

## PAPERS AND PRESENTATIONS 2013

Within the 44 papers presented and published in 2013 are the results of Nalco Champion's intense commitment to identifying, nurturing, protecting and growing innovative technologies with real-world applications. From the structure of our organization—tiered to address today's challenges and tomorrow's frontiers—to our commitment to staffing and equipping a global RD&E team with unmatched resources, we are uniquely positioned to provide practical thought leadership to a rapidly changing marketplace.



## UPSTREAM

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1. **Innovative Friction Reducer Provides Improved Performance and Greater Flexibility in Recycling Highly Mineralized Produced Brines**  
 Marcelle L. Ferguson, SPE, Nalco Champion; Clifford C. Anderson, SPE, Cudd Energy Services; Peter B. Eichelberger, SPE, Nalco Champion; James K. Hallock, SPE, Cudd Energy Services; Xiaoping (Victoria) Qiu, SPE, and Rebecca L. Roell, SPE, Shell Oil Company  
  
 SPE Unconventional Resources Conference - USA, Apr 10-12, 2013 2013, The Woodlands, TX, USA Paper 164535
2. **Development of a Fundamental Model for Barium Sulfate Deposition - Part A**  
 S. S. Kundu, H. S. Fogler and M. Jordan  
  
 24th International Tekna Oil Field Chemistry Symposium, Geilo (Norway), March.17-20, 2013)
3. **Development of a Fundamental Model for Barium Sulfate Deposition - Part B** S. S. Kundu, H. S. Fogler and M. Jordan  
  
 Royal Society of Chemistry conference on Chemistry in the Oil Industry XIII: Oilfield Chemistry - New Frontiers, Manchester (UK), Nov 4-6, 2013
4. **Designing Acid Corrosion Inhibitors with Reduced Hazards for Oil and Gas Applications**  
 D. K. Woloch, M. Muellner, M. A. Malwitz, W. Blake and T. McLean  
  
 SETAC North America Meeting, Nashville, TX, November 19, 2013
5. **Novel Micro-emulsion Based Non-emulsifier for Fracturing Applications**  
 Karym Kinnibrugh and Duy Nguyen  
  
 14th International Conference on Petroleum Phase Behavior and Fouling; June 2013, Rueil-Malmaison, France.
6. **Forensic Analysis and Interpretation of Once Through Steam Generator (OTSG) Deposits can Assist in System Operational Improvements**  
 Glenn Weagle  
  
 IWC Orlando, FL (November)
7. **13th International Conference on Petroleum Phase Behavior and Fouling**  
 Andrew Yen and Ryan P. Rodgers  
  
 Energy Fuels, 2013, 27 (4), pp 1721-1721  
 Publication Date (Web): April 18, 2013 (Editorial)  
 DOI: 10.1021/ef400297j
8. **Evaluation of the Extraction Method and Characterization of Water-Soluble Organics from Produced Water by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry**  
 Adam T. Lewis, Thomas N. Tekavec, Jacqueline M. Jarvis, Priyanka Juyal, Amy M. McKenna, Andrew T. Yen and Ryan P. Rodgers  
  
 Energy Fuels, 2013, 27 (4), pp 1846-1855  
 Publication Date (Web): February 19, 2013 (Article)  
 DOI: 10.1021/ef3018805
9. **Asphaltene Issues and Challenges in the Gulf of Mexico: Current Technology Gaps and Path Forward**  
 N. Nagarajan, Stratton, P. Juyal, A. Yen and J. Nighswander  
  
 14th International Conference on Petroleum Phase Behavior and Fouling. June 10-13 Rueil-Malmaison. France
10. **Fractionation of Field Deposit Constituents by Solvent Mixtures**  
 C. Pedroso, University of Campinas; L. Tasic, University of Campinas; F. B. da Silva, Federal University of Rio de Janeiro; P. R. Seidl, Federal University of Rio de Janeiro; M. J. O. C. Guimarães, Federal University of Rio de Janeiro; K. Z. Leal, Federal Fluminense University, Brazil; A. T. Yen, Nalco Champion and S. Allenson, Nalco Champion  
  
 14th International Conference on Petroleum Phase Behavior and Fouling. June 10-13 Rueil-Malmaison. France

