3rd Trondheim Gas Technology Conference 2014

Energy Procedia Volume 64

Trondheim, Norway
4 – 5 June 2014

Editor:

P. Neks¬

ISBN: 978-1-63439-969-2

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© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

http://www.elsevierpublishingsolutions.com/contact.asp

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

Preface 1

From Droplets to Process: Multilevel Research Approach to Reduce Emissions from LNG Processes 3
Sigurd Weidemann Løvseth, Ingrid Snustad, Amy Leigh Brunsvold, Geir Skaugen, Per Eilif Wahl, Karl Yngve Lervåg

Investigation of Non-ideal Behavior of Plate-fin Heat Exchangers in LNG Services 13
G. Skaugen, M. Hammer, M. Aa. Gjennestad

Flow Pattern Transitions in and Hysteresis Effects of Falling Film Flow over Horizontal Tubes Related to LNG Heat Exchangers 23
Anders Austegard, Mayukh Bandopadhyay, Sigurd Weidemann Løvseth, Amy Brunsvold

Theoretical and Experimental Investigation of Film Drainage Time 33
Jannike Solsvik, Sofie Nystrand, Bartlomiej Gawel, Gisle Øye, Hugo A. Jakobsen

Numerical Study of the Condensation Length of Binary Zeotropic Mixtures 43
Han Deng, Maria Fernandino, Carlos A. Dorao

Modelling of Heat Transport in Two-phase Flow and of Mass Transfer Between Phases Using the Level-set Method 53
M. Aa. Gjennestad, S. T. Munkejord

Optimization of a Single Expander LNG Process 63
Bjørn Austbø, Truls Gundersen

Analysis of Natural Gas Engine De-Loading on LNG Fuelled Vessels 73
Joseph Direnzo, Petter Nekså, Kjell Kolsaker

Contribution of LNG Use for the Low Calorific Natural Gas Network's Safe and Sustainable Operation 83
Alexey Mozgovoy, Frank Burmeister, Rolf Albus

Multiphase Flow in Complex Valve Geometry 91
S. Edvardsen, C. A. Dorao, O. J. Nydal

Modelling of Natural Gas Pipe Flow with Rapid Transients-case Study of Effect of Ambient Model 101
A. Oosterkamp, J. F. Helgaker, T. Ytrehus

Optimization Model to Analyse Optimal Development of Natural Gas Fields and Infrastructure 111
Kjetil Trovik Midthun, Marte Fodstad, Lars Hellemo

Assessing Production Assurance in a Natural Gas Network by Using Scenario Generation and Optimization 120
Kjetil Midthun, Lars Hellemo, Michal Kaut, Adrian Werner

Simulation and Optimization Models of Steady-state Gas Transmission Networks 130
Alfredo Bermúdez, Julio González-Díaz, Francisco J. González-Diéguez, Ángel M. González-Rueda, María P. Fernández De Córdoba

Pipe Networks: Coupling Constants in a Junction for the Isentropic Euler Equations 140
Alexandre Morin, Gunhild A. Reigstad

Simulation of Pore Width and Pore Charge Effects on Selectivities of CO_2 vs. H_2 from a Syngas-like Mixture in Carbon Mesopores 150
Thuat T. Trinh, Thijs J. H. Vlugt, May-Britt Hägg, Dick Bedeaux, Signe Kjelstrup

Author Index