

**2008 SPE Ninth International Conference on Oilfield Scale  
28-29 May 2008**

**TECHNICAL PROGRAMME**

**Wednesday, 28 May, 08:30 to 10:00**

**Fleming Auditorium**

**CASE HISTORIES & CHALLENGES I**

**Session Chairpersons:** Huey-Jyh Chen, Chevron  
Gordon M. Graham, Scaled Solutions

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|-------------|---------------|--|
| <b>0830</b> | <b>114079</b> | <b>The Challenges Associated with Performing and Combining Scale Dissolver and Squeeze Treatments in Kristin – A Subsea HP/HT Gas Condensate Field</b><br>R.M. Wat, K.E. Wennberg, R. Holden and B. Hustad, StatoilHydro; S. Heath, M. Archibald and K. Singdahlsen, Clariant Oil Services |
| <b>0900</b> | <b>114077</b> | <b>Scale Challenges in Talisman's Varg Field</b><br>E. Sorhaug, Talisman; G.M. Graham, R. Stalker, I.J.Littlehales and S.L. Kidd, Scaled Solutions   |
| <b>0930</b> | <b>114103</b> | <b>Improvement of Scale Management Using Analytical and Statistical Tools</b><br>M. Scheck and G. Ross, Shell  |
| <b>1000</b> |               | <b>Coffee Break</b>  |

**Wednesday, 28 May, 10:30 to 12:30**

**Fleming Auditorium**

**CASE HISTORIES & CHALLENGES II**

**Session Chairpersons:** Hugh Bourne, BP  
David Wilson, BWA Water Additives

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|-------------|---------------|---|
| <b>1030</b> | <b>113974</b> | <b>Understanding Trends in Sulphate Concentrations in Produced Water Within Oilfields Under Seawater Flood and With Calcium-Rich Formation Water</b><br>R. Wright, Talisman; R.A. McCartney, GeoScience; E. Sørhaug, Talisman   |
| <b>1100</b> | <b>114105</b> | <b>Modelling the Impact of Diesel vs. Water Overflush Fluids on Scale Squeeze Treatment Lives Using a Two-Phase Near-Wellbore Simulator</b><br>O. Vazquez and E. Mackay, Heriot-Watt University; M.M. Jordan, Nalco   |
| <b>1130</b> | <b>114090</b> | <b>Design and Field Deployment of Scale Inhibitors for Reducing the Risk for Chalk Influx Post Squeeze Treatments in Multiple Fractured Horizontal Wells in BP Valhall</b><br>T T. Thingvoll, BP; S. Heath, Clariant, R. Flatebø, BP; M. Madland, UIS; G. Clark and C. Strachan, Clariant; K. Andre, N. Vorland and R. I.Korsnes, UIS |
| <b>1200</b> | <b>114082</b> | <b>Using Nature to Provide Solutions to Calcareous Scale Deposition</b><br>W.C Cheong, A. Neville, P.H Gaskell and S. Abbott, University of Leeds   |
| <b>1230</b> |               | <b>Lunch</b>  |

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**Wednesday, 28 May, 13:30 to 15:30**

**Fleming Auditorium**

**EMERGING TECHNOLOGIES I**

**Session Chairpersons:** Brigitte Bazin, Institute Français du Pétrol  
Myles Jordan, Nalco

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|-------------|---------------|---|
| <b>1330</b> | <b>114060</b> | <b>Enhanced Inhibitor Treatments with the Addition of Transition Metal Ions</b><br>A.T. Kan and G. Fu, Rice University; D. Shen, BJ Chemical Services; H. Al-Saiari and M.B. Tomson, Rice University                                      |
| <b>1400</b> | <b>113656</b> | <b>Innovative Use of Kaolinite in Downhole Scale Management: Squeeze Life Enhancement and Water Shutoff</b><br>N. Fleming and K. Ramstad, StatoilHydro; A. Nelson M-I SWACO; G. Graham, Scaled Solutions                                  |
| <b>1430</b> | <b>114063</b> | <b>Control Placement of Scale Inhibitors in the Formation With Stable Ca-DTPMP Nanoparticle Suspension and its Transport in Porous Media</b><br>D. Shen, BJ Chemical Services; G. Fu, H. Al-Saiari, A. Kan and M. Tomson, Rice University |
| <b>1500</b> |               | <b>SPE Young Professional Award</b>   |
| <b>1515</b> |               | <b>Introduction to Poster Session</b>   |
| <b>1530</b> |               | <b>Coffee &amp; Posters</b>   |

