

# **Offshore Technology Conference 2013**

**(OTC 2013)**

**Houston, Texas, USA  
6-9 May 2013**

**Volume 1 of 4**

**ISBN: 978-1-62748-339-1**

**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© (2013) by the Offshore Technology Conference  
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the Offshore Technology Conference  
at the address below.

Offshore Technology Conference  
222 Palisades Creek Drive  
Richardson, Texas 75080-2040

Phone: (972) 952-9494  
Fax: (972) 952-9435

[service@otcnet.org](mailto:service@otcnet.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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

### Volume 1

|   |            |
|---|------------|
| <b>OTC 23902 Use of the ALARP Principle for Evaluating Environmental Risks and Impacts of Produced Water Discharged to Sea.....</b>                                   | <b>1</b>   |
| <i>Jens Rosendal Valeur, Johannes Petersen</i>  |            |
| <b>OTC 23903 Water Sustainability Risk Assessments: Lessons from Water Sensitive Industries .....</b>   | <b>14</b>  |
| <i>Alec Tang, Kristina Ringwood</i>   |            |
| <b>OTC 23904 SEMS II: Non-Prescriptive but Not Risk Based .....</b>   | <b>20</b>  |
| <i>Ian Sutton</i>   |            |
| <b>OTC 23906 Offshore Plug &amp; Abandonment: Challenges and Technical Solutions .....</b>  | <b>26</b>  |
| <i>Lucas Abshire, Stephan Hekelaar, Praful Desa</i>   |            |
| <b>OTC 23907 Use of Intervention and Well Abandonment Resources To Increase Safety, Efficiency and Cost Savings Through an Innovative Total Service Package .....</b> | <b>32</b>  |
| <i>Delaney Olstad</i>   |            |
| <b>OTC 23908 Successful High-Density Cement Plugs in a HP/HT Presalt Deepwater Well in Brazil's Santos Basin .....</b>  | <b>39</b>  |
| <i>L. Fagundes, R. Silvestri, D. Guerediaga, R. E. Borba, W. O. Moraes, M. Sobreira, F. Moretti, G. G. De Bruijn</i>  |            |
| <b>OTC 23909 Plug and Abandonment of Offshore Exploration Wells.....</b>  | <b>56</b>  |
| <i>Arild Saasen, Kjell Kåre Fjelde, Sanggi Rakasgati, Fatemeh Moeinikia</i>   |            |
| <b>OTC 23910 Deep Hole Subsea Excavation Utilizing the Most Current Technology .....</b>  | <b>64</b>  |
| <i>Chuck Webb</i>   |            |
| <b>OTC 23912 A Project Oriented and Technology Robust Dry Tree Semi Concept.....</b>  | <b>74</b>  |
| <i>J. Zeng, L. Wanvik, C. Kang</i>  |            |
| <b>OTC 23913 Case for Performance-Based Regulations .....</b>   | <b>85</b>  |
| <i>Joie L. Folkers</i>  |            |
| <b>OTC 23914 Contractors Under SEMS: Understanding Customer Requirements.....</b>   | <b>92</b>  |
| <i>Ken Wells</i>  |            |
| <b>OTC 23915 Techniques and Materials for North Sea Plug and Abandonment Operations.....</b>  | <b>102</b> |
| <i>Mahmoud Khalifeh, Arild Saasen, Helge Hodne, Torbjørn Vrålstad</i>   |            |
| <b>OTC 23916 Impact of Digital Slickline Capability on Slickline Conveyance Phases of Plug and Abandonment Operations.....</b>  | <b>109</b> |
| <i>Stuart Murchie, Matthew Billingham, Douglas Guillot, Chuck Espunge</i>   |            |
| <b>OTC 23917 Proven Alternative Hull Designs for Surface Drilling/Production Systems .....</b>  | <b>116</b> |
| <i>Bill Bennett</i>   |            |
| <b>OTC 23919 Deepwater Dry Tree Semi Technology Readiness – Perspectives of Operator and Classification Society .....</b>   | <b>125</b> |
| <i>Jenny Yan Lu, Vigleik L. Hansen, Martha Viteri, Ming-Yao Lee, Luc Huyse</i>  |            |
| <b>OTC 23921 Qualification of Flexible Fiber Reinforced Pipe Downline for Pipeline Commissioning Applications.....</b>  | <b>138</b> |
| <i>Liang Yu, Alok Dhagat, Yong Yu, Rohit Joshi</i>  |            |
| <b>OTC 23922 Offshore Major Accident Safety: Is SEMS Enough? .....</b>  | <b>154</b> |
| <i>Robin Pitblado, Peter Bjerager</i>   |            |
| <b>OTC 23923 Plug and Abandonment Applications for Inflatable Packers in the Gulf of Mexico .....</b>   | <b>162</b> |
| <i>Arthur Loginov</i>   |            |
| <b>OTC 23925 Composite Materials: An Enabling Material for Offshore Piping Systems .....</b>  | <b>167</b> |
| <i>Rod Martin</i>   |            |
| <b>OTC 23926 An Evaluation of Strength, Fatigue and Operational Performance of Dry Tree Semisubmersible Riser Tensioning Equipment.....</b>                           | <b>176</b> |
| <i>Philip Poll, Jun Zou, Shan Shi, Nishu Kurup</i>  |            |
| <b>OTC 23927 Fiber-optic Sensing is the Technology of Choice for Permanent Reservoir Monitoring Applications.....</b>   | <b>194</b> |
| <i>Frank Eisenhower, Phil Nash, Jan Langhammer, Ed Austin</i>   |            |
| <b>OTC 23928 Design Method Combing API and ASME Codes for Subsea Equipment for HPHT Conditions Up to 25,000 psi Working Pressure and Temperature to 400°F .....</b>   | <b>203</b> |
| <i>Parth D. Pathak, Christopher G. Kocurek, Samuel L. Taylor</i>  |            |
| <b>OTC 23929 Reducing Intervention in Subsea Wells with Fiber Optic Technology .....</b>  | <b>214</b> |
| <i>John Lovell</i>  |            |