## UPSTREAM

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- 11. Extraction and Characterization of High Order Oxygenated Organic Species from Produced Water Sample and Analogy to Molecular Signature of Bio-fuels**  
P. Juyal, Nalco Champion; J. Jarvis, National High Magnetic Field Laboratory; A. M. McKenna, National High Magnetic Field Laboratory; A. Lewis, National High Magnetic Field Laboratory; T. N. Tekavec, Shell Exploration and Production Company, USA; A.T. Yen, Nalco Energy Services, USA and R.P. Rodgers, National High Magnetic Field Laboratory
- 14th International Conference on Petroleum Phase Behavior and Fouling. June 10-13 Rueil-Malmaison. France
- 12. Development of a Novel Kinetic Hydrate Inhibitor and Corrosion Inhibitor Package for Wet Gas Application**  
P. Webber, R. Harrington, R. Jones, N. Morales and J. Anthony
- Offshore Technology Conference Brazil, 29-31 October 2013, Rio de Janeiro, Brazil
- 13. A Mature Southern North Sea Asset Considers Conversation to Wet Gas Operation Which Requires the Development of Compatible Chemistries for Flow Assurance and Asset Integrity**  
J. F. L. Garming, J. Anthony, G. J. de Vries, N. L. Morales, P. A. Webber and R. A. Trompert
- Offshore Technology Conference, 6-9 May 2013, Houston, Texas. Paper 24092.
- 14. Development of a Dual Functional Kinetic Hydrate Inhibitor for a Novel North Sea Wet Gas Application**  
P. Webber, N. Morales, P. Conrad, K. McNamee, R. Jones, G. de Vries and L. Garming
- SPE International Symposium on Oilfield Chemistry, 8-10 April 2013, The Woodlands, Texas. Paper 164107
- 15. Scale Squeeze Treatments in Short Perforation and High Water Production ESP Wells - Application of Oilfield Scale Management Toolbox**  
T. Chen, P. Chen, H. Montgomerie, T. Hagen and S. Heath
- IPTC 16844-MS Beijing, China - International Petroleum Technology Conference, 2013
- 16. Development of a High Performance "Green" High Shear Corrosion Inhibitor with Improved Emulsion Tendency for Gas-Condensate Systems**  
R. Harrington and K. Monk
- NACE 2013 (March)
- 17. Understanding Factors Affecting Corrosion Inhibitor Performance in Under-Deposit Testing with Sand**  
Y. Zhang, J. Moloney, S. Mancuso
- NACE 2013 (March)
- 18. Development of Continuous Application Based Corrosion Inhibitors to Mitigate the Problems Caused by Top of the Line Corrosion in Upstream Oil and Gas Industry**  
V. Narasaiah, M. Ganger, K. Monk and G. Garg
- NACE 2013 (March)
- 19. Surfactant Properties of Alkylbenzyltrimethylammonium Chloride Oilfield Corrosion Inhibitors**  
P. Alaei, B. Binks, P. Fletcher, I. Salama and D. Horsup  
(Presented by J. Moloney)
- NACE 2013 (March)
- 20. The Effect of Hydrocarbon Co-condensation on Performance of Top of the Line Corrosion Inhibitors for Upstream Oil and Gas Transportation Pipelines**  
C. Bikkina, V. Narasaiah and R. Harrington
- NACE India 2013 (October)

## UPSTREAM

21. **Can Pitting on Stainless Steel in the Presence of Neat Chemical Products Be Monitored by Electrochemical Impedance Spectroscopy**  
Y. De Abreu and J. Moloney  
EuroCorr 2013 (September)
22. **Chemically Treating Assets in the Bakken Formation**  
J. Wong-Dickason and S. Thomson  
Materials Performance, v 52, n 2, pp 42-46 (February)
23. **Expanding the Microbial Monitoring Toolkit: Evaluation of Traditional and Molecular Monitoring Methods**  
V. Keasler, B. Bennett, C. Keller, P. Whalen, J. Carins and R. De Paula  
International Biodeterioration and Biodegradation, v 81, pp 51-56 (July)
24. **Inhibition of Erosion-Corrosion in Oil Sand Transport Lines**  
Sherman Kung and Lara Morello  
NACE Corrosion Conference & Expo; C2013-0002397 (March)
25. **Electrochemical Corrosion Studies of EDTA, NG22300 and OS22055T in Simulated OTSG Waters for SAGD Applications**  
T. Chen, C. Batton, J. Gill and J. Hoots  
IWC 2013 November
26. **Mature Fine Tailings Treatment Using Inline Flocculation and Filtration**  
Cynthia Côté, Kristen Sibbel, Rory Heffel, Kevin Cafferata, Anoop Chengara, William Duttlinger and Jochen Knauer  
Tailings and Mine Waste 2013
27. **Electrochemical Corrosion Studies of EDTA and Polymers in Simulated Once-Through Steam Generator (OTSG) Water for Steam-Assisted Gravity Drainage (SAGD) Process**  
T. Y. Chen, J. Gill, J. Hoots, C. Batton and C. Ralph  
IWC 2013 (November)
28. **Risk Assessment of Concurrent Hydrate and Wax Formation for Deepwater Production Restart Modeling and Experimental Results**  
H. Oschmann, R. Alapati and K. Paso  
SPE-164132 The Woodlands, TX, SPE International Symposium on Oilfield Chemistry, 2013
29. **Peracetic Acid Use in Water Treatment for Oil and Gas Production.**  
R. J. Ryther, V. V. Keasler, R. De Paula, B. Epps, J. Li, D. McSherry and R. Staub  
IWC
30. **Laboratory Investigation of Biocide Degradation Profile During Hydrotesting Shut-in Using Seawater: An Overview.**  
D. Chauhan, I. Chatterjee, S. Davoren and V. V. Keasler  
CorCon
31. **MIC in a CO2 Gathering Line? A Field Case Study of Microbiologically Influenced Corrosion.**  
D. Hinkson, C. Wheeler, C. Oney and V. V. Keasler  
NACE International
32. **Development of Peracetic Acid (PAA) as an Environmentally Safe Biocide for Water Treatment during Hydraulic Fracturing Applications.**  
R. M. De Paula, V. V. Keasler, J. Li, D. McSherry and R. Staub  
SPE International