**Wednesday, 28 May, 16:30 to 18:00**

**Fleming Auditorium**

**EMERGING TECHNOLOGIES II**

**Session Chairpersons:** Steve Heath, Clariant Oil Services  
Gill Ross, Shell

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|-------------|---------------|--|
| <b>1630</b> | <b>114096</b> | <b>Radial Core Flood Placement Tests</b><br>R. Stalker, I.J. Littlehales, G.M. Graham and G.F. Oluyemi, Scaled Solutions   |
| <b>1700</b> | <b>114049</b> | <b>Oilfield Data/Return Analysis: A Comparison of Scale Inhibitor Return Concentrations Obtained With a Novel Analytical Method and Current Commercial Techniques</b><br>A.K. Thompson, Champion Technologies; A. Gangstad and H.K. Kotlar, StatoilHydro |
| <b>1730</b> | <b>113595</b> | <b>Detection of Scale Deposition Using Distributed Temperature Sensing</b><br>F.H. Almutairi, KISR; D.R. Davies, Heriot-Watt University  |
| <b>1800</b> |               | <b>Drinks Reception and entertainment, Boyd Suite</b>  |
| <b>1900</b> |               | <b>Conference Dinner, Crombie Suite</b>  |

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**NON-CONVENTIONAL SCALE**

**Session Chairpersons:** Ping Chen, Champion Technologies  
Amy T. Kan, Rice University

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|-------------|---------------|---|
| <b>0830</b> | <b>114042</b> | <b>Control of Silicate Scales in Steam Flood Operations</b><br>D.L. Gallup and C.J. Hinrichsen, Chevron   |
| <b>0900</b> | <b>114058</b> | <b>Mechanistic Study of Chemicals Providing Improved Halite Inhibition</b><br>H. Guan, M-I SWACO, R. Keatch, OMS, C. Benson and N. Grainger, M-I SWACO; L. Morris, Schlumberger |
| <b>0930</b> | <b>114075</b> | <b>Performance of Scale Inhibitors Under Carbonate and Sulfide Scaling Conditions</b><br>J.K. Smith, J.R. Hammons, G.D. Boyd and Q. Fu, Baker Petrolite                         |
| <b>1000</b> |               | <b>Coffee break</b>   |

**Thursday, 29 May, 10:30 to 12:30**

**Fleming Auditorium**

**INTEGRATED APPROACHES**

**Session Chairpersons:** Christian Hurtevent, Total  
Krishnam Raju, Saudi Aramco

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|-------------|---------------|---|
| <b>1030</b> | <b>114034</b> | <b>Thermodynamic Modelling of Naphthenate Formation and Related pH Change Experiments</b><br>M.A. Mohammed and K.S. Sorbie, Heriot-Watt University; A.G. Shepherd, Heriot-Watt University / Shell   |
| <b>1100</b> | <b>114123</b> | <b>Optimising Calcium Naphthenate Control in the Blake Field</b><br>K.B. Melvin and C. Cummine, Talisman; J. Youles, BG Group; H. Williams, G.M. Graham and S. Dyer, Scaled Solutions   |
| <b>1130</b> | <b>114039</b> | <b>Study of BaSO<sub>4</sub> Formation Kinetics and Inhibition Effect of Polyphosphino-Carboxylic Acid (PPCA) With Synchrotron X-Ray Diffraction (SXR)</b><br>E. Mavredaki and A. Neville, University of Leeds; K.S. Sorbie, Heriot-Watt University |
| <b>1200</b> | <b>114086</b> | <b>Veslefrikk Scale Control Strategy and Economic Implications: Revisited 7 Years Later – Did We Improve?</b><br>T. Tjomsland, J.O.Saeten and O. Vikane, StatoilHydro; M. Zettlitzer, RWE Dea; P. Chen, Champion Technologies                       |
| <b>1230</b> |               | <b>Lunch</b>  |

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**CASE HISTORIES & ECONOMICS**

**Session Chairpersons:** Hua Guan, M-I SWACO  
Rex Wat, StatoilHydro  
Maria Carmen Moreira Bezerra, Petrobras

- 1330 113804 Deployment of Real-Time Scale Deposition Monitoring Equipment to Optimize Chemical Treatment for Scale Control During Stimulation Flowback**  
D. Emmons, S.A. Smith, T. Weathers, M.M. Jordan and N.D. Feasey, Nalco
- 1400 113657 Impact of Successive Squeezes on Treatment Lifetime and Well Productivity: Laboratory and Field Evidence**  
N. Fleming and K. Ramstad, StatoilHydro; A.C. Nelson, M-I SWACO; G.M. Graham, Scaled Solutions
- 1430 114085 Scale Squeeze Evaluation Through Improved Sample Preservation, Inhibitor Detection and Minimum Inhibitor Concentration Monitoring**  
K. Ramstad, StatoilHydro; H.C Rohde, M-I SWACO; T. Tydal and D. Christensen, StatoilHydro
- 1500 114109 Evaluation of the Performance of Different Scale Inhibitors to Sulfate Removal Unit**  
T.N. Santos, Fundação Gorceix; M.C.M Bezerra and K.R.S.A Rosa, Petrobras/CENPES; A.A. Rocha, Universidade Federal Fluminense; A.A. Rocha and K.S. da Rosa, Petrobras
- 1530 114106 The Cost and Value of Field, Laboratory, and Simulation Data for Validating Scale Inhibitor Treatment Models**  
J.A. Patroni Zavala, E.J. Mackay, O. Vazquez, L.S. Boak and M. Singleton, Heriot-Watt University, and G. Ross, Shell