|  |     |
|--|-----|
| <b>OTC 23930 Real Time Subsea Fiber Optic Monitoring .....</b>   | 222 |
| <i>Larry Forster, Dennis Dria</i>  |     |
| <b>OTC 23931 Qualification of Flexible Fiber-Reinforced Pipe for Ultra-deepwater Applications .....</b>  | 231 |
| <i>M. Kalman, L. Yu, A. Salimi, J. Liu</i>   |     |
| <b>OTC 23932 Fatigue Aspects of CRA Lined Pipe for HP/HT Flowlines .....</b>   | 238 |
| <i>T. Sriskandarajah, Venu Rao, Graeme Roberts</i>   |     |
| <b>OTC 23933 Thermo Chemical In-Situ Heat Generation Technique to Remove Organic Solid Deposition: Effective Tool for Production Enhancement and Flow Assurance.....</b> | 252 |
| <i>K. Singh, A. Saidu Mohamed, S. Sheykh Alian, M. Ismail, M. Anwar, W. Wan Mohamad, S. Abdul Ghani</i>  |     |
| <b>OTC 23934 Liwan Gas Project: First South China Sea Deepwater Completion Campaign.....</b>   | 266 |
| <i>David Triolo, Tracy Mosness, John Jennings, Jorge Rezende</i>   |     |
| <b>OTC 23935 Powering Subsea Processing Facilities of the Future .....</b>   | 282 |
| <i>T. Hazel, G. Peregrym, J. Legeay</i>  |     |
| <b>OTC 23936 Performance Characteristics of Surface Protection Coating Systems for Offshore Structures Under Arctic Conditions .....</b>                                 | 290 |
| <i>M. Irmer, N. Glück, A. Momber</i>   |     |
| <b>OTC 23937 Weight Added Wave (WAW) System In Production-A Brazil Offshore Application .....</b>  | 306 |
| <i>Yucheng Hou, John Zhang, Zhimin Tan, Tricia Hill, Terry Sheldrake</i>   |     |
| <b>OTC 23939 LNG Barges: The Offshore Solution for Export of US Pipeline Gas .....</b>   | 315 |
| <i>Javid H. Talib, Brian C. Price</i>  |     |
| <b>OTC 23940 Auditing Safety and Environmental Management Systems Programs .....</b>   | 331 |
| <i>Michael J. Hazzan</i>   |     |
| <b>OTC 23941 Rigless Repair of Subsea Tubing Leaks Using Pressure Activated Sealant.....</b>   | 340 |
| <i>D. Neil Cary, Michael J. Chambers, Kathryn J. Humphrey, Ross M. Huebel</i>  |     |
| <b>OTC 23942 Improving Cement Placement by Accounting for Lost Circulation and NAF Compressibility .....</b>   | 347 |
| <i>J. M. Shine, S. Chaudhary, R. S. Martin, A. J. Felio</i>  |     |
| <b>OTC 23943 Design Guideline Strategies for HPHT Equipment.....</b>   | 360 |
| <i>H. Brian Skeels, Kwok Lun Lee, Anand Venkatesh</i>  |     |
| <b>OTC 23944 The VOC Voyage: An Enigmatic Journey .....</b>  | 372 |
| <i>Mike O'Donoghue, Vijay Datta</i>  |     |
| <b>OTC 23945 Fatigue Enhancement of SCRs: Design Applying Weight Distribution and Optimized Fabrication .....</b>  | 388 |
| <i>Daniel Karunakaran, Jean-Luc Legras, Richard Jones</i>  |     |
| <b>OTC 23947 Photonic Sensing for the Energy Business: An Integrated Approach.....</b>   | 401 |
| <i>Mirvais Yousefi, Jose Pozo Torres, Hani Elshahawi</i>   |     |
| <b>OTC 23948 Full-Scale Testing of Distributed Temperature Sensing in Flexible Risers and Flowlines.....</b>   | 417 |
| <i>Nick Weppenaar, Thomas Iversen, Bo Andersen</i>   |     |
| <b>OTC 23949 In-Well Distributed Fiber Optic Solutions for Reservoir Surveillance.....</b>   | 425 |
| <i>Juun Van Der Horst, Jorge Lopez, Wilfred Berlang, Hans Potters</i>  |     |
| <b>OTC 23950 AUV3Dm: Detailed Characterization of Shallow Soil Strata and Geohazards Using AUV Subbottom Profiler 3-D Micro Volumes .....</b>                            | 431 |
| <i>Kerry J. Campbell, Steve Smith, Chad Pastor</i>   |     |
| <b>OTC 23951 Deepwater Reservoir Compartmentalization: Causes, Impacts on Production, and Methods of Identification .....</b>  | 446 |
| <i>Jiajie Chen</i>   |     |
| <b>OTC 23952 Geological, Geophysical and Petrophysical Characterization of Hydrocarbon Reservoirs in South China Sea Deep Water Block 29/26.....</b>                     | 458 |
| <i>Greg Yanpeng Mi</i>   |     |
| <b>OTC 23953 Subsea Mining Field Development Concept Using a Subsea Crushing and Feeding Unit .....</b>  | 469 |
| <i>Thomas Parenteau, Philippe Espinasse, Ali Benbia, Bertrand Ngim</i>   |     |
| <b>OTC 23954 A True Shale Compaction Model with Pore Pressure Prediction .....</b>   | 477 |
| <i>James T. Krushin</i>  |     |
| <b>OTC 23955 Innovative Geophysical Logging Techniques Used for the Definition and Characterization of Mass Transport Deposits .....</b>                                 | 489 |
| <i>Adrian Digby, Stephen Thomas</i>  |     |
| <b>OTC 23956 Influence of the Hyperbaric Effect on Apparent Material Strength of Fully Saturated Porous Rock for Low Strain Rates.....</b>                               | 499 |
| <i>Roel J. Kuiper, Jan C. L. Frumau, Sape A. Miedema</i>   |     |
| <b>OTC 23957 Comparison of Simulated and Full-scale Disconnection of Turret Buoy.....</b>  | 512 |
| <i>A. Bech, G. O. Hovde, J. Daniel, T. Vinje</i>   |     |