## UPSTREAM

33. **Development of a High Performance “Green” High Shear Corrosion Inhibitor with Improved Emulsion Tendency for Gas-Condensate Systems**  
R. Harrington and K. Monk  
  
NACE 2013 (March)
34. **Understanding Factors Affecting Corrosion Inhibitor Performance in Under-Deposit Testing with Sand**  
Y. Zhang, J. Moloney and S. Mancuso  
  
NACE 2013 (March)
35. **A Joint Industrial Case Study for Asphaltene Deposition.**  
Priyanka Juyal, Amy McKenna, Tianguang Fan, Tran Cao, Rosa Rueda-Velásquez, Jade Fitzsimmons, Andrew Yen, Ryan Rodgers, Jianxin Wang, Jill S. Buckley, Gray Murray, Stephan Allenson and Jefferson Creek  
  
Energy & Fuels, <http://dx.doi.org/10.1021/ef301956x>
36. **Evaluation of Extraction Method and Characterization of Water Soluble Organics (WSO) from Produced Water by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry**  
Priyanka Juyal, Adam Lewis, Thomas Tekavec, Jacqueline Jarvis, Amy McKenna, Andrew Yen and Ryan Rodgers  
  
Energy & Fuels, submitted
37. **Calcium Naphthenate Solid Deposit Identification and Control in Offshore Nigerian Fields**  
Clement Igwebueze, Lukman Oduola, Oluwaseun Smith, Pieter Vijn and Andrew G. Sheperd  
  
SPE-164055 The Woodlands, TX, SPE International Symposium on Oilfield Chemistry, 2013
38. **Effect of Diluents on Interfacial Properties and SAGD Emulsion Stability: Differential Scanning Calorimetry and Light Scattering Methods**  
Vittoria Balsamo, Jenny Phan and Duy Nguyen  
  
Paper SPE-165384-MS presented at the SPE Heavy Oil Conference, Calgary, Alberta, Canada, 11-13 June
39. **Effect of Diluents and Asphaltenes on Interfacial Properties and SAGD Emulsion Stability: Interfacial Rheology and Wettability**  
Duy Nguyen, Vittoria Balsamo and Jenny Phan  
  
Abstract of the 14th International Conference on Petroleum Phase Behavior and Fouling. June 10-13, 2013, Rueil-Malmaison. France
40. **Effect of Diluents on Interfacial Properties and SAGD Emulsion Stability: I. Interfacial Rheology**  
Duy Nguyen, Vittoria Balsamo and Jenny Phan  
  
Paper SPE-165405-MS presented at the SPE Heavy Oil Conference, Calgary, Alberta, Canada, 11-13 June
41. **Emulsification of Heavy Oil in Aqueous Solutions of Poly (Vinyl Alcohol): A Method for Reducing Apparent Viscosity of Production Fluids**  
Duy Nguyen and Vittoria Balsamo  
  
Energy & Fuels, 27, 4, 1736-1747.
42. **A Convenient Deposition-Based Method for Screening Asphaltene Inhibitors**  
D. Fouchard, J. Carmichael and N. Sadeghi, Petrophase, June 10-13 2013  
  
14th International Conference on Petroleum Phase Behavior and Fouling. June 10-13 Rueil-Malmaison. France

## DOWNSTREAM

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**43. Visbreaker Performance Improvement by Optimisation of Process Conditions and Application of Chemical Additive Treatment Program**

A. Nedelchev, D. Stratiev, G. Stoilov, R. Dinkov, K. Lepidis, R. Sharpe, C. A. Russell, N. Petkova and P. Petkov

Oil Gas European Magazine 39, 03/2013, 147-153.

**44. Fluid Catalytic Cracking (FCC) Process Optimisation Using a Specifically Designed Chemical Additive Treatment Program**

C. A. Russell, K. N. Sawhney and R. Sharpe

14th International Conference on Petroleum Phase Behavior and Fouling , Rueil-Malmaison, France, June 10-13, 2013