**Wednesday, 28 May - Thursday, 29 May,**

**Boyd Suite**

**POSTERS/ALTERNATES**

**Session Chairpersons:** Eric Mackay, Heriot-Watt University  
Terje Østvold, Norwegian University of Science & Technology  
Mingdong Yuan, Baker Petrolite

- 113109 Simulation and Experimental Studies of Mineral Scale Formation Effects on Performance of an Iranian Carbonate Oil Reservoir Under Water Injection**  
A. Taheri, R. Masoudi, M. Zahedzadeh and A.R. Ataei, NIOC; H. Fakhri, PUT
- 113392 Scaling Mitigation and Strategy for First Full Field Steam Injection X Field Oman: History Matching and Modelling**  
A. Nengkoda, J. Walsh, D. Ahmed, A. Busaidy, N. Shuely, S. Sairiry and P. Putra, PDO
- 113667 Managing Radioactive Scale: Strategic Approach and Success Story**

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B. Ghosh, Petroleum Institute; A. Al-Bemani, Sultan Qaboos University; K. Najim, S. Al-Hajri and James Clark, PDO; and F.H. Boukadi, University of Louisiana

- 113826 Scale Inhibitor Solutions for High Temperature ESP Lifted Wells in Northern California: A Case History of Failure Followed by Success**  
J.J. Wylde and D.A. Fell, Clariant
- 113926 Development of a New Polymer Inhibitor Chemistry for Downhole Squeeze Applications**  
H. Montgomerie, P. Chen, T.H. Hagen, O. Vikane, R. Matheson and V. Leirvik, Champion Technologies; C.Frøyflog and J.O. Sæten, StatoilHydro
- 114017 Experimental Study and Field Implementation of Scale Inhibitor Squeeze Treatments in ShengLi Oilfield of China**  
J. Zuo, S. Ren, Z. Fan and F. Yan, China University of Petroleum; L. Xu, K. Hu, X. Wang and H. Chen, ShengLi Oilfield Co.
- 114045 Kinetics of CaCO<sub>3</sub> Scale Formation During Core Flooding**  
T. Larsen and P. Randhol, SINTEF; M. Lioliou, ICE/HT FORTH; L.O. Jøsang and T. Østvold, NTNU
- 114046 Development of a Viscosified Scale Inhibitor for Improving Placement in Acid Fractured Limestone Reservoirs**  
S.M. Heath, M. Sim and M. Archibald, Clariant; R. Stalker, Scaled Solutions
- 114059 Inhibitor Selection for Iron Scale Control in MEG Regeneration Process**  
H. Guan, G. Cole and P.J. Clark, M-I SWACO
- 114062 Seawater Injection, Inhibitor Transport and Rock-Brine Interactions, and BaSO<sub>4</sub> Scale Control During Seawater Injection**  
D. Shen, BJ Chemical Services; G. Fu, H. Al-Sairi, A. Kan and M. Tomson, Rice University
- 114064 Iron (II)-Calcium Carbonate: Precipitation Interaction**  
H.A. Alsaiani, Saudi Aramco; S. Yean, M.B. Tomson and A.T. Kan, Rice University
- 114065 A New Chemical Treatment to Inhibit Iron Sulfide Deposition**  
M. Lehmann and F.F. Firouzkouhi, Baker Petrolite
- 114072 Two Year Results of a Breakthrough Physical Water Treating System for the Control of Scale in Oilfield Applications**  
L.J. Rzeznik and M.S. Juenke, Weatherford; D. Stefanini, Hydropath Holdings; M. Clark and P. Lauretti MSL Oilfield Services
- 114089 Precipitation of Iron and Calcium Carbonate in Pipelines at Varying MEG Contents**  
E.M. Flaten, NTNU; G. Watterud, NNTU/IFE; J-P. Andreassen, NTNU; M. Seiersten, IFE
- 114108 Coupled Adsorption/Precipitation of Scale Inhibitors: Experimental Results and Modelling**  
M. Kahrwad, K.S. Sorbie and L.S. Boak, Heriot-Watt University
- 114112 Scale Management in Espadarte Field**  
R. Hernandez, V.A. Melo, J.A. Santos, F.F. Rosário, M.C.M. Bezerra and K.R.S.A. Rosa, Petrobras
- 114124 Ferrous Carbonate Nucleation and Inhibition**  
S. Yean, H. Al-Sairi, A.T. Kan and M.B. Tomson, Rice University

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- 114255 First Application of Scale Inhibitor During Hydraulic Fracturing  
Treatments In Western Siberia**  
K. Cheremisov, D. Oussoltsev and K.K. Butula, Schlumberger; A. Gaifullin,  
I. Faizullin and D. Senchenko, Gazprom-Neft