|  |     |
|--|-----|
| <b>OTC 23958 A Robust and Flexible Dry Tree Semisubmersible Drilling and Production Platform .....</b>   | 524 |
| <i>Roberto Noce, Ida Husem</i>   |     |
| <b>OTC 23959 Study and Application of Production Relif and Blowdown on the Large-scale Offshore Oil &amp; Gas Fields.....</b>  | 533 |
| <i>Zhi Xia, Xiaohong Zhou, Zhijun Li, Yun Hao, Rongqi Chen</i>   |     |
| <b>OTC 23960 Husky Liwan Deepwater Subsea Control System.....</b>  | 540 |
| <i>Mike Bavidge</i>  |     |
| <b>OTC 23961 Importance of Pressure Management in CO<sub>2</sub> Storage .....</b>   | 564 |
| <i>Christian Hermanrud, Ola Eiken, Olav R. Hansen, Hege Marit Nordgård Bolås, Trine Helle Simmenes, Gunn Mari Grimsmo Teige, Hilde Hansen, Stian Johansen</i>  |     |
| <b>OTC 23962 Alternative Offshore Foundation Installation Methods .....</b>  | 574 |
| <i>Giovanni Spagnoli, Leonhard Weixler</i>   |     |
| <b>OTC 23963 Long Stroke Ram-Style Tensioner Technology .....</b>  | 582 |
| <i>John Koos</i>   |     |
| <b>OTC 23964 The Challenges and Solutions for Deep Water Drilling in the South China Sea.....</b>  | 591 |
| <i>Liangbin Xu, Shiquan Jiang, Jianliang Zhou</i>  |     |
| <b>OTC 23965 Hydrate Prevention in Subsea Oil Production Dead-Legs.....</b>  | 600 |
| <i>M. Haghighi, K. A. Hawboldt, J. Cai, M. A. Abdi, C. Sundgaard</i>   |     |
| <b>OTC 23966 Toward the Next Fiber Optic Revolution and Decision Making in the Oil and Gas Industry .....</b>  | 627 |
| <i>L. K. Cheng, M. Boering, R. Braal</i>   |     |
| <b>OTC 23967 Finneidfjord, a Field Laboratory for Integrated Submarine Slope Stability Assessments and Characterization of Landslide-Prone Sediments: A Review.....</b>  | 635 |
| <i>Maarten Vanneste, Oddvar Longva, Jean-Sebastien L'Heureux, Mark E. Vardy, Eugene Morgan, Carl Fredrik Forsberg, Tore J. Kvalstad, James M. Strout, Jo Brendryen, Haflidi Haflidason, Isabelle Lecomte, Alois Steiner, Achim Kopf, Tobias Mörz, Stefan Kreiter</i> |     |
| <b>OTC 23968 Large Diameter Riser Laboratory Gas-Lift Tests .....</b>  | 652 |
| <i>G. Zabaras, R. Menon, W. Schoppa, M. Wicks III</i>  |     |
| <b>OTC 23969 A Simplified Approach to Modeling Long-Term Monopile Serviceability with Finite Element Analysis.....</b>   | 673 |
| <i>Daniel Ebin, Lewis Edgers, Aaron S. Bradshaw</i>  |     |
| <b>OTC 23970 Design Challenges of the World's Largest Slug Catcher .....</b>   | 683 |
| <i>Lowell C. Thronson, Angus Holden</i>  |     |
| <b>OTC 23971 General Design of Super Platform's Installation in South China Sea.....</b>   | 692 |
| <i>Da Li, Jin-Lin Hou, Xu Jia, Mo Fan, Cong Yi, Xue-Ping Bai</i>   |     |
| <b>OTC 23972 Tethered Catenary Riser: A Novel Concept for Ultradeep Water.....</b>   | 703 |
| <i>Jean-Luc Legras</i>   |     |
| <b>OTC 23973 Control of the Integrity of Swaged Weld on Insulated Pipe-in-Pipe.....</b>  | 711 |
| <i>Jue Wang, Cesar Atin, Jean Luc Legras, Xavier Deleye, Ajit Mallik</i>   |     |
| <b>OTC 23974 Natural Gas Dehydration Using Supersonic Separators with a Novel Design .....</b>   | 724 |
| <i>M. Haghighi, K. A. Hawboldt, M. A. Abdi</i>   |     |
| <b>OTC 23975 Modeling the Touchdown Zone Trench and Its Impact on SCR Fatigue Life .....</b>   | 736 |
| <i>Mark Randolph, Shankar Bhat, Sunny Jain, Basim Mekha</i>  |     |
| <b>OTC 23976 A Risk Based Approach to Managing the Integrity of an Ageing FPSO Hull.....</b>   | 752 |
| <i>Scott Hagood, Calum Maclean</i>   |     |
| <b>OTC 23977 Development and Qualification of End Fittings for Composite Riser Pipe .....</b>  | 760 |
| <i>Stephen Hatton, Luke Rumsey, Praveen Biragoni, Damon Roberts</i>  |     |
| <b>OTC 23978 Analysis of Amplitude, Reflection Strength, and Acoustic Impedance of Auv Sub-Bottom Profiles with Application to Deepwater Near-Surface Sediments .....</b>  | 778 |
| <i>Zijian Zhang, Adrian Digby</i>  |     |
| <b>OTC 23980 Using Qualitative Slope Hazard Maps and Quantitative Probabilistic Slope Stability Models to Constrain Least-Cost Pipeline Route Optimization .....</b>   | 789 |
| <i>William C. Haneberg, Brittany Bruce, Marina C. Drazba</i>   |     |
| <b>OTC 23981 Evaluation of Wellhead Fatigue Using In-Service Structural Monitoring Data .....</b>  | 800 |
| <i>Phil Ward, Alex Rimmer, Hugh Howells</i>  |     |
| <b>OTC 23982 Minimising the Risk of Coating Failures.....</b>  | 813 |
| <i>M. Raouf Kattan, Lynda A. Speed, Darren Broderick</i>   |     |
| <b>OTC 23983 Simplified Approach for Estimating Pressure and Temperature Profiles for Gas Wells: Verification with Literature Case.....</b>  | 823 |
| <i>Rodrigo A. Ruysschaert, Aly A. Hamouda</i>  |     |

