

15th European Symposium on Improved Oil Recovery 2009

**Paris, France
27-29 April 2009**

ISBN: 978-1-62276-891-2

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© (2009) by the European Association of Geoscientists & Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact by the European Association of Geoscientists & Engineers
at the address below.

EAGE
PO Box 59
3990 DB Houten
The Netherlands

Phone: +31 88 995 5055
Fax: +31 30 634 3524

eage@eage.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

A01 Key Success Factors for IOR/EOR Implementation.....	1
<i>V. A. Brock</i>	
A02 The Emlichheim Oilfield - 45 Years of EOR and No End	10
<i>M. Dreier</i>	
A03 Schoonebeek - Combining Proven Technologies into a Profitable Steamflood.....	21
<i>F. Jelgersma, J. W. Flamma, A. A. H. Vandeweijer, G. L. Lammers, M. De Keijzer, B. A. Van Haarlem</i>	
A04 EOR in BP - Making it Happen	31
<i>C. Reddick, D. Puckett, A. Cockin, T. Buikema, R. Choo, S. Mahmood, I. Collins</i>	
A07 New Viscoelastic Fluid for Chemical EOR	46
<i>M. Morvan, G. Degre, J. Leng, C. Masselon, J. Bouillot, A. Zaitoun, P. Moreau</i>	
A08 MIOR Displacement Mechanisms in Glass Micromodel	64
<i>M. Shabani Afrapoli, S. Ostvar, C. Crescente, O. Torsaeter</i>	
A09 Pore Scale Modelling of Linked Polymer Solution (LPS) - A New EOR Process	77
<i>S. Fallah Bolandtaba, A. Skauge, E. Mackay</i>	
A10 The Potential of High Resolution Satellite Interferometry.....	94
<i>U. Wegmüller, L. Petrat, K. Zimmermann, I. Al Quseimi</i>	
A15 Advances in Understanding Thermally Assisted GOGD.....	104
<i>P. M. Boerrigter, J. J. Van Dorp</i>	
A16 Wetting Properties of Chalk - Impact of Water Soluble Acidic Material in Crude Oil.....	114
<i>S. J. F. Fathi, S. Strand, T. A. Austad, T. P. Puntervold</i>	
A17 Improved Spontaneous Imbibition of Water in Reservoir Chalks	123
<i>I. F. Fjelde, S. M. A. Aasen</i>	
A18 Chemical Effects on Chalk Weakening and Fracture Deformation	135
<i>R. Al Zadjali, Q. Fisher, C. A. Grattoni, S. Al-Hinaib</i>	
A19 Reservoir Surveillance Technologies for Thermal EOR Projects	149
<i>D. F. Hohl, J. Lopez, R. Bos, K. P. Maron</i>	
A20 Prediction of Oil/Gas Saturation Variation with Time-lapse Seismic Elastic Parameter Inversion	160
<i>Z. Zhu, X. Jiang</i>	
A21 Joint Structural and Petrophysical History Matching of Stochastic Reservoir Models.....	171
<i>T. Schaaf, B. Coureau</i>	
A24 Multicomponent Transport Model at Core Scale for Microbial EOR Processes Modeling	184
<i>D. A. López-Falcón, M. A. Díaz-Viera, E. Luna-Rojo</i>	
A26 Optimal Design Criteria for SAG Foam Processes in Heterogeneous Reservoirs	202
<i>M. B. Kloet, W. J. Renkema, W. R. Rossen</i>	
A27 Gravity Segregation in Gas IOR in Heterogeneous Reservoirs	230
<i>G. H. Stolwijk, W. R. Rossen</i>	
A28 Experimental and Numerical Modeling Studies of Viscous Unstable Displacement.....	262
<i>A. Skauge, K. Sorbie, P. A. Ormehaug, T. Skauge</i>	
A29 Experimental Investigation of Effect of Depletion Rates on Recovery of a Heavy Oil Reservoir	274
<i>S. A. Mirhaj, M. Fazaelizadeh, R. Kharrat, S. H. Mirhaj, P. L. J. Zitha</i>	
A31 Selection of a New IOR/EOR Strategy for the Heavy Oil Brown Field in Kazakhstan	285
<i>A. A. Mosesyan, S. A. Nagorniy, E. A. Chernitsyna, Y. A. Trotsenko</i>	
B02 Miscible Carbon Dioxide Flood Imaging – Analysis of 4D Seismic Wavelet Transform Spectral Composites	295
<i>A. E. Raef, L. W. Watney, A. P. Byrnes</i>	
B03 Direct Observation of CO₂ Transport and Oil Displacement Mechanisms in CO₂/Water/Oil Systems	305
<i>M. Riazi, M. Sohrabi, M. Jamialahmady, S. Ireland, C. Brown</i>	
B04 Modelling of CO₂ Injection.....	319
<i>L. Surguchev, G. Calderon</i>	
B05 Three-Phase Flash in Compositional Simulation Using a Reduced Method	330
<i>R. Okuno, R. T. Johns, K. Sepehrnoori</i>	
B06 Fractional-Flow Theory of CO₂ Foam Displacements with Surfactant Dissolved in the CO₂	352
<i>E. Ashoori, T. L. M. Van Der Heijden, W. R. Rossen</i>	
B08 A New CO₂ EOR Predictive Correlation	371
<i>J. Brodie, B. Jhaveri, D. Puckett</i>	

