueous Lithium Salt Systems with Association Electrolyte Nonrandom Two-Liquid Activity Coefficient Model .....	11
<i>Cheng-Ju Hsieh, Chau-Chyun Chen</i>	

### Author Index