|  |     |
|--|-----|
| <b>OTC 23985 Combining Contemporary and Tested Technologies to Achieve Successful Deepwater Extended Reach Completions .....</b> | 842 |
| <i>Ray Brister, Andrew McCarty, Michael Stewart, Mike Broderick</i>  |     |
| <b>OTC 23986 COBRA: An Uncoupled Riser System for Ultra deep Water in Harsh Environments .....</b>                               | 861 |
| <i>Daniel Karunakaran, Rolf Baarholm</i>   |     |

## Volume 2

|  |      |
|--|------|
| <b>OTC 23987 New Technique: Multistage Hydrafrac Fracturing Technology for Effective Stimulation on the First U-shape Well in Chinese Coal Bed Methane and Case Study.....</b> | 873  |
| <i>Hai Qu, Kun Cheng, Ying Liu, Metin Gokdemir, Zhong Cheng</i>  |      |
| <b>OTC 23988 Evaluation of the Hydrolysis Behavior of PA in High-Pressure CO<sub>2</sub> Environments.....</b>   | 881  |
| <i>Fabio Pires, Judimara Clevelario, Terry Sheldrake, Stefan Buchner</i>   |      |
| <b>OTC 23989 Contractors: A Help or Hindrance to Your SEMS Program .....</b>   | 889  |
| <i>Pisces Carmichael</i>   |      |
| <b>OTC 23991 Comparison of Seafloor and Shallow Stratigraphic Conditions Mapped From 3D Seismic and AUV Data at Two Deepwater Areas, Keathley Canyon, Gulf of Mexico.....</b>  | 899  |
| <i>James A. Thomson, Craig A. Scherschel</i>   |      |
| <b>OTC 23992 Turbidity Current Measurements in the Congo Canyon.....</b>   | 913  |
| <i>Cortis Cooper, Jon Wood, Olivier Andrieux</i>   |      |
| <b>OTC 23993 Sediment Density Flow Impact Assessment and Mitigation Studies for Deepwater Developments: A Challenge on Multiple Scales .....</b>                               | 925  |
| <i>M. Clare, S. Thomas, B. Spinewine</i>   |      |
| <b>OTC 23995 Analyses of SCR with Pull-Tube Using ABAQUS and Flexcom .....</b>   | 941  |
| <i>Hugh Liu, Kevin Wang, Flora Yiu</i>   |      |
| <b>OTC 23996 Effects of Stress History on Failure Behavior of Shallow, Marine Muds from the Northern Gulf of Mexico.....</b>   | 952  |
| <i>X. Zhao, B. Dugan</i>   |      |
| <b>OTC 23997 Case Study: Surface-controlled Formation Isolation Valves and Their Application as a Barrier for Temporary Well Suspension .....</b>                              | 961  |
| <i>Oguzhan Guven, Joao Mendonca, Dan Thai</i>  |      |
| <b>OTC 24000 Determining the Cause of Osmotic Activity in Paint Films and Its Roll in Substrate Corrosion.....</b>   | 968  |
| <i>George D. Mills</i>   |      |
| <b>OTC 24001 New Marine Towed-streamer Acquisition Technology.....</b>   | 974  |
| <i>Ali Özbek, Massimiliano Vassallo, Kurt Eggenberger, Dirk-Jan Van Manen, Kemal Özdemir, Smaïne Zeroug, Johan Robertsson</i>  |      |
| <b>OTC 24002 Innovative Geosteering Technology Utilized in Drilling Smart Multi-lateral Wells, Kuwait .....</b>  | 985  |
| <i>T. El Gezeery, A. Aziz Ismael, K. Al-Anezi, G. S. Padhy, Fawaz Al Saqrani, A. Abdul-Latif, J. Silambuchelvan, J. Estarabadi, G. Ferroni</i>                                 |      |
| <b>OTC 24003 Microparticulate Used to Complete and Protect Well Integrity.....</b>   | 1003 |
| <i>James R. Benkley, Chad Brenneis</i>   |      |
| <b>OTC 24004 SupraSalt 3D Basin Modeling and Shallow Borehole Results: Tubular Bells, Kodiak Development Project in GoM Mississippi Canyon.....</b>                            | 1014 |
| <i>David F. Greeley, Paul Mitchell, Philippe Jeanjean, Craig Scherschel, Jean-Sebastien Hall</i>   |      |
| <b>OTC 24006 Impacts of Technology on Communicating Weather Windows for Offshore Construction, Drilling and Intervention Operations .....</b>                                  | 1044 |
| <i>Jill F. Hasling</i>   |      |
| <b>OTC 24007 Multiphase CFD Cool-Down Behaviors of an EVDT and Manifold Systems .....</b>  | 1060 |
| <i>A. Rivas-Cardona, C. Silva, E. Marotta, J. Fayemi, F. Fleyfel, O. Illesanni, G. Okoh</i>  |      |
| <b>OTC 24008 Buoyant Tower: Concept Selection - An Economic and Technical Evaluation.....</b>  | 1077 |
| <i>Richard Spies, Cesar Ortega, Durkin Ledgard</i>   |      |
| <b>OTC 24009 Execution of New Drillship Project – Perspectives from Owner, Class, Builder and Designer .....</b>   | 1083 |
| <i>Xiaozhi Wang, Suck-Hwan Lee, Dave Webb, Harry Ren, Y. C. Lee, S. M. Hendriks</i>  |      |
| <b>OTC 24010 Liwan 3-1: How Deep Water Sediments from South China Sea Compare with Gulf of Guinea Sediments .....</b>  | 1101 |
| <i>E. Palix, N. Chan, Z. Yangrui, W. Haijing</i>   |      |
| <b>OTC 24011 A Reliability-Based Interpretation Framework for Pile-Supported Offshore Wind Turbines .....</b>  | 1109 |
| <i>Bruno Stuys, Robert Gilbert, David Cathie</i>   |      |