B09 Simulation Aspects of the CO₂ EOR Including Foam.....	396
R. A. Berenblyum, J. F. Zuta, I. Fjelde, L. M. Surguchev	
B10 CO₂-Foam Processes in a Fractured Chalk Model.....	406
J. Zuta, I. Fjelde, A. Maqsad	
B11 Correlation between SAGD Steam Chamber Growth and Geological Heterogeneity	415
D. Gotawala, I. D. Gates	
B13 Regularities of Alternated Displacement of High-Viscosity Oil by Steam and Surfactant-Based Systems, Generating CO₂ In Situ	432
L. K. Altunina, V. A. Kuvshinov, I. V. Kuvshinov	
B14 4D Seismic Modelling Applied to SAGD Process Monitoring	445
O. Lerat, F. Adjemian, A. Auvinet, A. Baroni, E. Bemer, R. Eschard, G. Etienne, G. Renard, G. Servant, S. Rodriguez, E. Bathellier, E. Forques	
B15 Optimization of Solvent - Based Enhancements of Steam Assisted Gravity Drainage.....	467
T. Ibatullin, A. B. Zolotukhin	
B16 Experimental and Numerical Analysis of In Situ Combustion in Fractured Carbonates.....	482
H. Fadaei, A. Kamp, G. Debenest, L. Castanier, M. Quintard	
B17 Automated History Matching of Combustion Experiments Using the Ensemble Kalman Filter.....	495
N. Hoogerheide, D. W. Van Batenburg, A. H. De Zwart, S. G. Douma, D. R. Brouwer, E. S. J. Rudolph, J. D. Jansen	
B18 Analytical Study of In-situ Combustion in a Wet Porous Medium.....	511
A. A. Mailybaev, H. Bruining, G. Chapiro, D. Marchesin	
B20 Improved Oil Recovery From Tensleep Sandstone - Studies of Brine-Rock Interactions by Micro-CT and AFM	528
E. Lebedeva, T. J. Senden, M. Knackstedt, N. Morrow	
B21 Smart Water as Wettability Modifier in Carbonate and Sandstone.....	543
A. R. Doust, T. P. Puntervold, S. Strand, T. A. Austad	
B22 Bright Water' Sweep Improvement from the Lab to the Field	560
H. Frampton, P. Denyer, D. H. Ohms, M. Husband, J. L. Mustoni	
B23 Cross-well Electromagnetics – Enhancing Reservoir Management.....	573
A. V. Nalonnal, L. Reynolds, P. Zhang, M. Wilt	
B24 Restriction of Water Production in Gas Wells Using Water Sensitive Microemulsions	581
I. J. Lakatos, J. Lakatos-Szabó, T. Bódi, Á. Vágó	
B25 Performances in Harsh Environments of Water Shutoff and Conformance Control Microgels	601
C. Cozic, D. Rousseau, R. Tabary	
B26 Static and Dynamic Adsorption of Salt Tolerant Polymers.....	620
M. Rashidi, S. Sandvik, A. M. Blokhus, A. Skauge	
B27 Injectivity of Hydrophobically Associative Polyacrylamides for IOR: Impact of the Chemical Composition	633
G. Dupuis, D. Rousseau, R. Tabary, B. Grassl	
B28 Single-well Tracer Tests (SWTT) Experience in the Mature Handil Field- Evaluating Stakes before Launching an EOR Project.....	653
C. Romero, F. Aubertin, E. Cassou, P. Chenevière, J. S. Tang, J. Odiorne, P. Cordier, J. Batias	
B29 Investigating the Effect of Co-Solvents on Heavy Oil Recovery in Different Pore Geometries Using Five-Spot Micromodels.....	669
A. A. Dehghan, R. Kharrat, M. H. Ghazanfari, S. Vossoughi	
B31 Change to Low Salinity Brine Injection in Combination with Surfactant Flooding	683
E. Alagic, A. Skauge	
P02 Implementation of IOR - EOR Projects in ONGC; An Overview.....	699
R. K. Pati	
P04 Feasibility Study of Gas-Based EOR Processes in a North Sea Oil Reservoir	707
P. Permati, D. G. Hatzignatiou	
P06 Incremental Oil Success from Waterflood Sweep Improvement in Alaska.....	730
D. H. Ohms, J. D. McLeod, C. J. Graff, H. Frampton, K. T. Chang, J. C. Morgan, S. Cheung, K. Yancey	
P14 Investigating the Effect of Solvent to Oil Volume Ratio on Asphaltene Deposition.....	732
A. Haghshenas, M. Amani	
P15 Sensitivity Analysis to Investigate Possibility of Steam Injection in an Iranian Carbonate Heavy Oil Field	743
A. Haghshenas, M. Amani	
P16 Experimental Investigation of Hot Water Injection into Low-permeability Carbonates Heavy Oil Reservoirs.....	760
B. Sedaei Sola, F. Rashidi, L. Hamidi Sola	
Author Index	