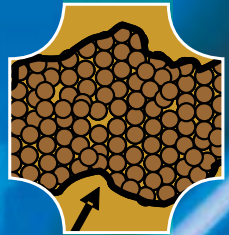
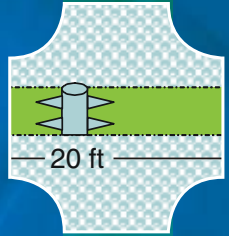


SPE International  
Conference and Exhibition on

# FORMATION DAMAGE CONTROL

7-9 February

Lafayette, Louisiana, USA  
DoubleTree by Hilton Lafayette  
[www.spe.org/go/2018FD](http://www.spe.org/go/2018FD)



CONFERENCE  
PROGRAM



Society of Petroleum Engineers

## Welcome From the Chairperson

Welcome to the 2018 edition of the SPE International Conference and Exhibition on Formation Damage Control.

It is great to have you participating in this acclaimed international event representing the latest technologies in preventing, diagnosing, and remediating formation damage.

### Over the next couple of days, you can expect to:

- Learn from technical presentations covering a wide range of topics
- Gain new insights into well productivity and longevity
- Network with leading experts in completion, workover, and remediation technologies
- Meet with colleagues from around the world
- Hear viewpoints from industry, public, and financial officials who influence the E&P industry

You'll find that the technical program substantiates the conference's reputation as the oil and gas industry's premier event devoted to formation damage, production, and completion technologies. Not only will you learn about the latest technologies, you'll also gain a deeper understanding of the impact of completion, reservoir engineering, formation evaluation, drilling, and production on the financial health of your company.

In your downtime, local events and attractions along with the mild winter climate of south Louisiana promise a memorable experience. Enjoy Lafayette's southern hospitality and world-renowned cuisine by participating in the social functions that we have planned for you as part of this event.

Have a great conference! Hope you'll make the most of all it has to offer.



**Ali Ghalambor**

Oil Center Research International  
Program Chairperson



**Syed Ali**

Program Chairperson  
Consultant

# Committees

(as of 18 January 2018)

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### David Wagner

Chevron ETC

### George K. Wong

University of Houston

## Table of Contents

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# Thank You to Our Sponsors

(as of 18 January 2018)

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# Pre-Conference Training Courses



Society of Petroleum Engineers

## TRAINING COURSES

In case you missed the pre-conference training courses, SPE offers a multitude of learning opportunities in convenient locations around the world. Courses are held in conjunction with SPE conferences, workshops, local sections, and at SPE training centers.

Learn more about and register for SPE training courses at **[www.spe.org/go/learn](http://www.spe.org/go/learn)**.

Here is a glimpse of the courses which were offered in conjunction with this year's SPE International Conference and Exhibition on Formation Damage Control.

- Formation Damage in Waterflooding, Produced Water Re-Injection and EOR
- Fracpacking for Sand Control
- Multistage Completions, Fracturing, and Refracturing in Shales

# Schedule of Events

(as of 18 January 2018)

Tuesday, 6 February			
1850-2030	Cajun Ice Breaker Reception (Salons D-E)		
	SALON B	SALON A	ASHLAND
Wednesday, 7 February			
0800-1700	Exhibits (Mezzanine Level - 4th floor)		
0900-1200	Session 1 - Sand Control Practices	Session 2 - Well Stimulation-Carbonates	Session 3 - Damage Mechanisms
1200-1400	Keynote Luncheon, with speaker Rustom Mody (VP-Technical Excellence at Baker Hughes, a GE Company) (Salons E-F-D)		
1400-1700	Session 4 - Well Stimulation Fracturing	Session 5 - Damage Removal Aspects of Wellbore Fluids	Session 6 - Formation Damage Remediation and Diagnostics
1600-1830	Knowledge Sharing ePosters I (Oaklawn & Rosedown)		
1830-2030	Welcome Reception (River Oaks Event Center - offsite)		
Thursday, 8 February			
0800-1700	Exhibits (Mezzanine Level - 4th floor)		
0830-1130	Session 8 - Well Stimulation Tools and Treatments	Session 9 - Injection Wells and Injectivity	Session 10 - Formation Damage Attributed to Drilling, Cementing and Perforating
1030-1400	Knowledge Sharing ePosters II (Oaklawn & Rosedown)		
1130-1330	Keynote Luncheon, with speaker Marc Rowland (Founder and Senior Managing Director of IOG Capital, LP) (Salons E-F-D)		
1330-1630	Session 12 - Sand Control Case Studies	Session 13 - Formation Damage Attributed to Completion Fluids	Session 14 - New Developments and Field Experiences
1830-2200	Social Dine and Dance (Randol's Restaurant & Cajun Dance Spot - offsite)		
Friday, 9 February			
0830-1200	Open Forum: Mythbusters: Will Formation Damage Crush Your Completion? Proven or Busted! (Salons A-B)		
1130-1400	On-Site Product Exhibit and Luncheon (north parking lot, overlooking the river)		

## Schedule – Quick View

### Registration

Located on the Mezzanine Level (Fourth floor).

**Tuesday, 6 February:** 1600–1900

**Wednesday, 7 February:** 0800–1700

**Thursday, 8 February:** 0800–1700

### Exhibition

Located on the Mezzanine Level (Fourth floor).

**Wednesday, 7 February:** 0800–1700

**Thursday, 8 February:** 0800–1700

### Speaker Check-In

Speaker Check-In is located in the Oak Alley room. Speakers are requested to check-in prior to reporting to their assigned session room.