|  |      |
|--|------|
| <b>OTC 24012 Service Life and the Definition of Failure of Coatings and Cathodic Protection .....</b>  | 1119 |
| <i>Brian Gibbs, Thomas Graf</i>  |      |
| <b>OTC 24013 Buoyant Tower: Design Innovation - Applying Deepwater Technology to Shallow Water Challenges .....</b>  | 1127 |
| <i>Lyle Finn, Russell Hegler</i>   |      |
| <b>OTC 24014 Buoyant Tower: Installation Challenges and Lessons Learned .....</b>  | 1132 |
| <i>Larry McClure, Sanjai Jatar, Guillermo Florez</i>   |      |
| <b>OTC 24015 Empreinte: New Horizons for Pipelines Integrity Assessment .....</b>  | 1143 |
| <i>V. Gaffard, D. Popineau, P. Wiet, M. Bernard, J. Fontanabona</i>  |      |
| <b>OTC 24016 Buoyant Tower: Drilling and Production.....</b>   | 1161 |
| <i>Wayne Mueller, Hugo Blanco</i>  |      |
| <b>OTC 24017 Buoyant Tower: Improvement Suggested by Project Experience.....</b>   | 1176 |
| <i>Chris Harding, Lyle Finn</i>  |      |
| <b>OTC 24018 Improving Durability of ROV Tether Cables by UHMWPE Fiber .....</b>   | 1186 |
| <i>Marc Eijssen, Andreas Gabrielsen</i>  |      |
| <b>OTC 24019 Qualification of New Polyamide for Flexible Flowlines and Risers at Elevated Pressure and Temperature .....</b>   | 1198 |
| <i>Camille Chollet, Anh-Tuan Do</i>  |      |
| <b>OTC 24020 First Predictions and Practical Techniques for HTHP Drilling, 1950-1980 .....</b>   | 1208 |
| <i>Bill Rehm</i>   |      |
| <b>OTC 24021 Wellbore Thermal Performance and Its Impact on Flow Assurance Design of a Subsea Production System.....</b>   | 1218 |
| <i>Leon Liu, Veerendhar Ponagandla, Scott Buffon</i>   |      |
| <b>OTC 24022 Buoyant Tower: Construction Challenges and Lessons Learned.....</b>   | 1227 |
| <i>Clyde Crochet, Mark Slider, Beau Toll, John Gommel</i>  |      |
| <b>OTC 24024 Extreme and Fatigue Profiles for Kuroshio Current Using Inverse Reliability and Proper Orthogonal Decomposition Techniques .....</b>  | 1242 |
| <i>Puneet Agarwal, Scot McNeill, Tomokazu Saruhashi, Ikuo Sawada, Masanori Kyo, Eigo Miyazaki, Yasuyuki Yamazaki, Kan Aoike</i>  |      |
| <b>OTC 24025 A Historical Review on Integrity Issues of Permanent Mooring Systems .....</b>  | 1252 |
| <i>Kai-Tung Ma, Arun Duggal, Philip Smedley, Didier L'Hostis, Hongbo Shu</i>   |      |
| <b>OTC 24026 Liuhua 11-1 FPS Dry-dock Upgrade and Life Extension - Project Scope and Execution.....</b>  | 1266 |
| <i>W. J. Zhong, L. Yang, J. Y. Mao, Y. Y. Liu, Q. Gao</i>  |      |
| <b>OTC 24027 Summarizing the Deepwater Horizon / Macondo Reports .....</b>   | 1275 |
| <i>Ian Sutton</i>  |      |
| <b>OTC 24028 Thin-wall Approximation: Implications for the Expansion and Global Buckling of Thick-walled, High-pressure Flowlines.....</b>   | 1285 |
| <i>D. Kurusamy</i>   |      |
| <b>OTC 24029 ColdShield Qualification: Waterproof Bonded Composite Reinforcements for FPSO HULL Repair - Seal Selection.....</b>   | 1306 |
| <i>Jean-Philippe Court, René-Louis Geffroy, Alexandre Lewandowski, Jean-Paul Lamige, François Grosjean, Patrick Heuillet</i>   |      |
| <b>OTC 24030 Seismic Normal Compaction Trends and Lithology.....</b>   | 1312 |
| <i>Daniel Ebrom</i>  |      |
| <b>OTC 24031 Oil Drag Reducer Performance in Horizontal Two-Phase Annular Regime .....</b>   | 1316 |
| <i>Aly A. Hamouda</i>  |      |
| <b>OTC 24033 In-Situ Re-qualification of Pressure Tubes: A New and Efficient Methodology.....</b>  | 1333 |
| <i>L. Lawrence, A. Harding, M. Dickens, R. S. Irani</i>  |      |
| <b>OTC 24034 Novel Energy Efficiency Technologies for Reduction of Offshore CO<sub>2</sub> Emissions .....</b>   | 1339 |
| <i>Marit Jagtoyen Mazzetti, Petter Nekså, Harald Taxt Walnum, Anne Karin T. Hemmingsen</i>   |      |
| <b>OTC 24035 Marine Current Energy Extraction Using Torsional Galloping Based Turbine .....</b>  | 1351 |
| <i>Mohammadmehdī Armandei, Antonio Carlos Fernandes</i>  |      |
| <b>OTC 24036 Carbon Fiber Armors Applied to Presalt Flexible Pipe Developments .....</b>   | 1360 |
| <i>Anh Tuan Do, Gary Bernard, Didier Hanonge</i>   |      |
| <b>OTC 24037 Analysis of Seep Architecture: A Qualitative Evaluation of Seep Near-Surface Geomorphology Utilizing AUV3Dm High-Resolution Geophysical Data in the Mississippi Canyon Area, Gulf of Mexico .....</b> | 1373 |
| <i>Bruce M. Samuel, Jim Gharib, Jason L. Smith</i>   |      |
| <b>OTC 24038 Exploration and Resource Definition of Offshore Titano-Magnetite Ironsands, on the West Coast of New Zealand .....</b>  | 1382 |
| <i>Matthew Brown</i>   |      |

