Spring Meeting Poster Session and Networking Reception 2022

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

San Antonio, Texas, USA 10 – 14 April 2022

ISBN: 978-1-7138-6833-0

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

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

Hydrogen Plasma Reduction of REOs/Salt for Rems Production	1
Study of Surfactant/Nanoparticles Formulations in Rock/Fluid Interaction for Enhanced Recovery of a Colombian Heavy Crude Oil	2
Michell A. Jimenez, Juan C. Orozco, Emiliano Ariza, Daniel R. Molina, Dario Y. Peña, Adan Y. León	
Analysis of Catalytic Aquathermolysis on the Physicochemical Properties and Maltenes-Asphaltenes in Colombian Heavy Crude Oils by Using 1H-NMR	3
Adan Y. León, Paola A. León, Juan C. Orozco, Dario Y. Peña, Daniel R. Molina, Emiliano Ariza	
Application of Liquid Products from Polystyrene Conversion as Pour Point Depressants in a Colombian Paraffinic Crude Oil	4
Emiliano Ariza, Sara Rivera, Ederson Y. León, Adan Y. León	
Effect of Initial Water Saturation on Carbonate Rock Wettability: A Contact Angle Study	5
Xiao Deng, Xianmin Zhou, Muhammad Shahzad Kamal, Shirish Patil, Syed Hussain, Mohamed Mahmoud	
Influence of Permeability on the Relative Contribution of Wettability Alteration and IFT Reduction in Oil Recovery	6
Xiao Deng, Muhammad Shahzad Kamal, Syed Hussain, Xianmin Zhou, Mohamed Mahmoud, Shirish Patil, Emad W. Al Shalabi	
Development of Magnetic Surfactants for Oilfield Applications	7
New Crude Oil Viscosity Models for Burgan Oilfield	8
CO2 Dissociation Over Ni Supported on Doped Ceria Catalysts	9
Efficient Degradation of Naphthalene Using Hydrazine Assisted Nano-Iron Peracetic Acid Process Muhammad Danish, Ayyaz Ahmad, Sajjad Ahmad, Syed Waqas Ahmad	10
Copper Oxide and Sodium Percarbonate System Supported with Iron Nanoparticles for the Simultaneous Degradation of Trichloroethane and Hexavalent Chromium	11
CO2 Capture and Conversion to Methanol Over a Copper Based Dual Functional Material	12
Research on the Influence of Wax, Resins and Asphaltenes on Wall Sticking of Shale Oil	13
Electrocoalescence of Water-Oil Mixtures Induced by Corona Discharge	14

 Properties of H2 .2.H2 Safety 4. MOC Consideration for H2service. Hydrogen Embrittlement High Temperature Hydrogen Attack. H2 Accidents 8. Lesson Learned. Prakash Bhosale	15
A Worker Safety Management System Based on Worker Location and Environmental Information During Tunnel Construction Jungwoo Lee, Sohyun Park, Dongil Shin	16
Fixing AI's Identity Crisis in the Industrial Space	17
Using Avert Physical Security (AVERT-PS) to Optimize Physical Security Effectiveness at Mission Critical Facilities	19
Three Challenging Applications of Quantifying Critical Characteristics with Machine Vision (Poster)	20
Waste Plastics to Cleaner Fuels: Technical and Economic Assessment	21
Modeling Aqueous Solutions of Rare Earth Elements (REE) Salts with Association Electrolyte Nonrandom Two-Liquid Activity Coefficient Model	22
Adsorption: A New Look at an Old Unit Operation	23

Author Index