**Wednesday, 7 February:** 0800–1700

**Thursday, 8 February:** 0800–1700

### Author's Breakfast

Presenting authors are invited to attend the authors' breakfast in Salon D on Wednesday and Thursday from 0700-0800, on the day of their presentation, and seat at the table designated for their session.

## General Information

### Consent to Use of Photographic Images

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### Copyright Information

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### About the Society of Petroleum Engineers

The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose more than 164,000 members in 143 countries are engaged in oil and gas exploration and production. SPE is a key resource for technical knowledge providing publications, events, training courses, and online resources at **[www.spe.org](http://www.spe.org)**.

## Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 0900–1200

### 01 Sand Control Practices

#### Salon B

**Session Chairpersons:** George K. Wong, University of Houston;  
Michael T. Hecker, ExxonMobil Development Co

- |      |        |   |
|------|--------|---|
| 0900 | 189528 | <p><b>Sand Control Design Through Assessment of Mathematical Models Representing Particle Size Distribution of Reservoir Sands</b></p> <p>M. Roostaei, A. Nouri, V. Fattahpour, M. Mahmoudi, University of Alberta; M. Izadi, Louisiana State University; A. Ghalambor, Oil Center Research International; B. Fermaniuk, RGL Reservoir Management</p> |
| 0930 | 189515 | <p><b>A Novel Approach to Constant Flow-Rate Sand Retention Testing</b></p> <p>C.C. Fischer, H.M. Hamby, Constien &amp; Associates</p>  |
| 1000 | 189484 | <p><b>Downhole Gauge Data Analysis of Open-Hole Gravel Packing Treatments: Methodology and Examples</b></p> <p>A. Kumar, M. Beldongar, D.M. Agee, B.R. Gadiyar, M. Parlar, Schlumberger</p>   |
| 1030 | 189568 | <p><b>Sand Production Caused by Water Hammer Events: Implications for Shut-In Protocols and Design of Water Injection Wells</b></p> <p>H. Wang, J. Hwang, M.M. Sharma, The University of Texas At Austin</p>  |
| 1100 | 189481 | <p><b>Estimating Sand Production Through Gravel Packs</b></p> <p>C. Wu, M.M. Sharma, The University of Texas at Austin; M.J. Fuller, S.P. Mathis, Chevron Energy Technology Company</p>   |
| 1130 | 189539 | <p><b>Comparative Study on the Performance of Different Stand-alone Sand Control Screens in Thermal Wells</b></p> <p>V. Fattahpour, M. Mahmoudi, RGL Reservoir Management; C. Wang, O. Kotb, M. Roostaei, A. Nouri, University of Alberta; B. Fermaniuk, A. Sauve, C. Sutton, RGL Reservoir Management</p>  |



# Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 0900-1200

## 02 Well Stimulation - Carbonates

### Salon A

**Session Chairpersons:** D V Satya Gupta, Baker Hughes; Wade H. Williams, Chevron Corporation

- 0900 189546 **Influence of Transport Conditions on Optimal Injection Rate for Acid Jetting in Carbonate Reservoirs**  
D. Ridner, T. Frick, D. Zhu, A.D. Hill, Texas A&M University; R. Angeles, N. Vishnumolakala, ExxonMobil Upstream Research Company; C.E. Shuchart, ExxonMobil Development Company
- 0930 189506 **Fundamental Wormhole Characteristics in Acid Stimulation of Perforated Carbonates**  
A.N. Seagraves, M.E. Smart, M.E. Ziauddin, Schlumberger
- 1000 189496 **A Novel Equipment-Friendly and Environment-Friendly and Well Stimulation Fluid for Carbonate Reservoirs: Better Wormholes and Lower Corrosion at Reservoir Conditions**  
J.S. Pandey, University of Kansas, Technical University of Denmark; N. Nazari, University of Kansas; K. Thomsen, Technical University of Denmark; R. Barati Ghahfarokhi, University of Kansas
- 1030 189559 **New Single-Phase Retarded Acid System Boosts Production after Acid Fracturing in Kazakhstan**  
D. Abdrazakov, M. K.R. Panga, C. Daeffler, Schlumberger; D. Tulebayev, Emir Oil LLP
- 1100 189519 **The Effect of pH and Mineralogy on the Retention of Polymeric Scale Inhibitors on Carbonate Rocks for Precipitation Squeeze Treatments**  
K. Jarraghan, K.S. Sorbie, M.A. Singleton, L.S. Boak, A.J. Graham, Heriot-Watt University
- 1130 189486 **Skin Factor Equations for Anisotropic Wormhole Networks and Limited Entry Completions**  
M. Palharini Schwalbert, Petrobras and Texas A&M University; D. Zhu, A.D. Hill, Texas A&M University

## Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 0900–1200

### 03 Damage Mechanisms

#### Ashland

**Session Chairpersons:** Pavel Bedrikovetsky, University of Adelaide;  
Michael Byrne, LR Senergy

- |      |        |  |
|------|--------|--|
| 0900 | 189490 | <p><b>A Flow Laboratory Study of an Enhanced Perforating System Designed for Well Stimulation</b></p> <p>R.P. Satti, R. White, D. Ochsner, T. Sampson, S.N. Zuklic, Baker Hughes, a GE company; S. Geerts, Owen Oil Tools Inc</p>                      |
| 0930 | 189488 | <p><b>Understanding the Impact of Production Slugging Behavior on Near-Wellbore Hydraulic Fracture and Formation Integrity</b></p> <p>H. Lu, O.L. Anifowoshe, L. Xu, Schlumberger</p>  |
| 1000 | 189535 | <p><b>Improving Well Productivity of Tight Gas Reservoirs by Using Sodium Silicate in Water-Based Drill-in Fluid</b></p> <p>T. Jafarov, M.A. Mahmoud, A.A. Al-Majed, S.M. Elkatatny, B.S. Bageri, King Fahd University of Petroleum &amp; Minerals</p> |
| 1030 | 189541 | <p><b>Salt Precipitation in the Near Well Bore Region of Gas Wells</b></p> <p>P. Egberts, R. Nair, A. Twerda, TNO</p>  |
| 1100 | 189471 | <p><b>Investigating Impact of Rock Type and Lithology on Mud Invasion and Formation Damage</b></p> <p>C.P. Ezeakacha, S. Salehi, University of Oklahoma; A. Ghalambor, Oil Center Research Intl.; F. Bi, Grace Instrument Company</p>                  |
| 1130 | 189523 | <p><b>Treating Liquid Banking Problem To Increase Shale Gas Wells Productivity</b></p> <p>T.T. Phan, M. Kazempour, D.T. Nguyen, Nalco Champion, An Ecolab Company</p>  |

# Special Event

(as of 18 January 2018)

Wednesday, 7 February 2018 | 1200–1400

## Keynote Luncheon

Salons E-F-D



**Speaker:**

### **Rustom Mody**

VP-Technical Excellence  
at Baker Hughes, a GE Company

### **Biography**

**Rustom K. Mody, P.E.**, is vice president of technical excellence for Baker Hughes, a GE company. He has more than 39 years' experience in drilling, completion, and production, of which 30 years has been with Baker Hughes, a GE company in various executive positions in technology.

Mody has authored more than 75 articles, technical presentations and publications, and holds 18 patents. He has won numerous Meritorious Awards for Engineering Innovation. Mody is a Distinguished Member of SPE, member of the International Association of Drilling Engineers (IADC), and serves on various committees. He also serves on the board of advisors at many institutions and industry organizations. In 2016 he was appointed to serve on the advisory board of Council on Competitiveness Technology Leadership and Strategy Initiative in Washington DC.

He earned Bachelor of Science degree in Mechanical Engineering from University of Pune, Master of Science degree in Mechanical Engineering from University of Oklahoma, and Master of Business Administration in Finance from University of Houston.

## Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 1400-1700

### 04 Well Stimulation - Fracturing

#### Salon B

**Session Chairpersons:** Harold Brannon, Sun Drilling Products Corp.;  
Mahmoud Asadi, Fritz Industries Inc

- |      |        |  |
|------|--------|--|
| 1400 | 189494 | <p><b>Integrated Fracture Performance and Formation Damage Assessment to Enhance Well Production in the Hassi Messaoud Field, Algeria: Case Study</b></p> <p>M. Azari, H. Hadibeik, S. Ramakrishna, Halliburton; K. Bakiri, A. Imouloudene, Sonatrach; A. Ghalambor, Oil Center Research International</p>   |
| 1425 | 189476 | <p><b>Controlling Proppant Wettability Leads to Increase Flowback Recovery and Flow in Frac-Packs</b></p> <p>N. Spurr, K. Langlinais, D.G. Stanley, M.J. Usie, C. Li, Baker Hughes, a GE company</p>   |
| 1450 | 189551 | <p><b>Effect of Fracturing Chemicals on Well Productivity: Avoiding Pitfalls in “Big Data” Analysis</b></p> <p>D. Khvostichenko, S.M. Makarychev-Mikhailov, Schlumberger</p>   |
| 1515 | 189543 | <p><b>Novel Chelation Opens the Door for Redeployment of Sea Water Based Fracturing Fluids in High Temperature Wells</b></p> <p>D. Gupta, P.S. Carman, S. Nguyen, Baker Hughes, a GE Company</p>   |
| 1540 | 189478 | <p><b>Successful Application of Clean Fracturing Fluid Replacing Guar Gum Fluid to Stimulate Tuffstone in San Jorge Basin, Argentina</b></p> <p>H. Qu, R. Liancheng, Chongqing University of Science &amp; Technology; H. Wenhao, University of Louisiana at Lafayette; J. Tingxue, Y. Yiming, Sinopec Research Institution of Petroleum Engineering</p> |
| 1605 | 189555 | <p><b>Lowering Fresh Water Usage in Hydraulic Fracturing by Stabilizing scCO<sub>2</sub> Foam with Polyelectrolyte Complex Nanoparticles Prepared in High Salinity Produced Water</b></p> <p>H. Hosseini, J. Tsau, E. Peltier, R. Barati, University of Kansas</p>   |
| 1630 | 189498 | <p><b>Fracture Permeability of Activated Calcite Veins to Water and Gas</b></p> <p>M. Mokhtari, University of Louisiana At Lafayette; A.N. Tutuncu, Colorado School of Mines</p>   |

# Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 1400–1700

## 05 Damage Removal Aspects of Wellbore Fluids

### Salon A

**Session Chairpersons:** Allan Twynam, Consultant; Lanne R. Houchin, Production Improvement Consultants

- |      |        |  |
|------|--------|--|
| 1400 | 189500 | <b>The Real World isn't Perfect: An Investigation into Wellbore Clean-up with Non-Uniform Filtercake Exposure</b><br>C.C. Fischer, Constien and Associates   |
| 1425 | 189475 | <b>Development of Environmentally Friendly Epoxies for Well Conformance</b><br>F. Bertram, Maersk Oil; A. Tuxen, T.B. Nielsen, Danish Technological Institute  |
| 1450 | 189959 | <b>Novel Surface Modified Nanoparticles for Mitigation of Condensate and Water Blockage in Gas Reservoirs</b><br>M.A. Sayed, F. Liang, H. Ow, Aramco Services Company  |
| 1515 | 189562 | <b>Laboratory Preparatory Work of Cased-hole Clean-up as a Part of Entire Remedy Program in Removing Damage Attributed to Oil-Based-Mud</b><br>H. Yonebayashi, Y. Miyagawa, T. Watanabe, S. Kurokawa, S. Teshima, R. Yamada, INPEX |
| 1540 | 189538 | <b>Chelate Based Acidizing Fluid Provides HSE Advantages in Successful North Sea Application</b><br>A.A. Dos Santos, E. De Oliveira, T. Stanitzek, AkzoNobel; A. Hoq, A. Doghmi, BP  |
| 1605 | 189563 | <b>High-Temperature Viscoelastic Surfactant Fluids with Low Scaling Tendency and Based on Seawater, Produced Water, or Brines</b><br>L. Li, F. Liang, Aramco Services Company  |
| 1630 | 189487 | <b>Microbial Remediation of Guar-based Fracturing Fluid Damage</b><br>X. Ma, G. Lei, Z. Wang, Q. Da, P. Song, X. Zhang, C. Yao, China University of Petroleum (East China)   |

## Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 1400–1700

### 06 Formation Damage Remediation and Diagnostics

#### Ashland

**Session Chairpersons:** William Norman, NSI Technologies Inc.; Nicholas Paris, Cobalt International Energy, Inc.

- |      |        |   |
|------|--------|---|
| 1400 | 189514 | <p><b>Microemulsions Increase Well Productivity by Removing Organic Deposits and Inorganic Scale in One-Step</b></p> <p>L. Quintero, M. Felipe, K. Miller, R. Ponnapati, Baker Hughes, a GE company; M. Loya, Breitburn Energy Partners</p>   |
| 1425 | 189558 | <p><b>Formation Damage Circumvent in HP-HT due to Pore Pressure Regression</b></p> <p>S.S. Shaker, Geopressure Analysis Services</p>  |
| 1450 | 189489 | <p><b>Application of Solid Scale Inhibitor in Annular Space to Reduce Well Intervention Cost</b></p> <p>S. Bhaduri, D. Shen, D. Gupta, Baker Hughes, a GE company</p>   |
| 1515 | 189560 | <p><b>Formation Damage versus Chemical Performance - Important Aspects for Upscaling Scale Inhibitor Squeeze Core Floods for Carbonate Systems</b></p> <p>I. Mokogwu, S.C. Wilson, G.M. Graham, Scaled Solutions Limited</p>  |
| 1540 | 189533 | <p><b>Systematic Laboratory and Modelling Study of Kaolinite in Rocks On Formation-Damage-Fines-Migration (non-equilibrium effects, analytical model)</b></p> <p>T. Russell, L. Chequer, A. Badalyan, The University of Adelaide; A. Behr, L.C. Genolet, P. Kowollik, Wintershall Holding AG; A. Zeinijahromi, P.G. Bedrikovetsky, The University of Adelaide</p> |
| 1605 | 189503 | <p><b>Dispersion-Based Paraffin Inhibitors Adsorbed in Solid Substrates Affords Long Term Flow Assurance</b></p> <p>F.H. De Benedictis, S. Bhaduri, Baker Hughes, a GE company</p>  |
| 1630 | 189526 | <p><b>A New Tool for Formation Damage Management</b></p> <p>A. Restrepo, Equion Energia LTD; R.D. Zabala Romero, Ecopetrol SA; J.M. Calle, K.Y. Espinosa, J.M. Mejia, Universidad Nacional De Colombia</p>  |

# Technical Program

(as of 18 January 2018)

Wednesday, 7 February 2018 | 1600–1830

## 07 Knowledge Sharing ePoster I

### Oaklawn & Rosedown

Session Chairperson: Syed Ali, Consultant

- 189540 **Improving Wormholing Efficiency in Carbonates With a Novel System based on Hydrochloric Acid**  
C.S. Daeffler, J. Fernandez del Valle, J.M. Kariampally, J.E. Elkhoury, M. Nikolaev, M.K. Panga, Schlumberger
- 189571 **Effect of Multi-Stage Hydraulic Fractures on Performance of Naturally Fractured Tight Oil Reservoirs with Bottom-Water**  
S. Prasun, Louisiana State University; A. Ghalambor, Oil Center Research International
- 189534 **Revival of Green Conformance and IOR/EOR Technologies: Nanosilica Aided Silicate Systems - A Review**  
I.J. Lakatos, J. Lakatos-Szabó, G.J. Szentes, University of Miskolc, Research Institute of Applied Earth Sciences
- 189509 **Integrated Image Processing and Computational Techniques to Characterize Formation Damage**  
C.P. Ezeakacha, University of Oklahoma; A. Rabbani, Sharif University of Technology; S. Salehi, University of Oklahoma; A. Ghalambor, Oil Center Research Intl.
- 189529 **Economic Evaluation of Wettability Alteration towards the Alleviation of Condensate Blocking**  
O.I. Ajagbe, University of Oklahoma; M. Weiss, Apache Corp.; M.M. Fahes, University of Oklahoma
- 189467 **Fracture Effect Limitation on Residual Oil Saturation: Aperture Shrinkage**  
S. Canbolat, Near East University; M. Parlaktuna, Middle East Technical University
- 189958 **Use of Fluid Level Survey Data to Infer Near-Wellbore Conditions for Curing Lost Circulation Wells**  
B. Guo, University of Louisiana at Lafayette; J. Li, University of Petroleum China Beijing; X. Zhang, X. Cai, University of Louisiana at Lafayette; G. Wang, Southwest Petroleum University

## Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 0830–1130

### 08 Well Stimulation Tools and Treatments

#### Salon B

**Session Chairpersons:** Leonard Kalfayan, Hess Corp.; Mehdi Azari, Halliburton Co.

- |      |        |   |
|------|--------|---|
| 0830 | 189477 | <p><b>A Novel High-Pressure, Low Temperature Perforation Diverter</b><br/>R.C. Navarrete, M. Asadi, S.M. Fleenor, Fritz Industries Inc.</p>   |
| 0855 | 189473 | <p><b>Modeling the Effectiveness of Diverters for Matrix Acidizing Based on Filter Cake Characteristics</b><br/>X. Tan, C. Payne, M.K. Panga, Schlumberger</p>  |
| 0920 | 189499 | <p><b>The Remediation of Oilfield Asphaltenic Deposits: Near-Well-Bore Application</b><br/>N. Budd, Nalco Champion; N.B. Joshi, Anadarko Petroleum Corp; C. Russell, A. Paille, Q. Li, Nalco Champion</p>   |
| 0945 | 189517 | <p><b>Corrosion Mitigation of HF Acid-Containing Fluids for Ti Alloy in Marine Risers</b><br/>E.A. Reyes, A. Kridner, Halliburton</p>   |
| 1010 | 189482 | <p><b>Modern Fracturing Revitalizes Dormant Technologies: A Case History</b><br/>C. Li, P.S. Carman, B.J. Davis, Baker Hughes, a GE company</p>   |
| 1035 | 189573 | <p><b>An Improved Ball Sealer Model for Well Stimulation</b><br/>X. Tan, X. Weng, T.K. Ahmed, T. Bukovac, P. Enkababian, Schlumberger</p>   |
| 1100 | 189567 | <p><b>Evaluation of the Effectiveness of Matrix Stimulation Recipes for High CO<sub>2</sub> Carbonate Reservoir to Bypassing Formation Damage</b><br/>Y. Sazali, S. Misra, W.L. Sazali, Petronas Research Sdn Bhd; J. M Ibrahim, Petronas; G.M. Graham, S.L. Kidd, Scaled Solutions Limited; H.A. Ohen, HPO Global Resources Ventures Inc.; S. Godeke, Universiti Brunei Darussalam</p> |



# Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 0830-1130

## 09 Injection Wells and Injectivity

### Salon A

**Session Chairpersons:** Euin Vickery, Shell International E&P (Rijswijk);  
Carl T. Montgomery, NSI Technologies LLC

- 0830 189521 **Injectivity Decline during Waterflooding and PWRI due to Fines Migration**  
S. Borazjani, L.B. Chequer, T. Lindsay Russell, P.G.  
Bedrikovetsky, The University of Adelaide
- 0855 189513 **An Experimental Investigation of Formation Damage Induced by PWRI in Unconsolidated Sands**  
J. Ochi, R. Oughanem, Total
- 0920 189470 **A Theoretical Study of the Effect of Salt Precipitation on CO<sub>2</sub> Injectivity**  
R. Shaibu, Y.A. Sokama-Neuyam, J.R. Ursin, University of Stavanger
- 0945 189510 **Successful Hot Water Injection Trial in Stacked Reservoirs in South Lokichar Basin - Onshore Kenya**  
M. Jha, S. Namuganyi, J. Van Limborgh, A. Wenk, M. Amin, F. Anuar, P.A. Peytchev, Tullow Oil Plc.; S. Lightford, Formerly Halliburton; B. Reilly, Halliburton; D. Brankling, OCTL
- 1010 189485 **Fines-Migration-Assisted Waterflooding To Improve Sweep Efficiency (Analytical Model)**  
S. Borazjani, the University of Adelaide; A. Behr, L.C. Genolet, P. Kowollik, Wintershall Holding GmbH; A. Zeinjahromi, P. Bedrikovetsky, the University of Adelaide
- 1035 189549 **Improving Well Injectivity by Surfactant Flushing - A Digital Rock Study**  
J.F. Bautista, R. Xu, A. Fager, B. Crouse, D. Freed, EXA Corporation
- 1100 189544 **Field Application of Engineered Water Injection in Carbonate Reservoirs under Permeability Channeling and Gravity Underride Conditions**  
J.O. Adegbite, E.W. Al-Shalabi, B. Ghosh, Khalifa University of Science and Technology, The Petroleum Institute

## Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 0830–1130

### 10 Formation Damage Attributed to Drilling, Cementing and Perforating

#### Ashland

**Session Chairpersons:** Syed Ali, Consultant; Oya Karazincir, Chevron ETC

- |      |        |  |
|------|--------|--|
| 0830 | 189505 | <p><b>How Does Mixing Water Quality Affect Cement Properties</b><br/>F. Saleh, R. Rivera, S. Salehi, C. Teodoriu, University of Oklahoma; A. Ghalambor, Oil Center Research Intl.</p>  |
| 0855 | 189483 | <p><b>Perforation Crushed Zone Characteristics in a Subsurface Sandstone</b><br/>G. Craddock, J. Smith, D.J. Haggerty, Halliburton Jet Research Center</p>   |
| 0920 | 189531 | <p><b>Qualification and Implementation of a Technologically and Cost Effective Solution for Perforating in Drilling Fluid for HPHT Fields: Gudrun Case History</b><br/>N. Fleming, M. Karunakaran, S. Hireche, Statoil ASA</p>                                       |
| 0945 | 189553 | <p><b>Mechanisms of Perforation-Induced Damage in Carbonates and the Effect on Injection Flow Performance</b><br/>A.N. Seagraves, M.E. Smart, M.E. Ziauddin, Schlumberger</p>  |
| 1010 | 189472 | <p><b>Transient Cuttings Transport with Foam in Horizontal Wells-A Numerical Simulation Study for Applications in Depleted Reservoirs</b><br/>S. Prasun, Louisiana State University; A. Ghalambor, Oil Center Research International</p>                             |
| 1035 | 189530 | <p><b>Evaluating Formation Damage Predictions Drawn From HPHT Core Flooding Tests on Brent Group Sandstone Reservoir Cores with Heavy Formate Drill-In Fluids: A Case Study From the Huldra Field</b><br/>J.D. Downs, Formate Brine Ltd; N. Fleming, Statoil ASA</p> |
| 1100 | 189572 | <p><b>Laboratory Investigation of Zinc and Lead Sulphide Inhibition</b><br/>B.G. Al-Harbi, A.J. Graham, K.S. Sorbie, Heriot-Watt University</p>  |

# Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 1030-1400

## 11 Knowledge Sharing ePoster II

Oaklawn and Rosedown

Session Chairperson: Hugues Poitrenaud, Total

- 189537 **Methodology for Evaluating Drag Reduction Characteristics of Friction Reducer**  
S.N. Shah, University of Oklahoma; M. Asadi, Fritz Industries Inc.; R.S. Wheeler, Baker Hughes, a GE company; H.D. Brannon, Sun Drilling Products Corp.; S. Kakadjian, Keane Group Holdings; B. Ainley, ConocoPhillips; Y. Chen, Schlumberger; P.M. Mcelfresh, Consultant; A. Ghalambor, Oil Center Research Intl.; P.B. Kaufman, Kaufman Consulting; D. Archacki, Shrieve Chemical Products
- 189480 **Determination of Maximum Allowable Safe Core Retrieval Rates**  
R. Ashena, G. Thonhauser, Montan University of Leoben; A. Ghalambor, Oil Center Research Intl.; V. Rasouli, University of North Dakota; R. Manasipov, Montan University of Leoben
- 189495 **Causes and Mitigation of Completion Fluids-induced Formation Damage in High Temperature Gas Wells**  
B.S. Hamzaoui, A.M. Al Moajil, Saudi Aramco
- 189564 **Application of Polyelectrolyte Complex Nanoparticles to Increase the Lifetime of Poly (Vinyl Sulfonate) Scale Inhibitor**  
M. Veisi, S.J. Johnson, K. Peltier, C. Berklund, University of Kansas; J. Liang, Texas A&M University; R. Barati Ghahfarokhi, University of Kansas
- 189469 **Newly Developed, Highly Automated Apparatus for Rapid Evaluation of Stimulation Fluid Additives**  
A. Recio, III, D.N. Benoit, A. Potty, J. Sun, K. Henkel, Halliburton Energy Services

*(continued on next page)*

## Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 1030-1400

### 11 Knowledge Sharing ePoster II (continued)

#### Oaklawn and Rosedown

**Session Chairperson:** Hugues Poitrenaud, Total

- 189570 **The Impact of the Fracturing Fluid Spontaneous Imbibition on the Petrophysical Properties of Low Permeability Reservoirs**  
A.A. Al-Ameri, M.C. Watson, T.D. Gamadi, Texas Tech University
- 189511 **Multifunctional, Salt-Tolerant Friction Reducer Stabilizes Clay Formations and Minimizes the Alteration of Rock Wettability under Downhole Conditions after Hydraulic Fracturing**  
L. Xu, K. He, A. Wittmeyer, J.W. Ogle, Multi-Chem, A Halliburton Service
- 189960 **Nanomaterials-Enhanced Hydrocarbon-Based Well Treatment Fluids**  
L. Li, S. Ozden, Aramco Services Company; G.A. Al-Muntasheri, Saudi Aramco; F. Liang, Aramco Services Company

## Special Event

(as of 18 January 2018)

Thursday, 8 February 2018 | 1130-1330

### Keynote Luncheon

Salons E-F-D



**Speaker:**

#### **Marc Rowland**

Founder and Senior Managing Director  
of IOG Capital, LP

#### **Biography**

**Marc Rowland** is the founder & senior managing director of IOG Capital, where he leads the company's investment team through his 40+ years of experience in the oil & gas upstream and midstream industry.

He is considered a leading industry expert in energy mergers, acquisitions, divestitures, public securities transactions, and derivatives facilities. He has won numerous awards for transactions, and has received recognition by *Institutional Investor* as "Energy CFO of the Year."

Rowland is the former executive vice president and chief financial officer of Chesapeake Energy Corporation, where he led the company from its IPO in 1993 to a \$40+ billion market cap oil and gas producer for 18 years.

Rowland serves on a number of private and public boards, including as chairman of the board for SilverBow Resources. He is a 1975 alumnus of Wichita State University where he currently serves as a member of the Investment Committee.

## Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 1330–1630

### 12 Sand Control - Case Studies

#### Salon B

**Session Chairpersons:** Mehmet Parlak, Schlumberger; Xiuli Wang, Consultant

- |      |        |  |
|------|--------|--|
| 1330 | 189554 | <p><b>A Novel Viscoelastic Surfactant Fluid System Incorporating Nanochemistry for High Temperature Gravel Packing Applications</b></p> <p>N. Vaidya, V. Lafitte, S.M. Makarychev-Mikhailov, M.K. Panga, C.E. Nwafor, B.R. Gadiyar, Schlumberger</p>   |
| 1400 | 189548 | <p><b>Tunu: From lab to Field Application With a new Hybrid Inorganic-Organic Sand Consolidation Fluid as Primary Treatment on Shallow Reservoirs</b></p> <p>J. Andrieu, B. Kutzky, B.T. Schackmann, Engineered nanoProducts Germany AG; A. Mahardhini, I. Abidiy, H.M. Poitrenaud, Total</p>  |
| 1430 | 189491 | <p><b>Openhole Mechanical Packer with Eccentric Shunt Tube Gravel Pack Assembly Reduces Capex and Accelerates Production in Kaombo Deepwater Development, Angola</b></p> <p>J. Hernandez, Total SA; B.H. Lai, Total E&amp;P Angola; O. Bahabanian, Total SA; D. Goyallon, Total E&amp;P; A.A. Ahmad Nordin, C.E. Nwafor, E.Y. Taleballah, L. Semin, Schlumberger</p> |
| 1500 | 189557 | <p><b>A Large-Scale Sand Retention Test Facility for Evaluation and Selection of Optimal Standalone Sand Screen for Injection Wells in Thermal Operations</b></p> <p>M. Mahmoudi, V. Fattahpour, RGL Reservoir Management; C. Wang, O. Kotb, M. Roostaei, A. Nouri, University of Alberta; B. Fermaniuk, A. Sauve, C. Sutton, RGL Reservoir Managment</p>            |
| 1530 | 189556 | <p><b>Optimising Sand Control And Production Strategies in A Low Permeability Sandstone Oil Field</b></p> <p>B. Daramola, Propellio Limited; C.M. Alinnor, Chevron Nigeria Ltd.</p>  |
| 1600 | 189492 | <p><b>Successful Installation of Horizontal Openhole Gravel-Pack Completions in Low Fracture Gradient Environment: A Case History from Deepwater West Africa</b></p> <p>J. Jeanpert, T. Banning, C. Abad, I. Mbamalu, Schlumberger; J.A. Hardy, CNR International</p>  |

# Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 1330–1630

## 13 Formation Damage Attributed to Completion Fluids

### Salon A

**Session Chairpersons:** Niall Fleming, Statoil ASA; Reza B. Ghahfarokhi, University of Kansas

- |      |        |   |
|------|--------|---|
| 1330 | 189561 | <b>Encapsulating Biopolymer for Control of Clay and Fines Generation in Unconventional Reservoirs</b><br>C. Landis, IBC LLC; D.M. Maley, J. Nelson, STEP Energy Services; M.V. Blackmon, A.V. Madduri, C.J. Rodencal, IBC LLC   |
| 1400 | 189550 | <b>Deployment of Cesium Formate Drill-In and Open-Hole Completion Fluid in the Martin Linge High Pressure, High Permeability Gas Reservoir Enhances Total's Operational Efficiency and Radically Improves Well Performance</b><br>E. Jøntvedt, M. Fjeldheim, Total E&P Norge; J. Løchen, S.K. Howard, S.A. Leon, C.M. Busengdal, Cabot Specialty Fluids; K.R. Gyland, M-I Swaco, Schlumberger Norge |
| 1430 | 189536 | <b>Geochemical and Geomechanical Alterations Related to Rock-Fluid-Proppant Interactions in the Niobrara Formation</b><br>J.G. Iriarte, Well Data Labs, Colorado School of Mines; D. Katsuki, A.N. Tutuncu, Colorado School of Mines  |
| 1500 | 189569 | <b>Fines Migration during CO<sub>2</sub> Saturated Brine Flow in Carbonate Reservoirs with Some Migratory Clay Minerals - The Malaysian Formations</b><br>Y. Sazali, Petronas Research Sdn. Bhd.; S. Godeke, Universiti Brunei Darussalam; W.L. Sazali, J. M Ibrahim, Petronas Research Sdn. Bhd.; G.M. Graham, S.L. Kidd, Scaled Solutions Limited; H.A. Ohen, HPO Global Resources Ventures Inc.  |
| 1530 | 189518 | <b>Unveil the Unknown: Combining the Laboratory Study of Fracturing Fluids at High Pressure with a State-of-the-Art Hydraulic Fracturing Simulator</b><br>D. Vernigora, O.V. Olennikova, S. Parkhonyuk, A. Fedorov, L. Belyakova, I. Velikanov, A.S. Konchenko, Schlumberger  |
| 1600 | 189502 | <b>Rates of Permeability Restoration in Tight Gas-Bearing Sandstone Cores Following Long-Duration Exposure to Cesium Formate Fluids Under HPHT Conditions - A Detailed Laboratory Investigation</b><br>J.D. Downs, Formate Brine Ltd; S.K. Howard, Z.Q. Anderson, Cabot Specialty Fluids  |

## Technical Program

(as of 18 January 2018)

Thursday, 8 February 2018 | 1330–1630

### 14 New Developments and Field Experiences

#### Ashland

**Session Chairpersons:** David Wagner, Chevron ETC; Hugues M. Poitrenaud, Total

- |      |        |   |
|------|--------|---|
| 1330 | 189520 | <p><b>Restoring the Auca Field Potential through Formation Damage Removal</b></p> <p>B. Fun-Sang, J. Arevalo, P. Zamora, R. Grijalva, Y. Lopez, R. Fraga, Schlumberger; S. Pineiros, A. Mendoza, J. Carrión, Petroamazonas EP; T. Jimenez, EPN</p>                  |
| 1400 | 189516 | <p><b>Improving Well Productivity in North Kuwait Well by Optimizing Radial Drilling Procedures</b></p> <p>A.K. Al-Jasmi, A. Al-Sabee, A.D. Al-Awadh, A. Attia, A. Elsayed, Kuwait Oil Company; A. El-Mougy, Petrosas Oil Services and Radial Drilling Services</p> |
| 1430 | 189504 | <p><b>Well Assessment and Evaluation by Decomposition of Energy Dissipation</b></p> <p>L. Chu, P. Ye, Hess Corporation</p>  |
| 1500 | 189552 | <p><b>A Novel High Throughput Screening Approach for Flowback Aid Optimization</b></p> <p>C.W. Nelson, C.R. Hilliard, T.H. Kalantar, Y. Li, T. Kuo, The Dow Chemical Company; S.M. Makarychev-Mikhailov, P. Abivin, R. Prabhu, D. Khvostichenko, Schlumberger</p>   |
| 1530 | 189532 | <p><b>Well Productivity Impairment Due to Fines Migration</b></p> <p>Z. You, P.G. Bedrikovetsky, The University of Adelaide</p>   |
| 1600 | 189466 | <p><b>Dynamic Flow Modeling and Risk Mitigation Enables Optimized Perforation Design in Complex Well Completions</b></p> <p>R.P. Satti, D. Bale, J. Gilliat, P. Hillis, Baker Hughes, a GE company</p>  |