|  |      |
|--|------|
| <b>OTC 24041 Liuhua 11-1 FPS Dry-dock Upgrade and Life Extension - Mooring System Evaluation and Optimization .....</b>  | 1392 |
| <i>H. Yang, W. J. Zhong, Y. Luo, H. J. Yin, B. Liu</i>   |      |
| <b>OTC 24042 Field Development Overview of Liuhua 11-1 and Liuhua 4-1 Oil Field .....</b>  | 1401 |
| <i>Zuan Yue, Yiyong Liu, Jiayou Mao, Jianjun Yang</i>  |      |
| <b>OTC 24043 Liuhua 11-1 FPS Dry-dock Upgrade and Life Extension - Motion Analysis and Weather Window Selection for Towing.....</b>  | 1410 |
| <i>L. Yang, H. Yang, S. G. Huang, Y. Luo, G. L. Zhang</i>  |      |
| <b>OTC 24044 Liuhua 11-1 FPS Dry-dock Upgrade and Life Extension - Integrity Evaluation and Strengthening Solutions .....</b>  | 1416 |
| <i>Y. L. Cai, B. Liu, L. Yang, J. Wang, Y. G. Zhang</i>  |      |
| <b>OTC 24045 Biofouling in Marine and Offshore.....</b>  | 1427 |
| <i>Johnny Eliasson, Chao Wei</i>   |      |
| <b>OTC 24046 A Mechanistic Slug Liquid Holdup Model for Wide Ranges of Liquid Viscosity and Pipe Inclination Angle.....</b>  | 1436 |
| <i>S. Wang, H.-Q. Zhang, C. Sarica, E. Pereyra</i>   |      |
| <b>OTC 24047 Effects of Fiber Rope – Seabed Contact on Subsequent Rope Integrity .....</b>   | 1447 |
| <i>Ray R. Ayers, Cesar J. Del Vecchio, Paul V. Devlin, William Head</i>  |      |
| <b>OTC 24048 Effect of Medium Oil Viscosity on Two-Phase Oil-Gas Flow Behavior in Horizontal Pipes .....</b>   | 1458 |
| <i>R. Brito, E. Pereyra, C. Sarica</i>   |      |
| <b>OTC 24049 Strategy Concerning Composite Flowlines, Risers and Pipework in Offshore Applications .....</b>   | 1476 |
| <i>Luiz C. M. Meniconi, Walter Carrara Loureiro Jr., Fernando Costa Dos Santos Jr., Carlos Cunha Dias Henriques</i>  |      |
| <b>OTC 24050 Drill Cutting Remediation with ROV Technology .....</b>   | 1484 |
| <i>Hans Kros</i>   |      |
| <b>OTC 24051 Effect of Boundary Conditions, Flow Rate, Slug Length, and Slug Frequency on Slug Flow Induced Vibration in a Pipeline Span.....</b>                            | 1500 |
| <i>D. Jia</i>  |      |
| <b>OTC 24052 Subsea Pipeline Repair by Composite System: One Step Deeper .....</b>   | 1514 |
| <i>S. Boulet D'Auria, H. Slimani, P. Wiet, V. Gaffard, D. Popineau</i>   |      |
| <b>OTC 24053 High Strength Carbon Steel and CRA Lined Pipe for Reel-Lay Installation.....</b>  | 1527 |
| <i>Richard Jones, Nuno Pepe, Graeme Barritte, Gregory Toguyeni, John Mair, Tanja Schmidt, Joachim Banse</i>  |      |
