

9th Topical Conference on Gas Utilization 2009

Topical Conference at the 2009 AIChE Spring National Meeting

**Tampa, Florida
26 – 30 April 2009**

ISBN: 978-1-61567-258-5

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© (422;) by AIChE
All rights reserved.

Printed by Curran Associates, Inc. (422;)

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

AIChE
3 Park Avenue
New York, NY 10016-5991

Phone: (203) 702-7660
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: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

On the Hydrodynamics of Bubble Columns with Internals for Liquid Fuels Syntheses	1
<i>Ahmed A. Youssef, Milorad P. Dudukovic, Muthanna H. Al-Dahhan</i>	
Application of Pressure Swing Adsorption in the Production of Ammonia	15
<i>Felix Jegede, James Ritter, Armin D. Ebner, Shubhra Bhadra, Charles E. Holland</i>	
Rotating Machinery for Liquefied Ammonia	16
<i>Steve Rush</i>	
Hydrogen Production from Non-Thermal Plasma Ethanol and Glycerol Reforming	21
<i>Trung Hoang, Xinli Zhu, Richard G. Mallinson, Lance L. Lobban</i>	
In Situ Catalytic Fluid Bed Pyrolysis of Poplar Wood	27
<i>Sedat H. Beis, Foster A. Agblevor</i>	
Gasification Technology as Alternative Hydrogen Production System: A Comparative Study of Fuels Available in Mexico	30
<i>Emilio Manzanares-Papayanopoulos, Manuel Fernández-Montiel, Agustín Moisés Alcaraz-Calderón</i>	
Gasification Characteristics of CWM with Petroleum Coke and Glycerin in a 1T/D Entrained-Flow Gasifier	41
<i>See Hoon Lee, Jae Go Lee, Young Chan Choi, Sang Jun Yoon, Ho Won Ra, Jai Chang Hong</i>	
A Sorption Catalyst Complex with Nano CaCO₃ Precursor for Hydrogen Production Used in ReSer Process	42
<i>Su F. Wu, Lian B. Li, Qi Shi, Xie Q. Wang</i>	
Application of Novel Compressor/Driver Configuration in the Optimized Cascade[®] Process	49
<i>Tat P. Tsang, Mike Larkin, Greg Robbins, Higino Dos Santos</i>	
Process Understanding of Acid Gas Removal Unit Instabilities: Lessons Learnt from Malaysia LNG TIGA	58
<i>Siti Rafidah Moslim</i>	
Cold Box Optimization Program	59
<i>Mona Setoodeh, Tim Gushanas</i>	
Maximized Values of LNG Specification in the LNG Industry: Producer and Buyer Perspectives	66
<i>Joseph Cho, Jay Y. Yang, D. Y. Kim</i>	
Evaluating the Debottleneck of Existing LNG Plants Using Simulation Models	81
<i>Jaleel V. Valappil, Ram Tekumalla, Larry Hall, Dale Ortego</i>	
Design Considerations of Domestic Gas Plant for LNG Baseload Plant	88
<i>J. C. Kuo</i>	
Defining Community and Economic Benefits Associated with Large Energy Infrastructure Projects: LNG Case Study and Project Implementation Issues	103
<i>Ruzanna Makaryan, Michelle Foss, Dmitry Volkov</i>	
EN 1473 and other EN LNG Standards – The European Norms and Standards for the LNG Industry	121
<i>Eginhard Berger</i>	
Advanced Modeling of LNG Receiving and Regasification Terminals	127
<i>Ming Yan, Jichuan George Hu</i>	
Supersized LNG Full Containment System: Is It Dream or Practical?	128
<i>E. S. Park, H. S. Kim</i>	

Comparison of Korean Standard for the LNG Storage Tank with National Codes	138
<i>S. R. Lee</i>	
Completing the Liquefaction Train by Using Two-Phase LNG Expanders	149
<i>Hans E. Kimmel</i>	
Performance Prediction and Testing of Cryogenic Liquefied Gas Reaction Turbines.....	179
<i>Sarah D. Alison-Youel</i>	
Techno-Economic Design and Optimization of NGL Plant: A Retrofit Study	191
<i>Aurora Hernandez Enriquez, Jin-Kuk Kim</i>	
Design LNG Facilities to Minimize Risks from Cryogenic Exposure	207
<i>Victor H. Edwards, Craig Bloom, Luis Padilla, Kamal Shah</i>	
Dynamic Simulation for High Pressure Gas Pipeline Network System	224
<i>Hiroki Hayashi, Kenichi Matsuoka, David Hill</i>	
Solving New Demands in LNG Technology Using Field-Proven LNG Expanders and Pumps	234
<i>Joel Madison</i>	
Fundamentals of a Single Stage Liquid Expander for Flashing Liquids	239
<i>Roger Dambach</i>	
LNG Pumps for Floating Storage and Regas Unit.....	240
<i>Fabien Wahl</i>	
Improved Methodology to Handle Meteorological Data for LNG Projects.....	247
<i>Meredith Chapeaux, Stanley Huang</i>	
Strategic Model of LNG Arbitrage: Analysis of LNG Trade in Atlantic Basin	264
<i>Svetlana Ikonnikova, Dmitry Volkov, Gürcan Gülen, Ruzanna Makaryan</i>	
Economic and Technical Challenges in Lined Rock Cavern LNG Storage System.....	266
<i>Ho-Yeong Kim, Dae-Hyuk Lee, Joseph Cho</i>	
LNG Transfer in Harsh Environments - Introduction of a New Tandem Mooring Concept	280
<i>Sven Hoog, Hartmut Koch</i>	
Modeling the Spreading of Large LNG Spills on Water	294
<i>Nicolas Ponchaut, Melissa Chernovsky, Filippo Gavelli, Harri K. Kytömaa</i>	
Absorption Characteristic of LNG as a Function of IR Wavelength	295
<i>Lady Carolina Herrera, Ling Miao, M. Sam Mannan</i>	
Study on the Heat Transfer of Expansion Foam on LNG Pool.....	302
<i>Geun Woong Yun, M. Sam Mannan</i>	
Study on the Heat Transfer of Expansion Foam on LNG Pool.....	317
<i>Geun Woong Yun, M. Sam Mannan</i>	
LNG Safety and Security.....	318
<i>Dmitry Volkov, Michelle, M. Foss, R. Makaryan</i>	
Water Curtain Application for Forced Dispersion of LNG Vapor	339
<i>Morshed Rana, M. Sam Mannan</i>	
LNG Vapor Dispersion Consequence Modeling with CFD Codes	351
<i>Ruifeng Qi, William J. Rogers, M. Sam Mannan</i>	
Have You Considered High-Pressure LNG Releases?.....	363
<i>Sanjeev Saraf, Subodh Medhekar, En-Hua Yang</i>	

Author Index