## Special Events

(as of 18 January 2018)

### Cajun Icebreaker

Tuesday, 7 February, 1830–2030

*Enjoy an evening with friends, hors d'oeuvres, and cocktails at the DoubleTree by Hilton Lafayette Salons D-E.*

**Sponsored by Halliburton.**

### Knowledge Sharing ePosters

Wednesday, 7 February, 1600–1830

Thursday, 8 February, 1030–1400

### Welcome Reception

Wednesday, 8 February, 1830–2030

*“Laissez les bons temps rouler!” Come pass a good time with an evening of food and fun at the River Oaks Event Center (offsite).*

### Social Dine and Dance

Thursday, February 08, 1830 -2200

*Randol's Restaurant and Cajun Dance Spot (offsite)*

### Open Forum–Mythbusters: Will Formation Damage Crush Your Completion? Proven or Busted!

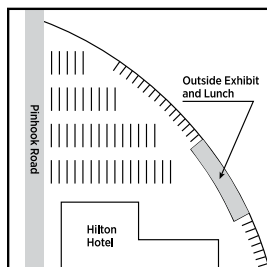
Friday, 9 February, 0830–1200

Moderators: **Niall Fleming**, Statoil ASA and **Allan Twynam**, Consultant

Discussion Leaders: **Ryan van Zanten**, Shell; **Chris Shuchart**, ExxonMobil;

**Wade Williams**, Chevron ETC

*The forum will cover many of the myths around formation damage through interactive and stimulating discussions and will attempt to conclude if they are proven or busted!*

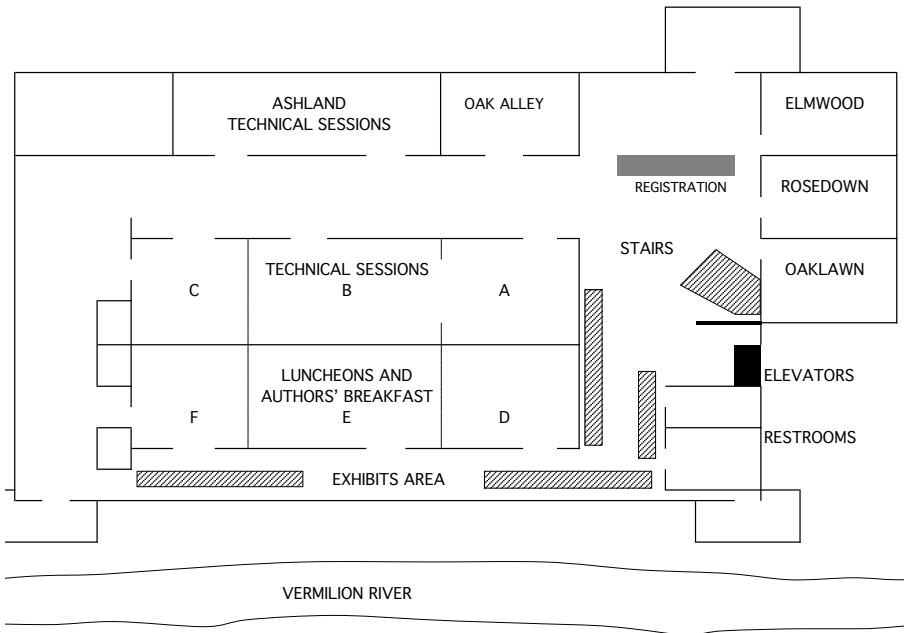


### On-Site Product Display and Luncheon

Friday, 9 February, 1130-1400



# Venue Floor Plan



## Exhibitors

(as of 18 January 2018)

The exhibition is located on the Mezzanine Level (Fourth floor) and open to conference registrants Wednesday and Thursday.

**Wednesday, 7 February: 0800–1700 | Thursday, 8 February: 0800–1700**

Cabot Corp.  
Constien and  
Associates  
Core Mineralogy

Corex UK Ltd  
Lloyd's Register  
Pegasus Vertex, Inc.

RGL Reservoir  
Management Inc.  
Scaled Solutions Ltd

A photograph of an offshore oil rig at sunset, with the sun low on the horizon and its light reflecting on the water. The rig is silhouetted against the bright sky.

# Efficient, uniform drilling damage removal

**A clean well is a productive well. In addition to maximizing the production rate and value of the well, the risk of gas or water coning, or failure of sand control completions is minimized.**

ORCA™ for WBM and ORCA™ for OBM treatment fluids are field-proven for treating water-based or oil-based drill-in fluid filter cake drilling damage in the reservoir.

ORCA™ treatment fluids are designed to achieve uniform longitudinal and radial treatment of the whole section, to efficiently remove filter cake damage in deviated and horizontal wells.

## **Get in touch**

Contact Ian McKay or Ralph Harris

**+44 (0) 1483 300107**

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