| <b>OTC 24054 Rigless Intervention: Barriers and Misperceptions About Using Lightweight Intervention Solutions To Increase Oil Recovery from Deepwater, Subsea Wells.....</b> | 1538 |
| <i>Bevan Morrison, Ole Eddie Karlsen</i>   |      |
| <b>OTC 24055 Study on Development Scenarios of Gas Fields around the Continental Slope of South China Sea.....</b>   | 1548 |
| <i>Wei Feng, Bin Xie, Xichong Yu, Enyong Zhang, Shisheng Wang, Xia Huang, Chunsheng Wang, Jing Cao, Xinzhong Li, Xiaojian Jin, Jianmin Li</i>                                |      |
| <b>OTC 24057 Design and Verification of High Load Bearing Interfaces .....</b>   | 1553 |
| <i>Nigel McKie, Keegan Tooley, Daniel T. Peters</i>  |      |
| <b>OTC 24059 HERO: A New Tool for Hull Inspection.....</b>   | 1566 |
| <i>Romain Becart</i>   |      |
| <b>OTC 24060 Flow Assurance Modeling using an Electrical Trace Heated Pipe-In-Pipe: From Qualification to Offshore Testing .....</b>   | 1574 |
| <i>Marie-Kathleen Decrin, Frode Nebell, Hervé De Naurois, Thomas Parenteau</i>   |      |
| <b>OTC 24061 A Comparison of Dynamic and Static Pile Test Results.....</b>   | 1586 |
| <i>Robert F. Stevens</i>   |      |
| <b>OTC 24062 Better Well Control Through Safe Drilling Margin Identification, Influx Analysis and Direct Measurement Method for Deepwater.....</b>                           | 1600 |
| <i>Daan Veeningen</i>  |      |
| <b>OTC 24063 Reliability of API, NGI, ICP and Fugro Axial Pile Capacity Calculation Methods .....</b>  | 1610 |
| <i>S. Lacasse, F. Nadim, K. H. Andersen, Siren Knudsen, Gülin Yetginer, Tom R. Guttormsen, Asle Eide</i>   |      |
| <b>OTC 24065 Rigless Intervention Case Studies, UK and Africa .....</b>  | 1632 |
| <i>Oliver Willis, Phillip Bosworth</i>   |      |
| <b>OTC 24066 Model Uncertainty in Axial Pile Capacity Design Methods.....</b>  | 1641 |
| <i>S. Lacasse, F. Nadim, T. Langford, S. Knudsen, G. Yetginer, T. R. Guttormsen, A. Eide</i>   |      |
| <b>OTC 24067 Development of Design Criteria for Floating Offshore Wind Turbines .....</b>  | 1651 |
| <i>Qing Yu, Xiaohong Chen</i>  |      |
| <b>OTC 24068 Predictive Equations of Shear Wave Velocity for Bay of Campeche Clay .....</b>  | 1662 |
| <i>Victor M. Taboada, Diego Cruz, Procoro Barrera, Esteban Espinosa, Daulet Carrasco, Kuat C. Gan</i>  |      |
| <b>OTC 24069 Fatigue Testing of Shrink-Fit Couplings for Joining High Strength Steel Riser Pipe .....</b>  | 1675 |
| <i>J. Shield, J. Wightman, J. Pappas, J. Bowma</i>   |      |

|  |      |
|--|------|
| <b>OTC 24072 Wellbore Stability and Integrity Contributors Revealed by Thermal Modeling and Fluid Analysis.....</b>                | 1689 |
| <i>Robert F. Mitchell, Ronald Sweatman</i>   |      |
| <b>OTC 24073 Response and Simulation of the Pipe-in-Pipe System in Free Spans .....</b>  | 1699 |
| <i>Theofilos Giagouris, Xinhai Qi, Andy Tang, Jianxia Zhong</i>  |      |
| <b>OTC 24075 Recent Advances in Pore Pressure Prediction In Complex Geologic Environments.....</b>                                 | 1705 |
| <i>Alan R. Huffman, Jeffrey Meyer, Robert Gruenwald, Javier Buitrago, Jaime Suarez, Carlos Diaz, Jose Maria Munoz, Jack Dessay</i> |      |
| <b>OTC 24076 Capping Stack Demonstration Validates Containment Capabilities in the U.S. Gulf of Mexico.....</b>                    | 1713 |
| <i>Marty Massey</i>  |      |
| <b>OTC 24077 Pipe-in-Pipe Swaged Field Joint for Reel Lay.....</b>   | 1717 |
| <i>Venu Rao, John Mair, T. Sriskandarajah, Richard Jones, Paul Booth, Christian Geertsen</i>                                       |      |
| <b>OTC 24078 Smart Fields Management in Deepwater Field: Experience &amp; Perspectives .....</b>                                   | 1730 |
| <i>Emmanuel Udoafia, Abdul Samad Chaker, Ogbole Oghedegbe</i>  |      |
| <b>OTC 24080 Thunder Hawk Mooring Rope Particle Ingress, Break, and Fatigue Testing.....</b>                                       | 1742 |
| <i>J. D. Otten, S. Leite</i>   |      |

### Volume 3

|   |      |
|---|------|
| <b>OTC 24081 Concept Alternatives and Feasibility Analyses of Deepwater Dual Gradient Drilling Riser Systems .....</b>  | 1756 |
| <i>Atul Ganpatye, Kenneth Bhalla, David P. Huey, Kai-Tung Ma, Kenneth L. Smith</i>  |      |
| <b>OTC 24082 New Developments in the Simulation of Slurry Behaviour in Spooled Hoses for Offshore Mining Applications .....</b>   | 1769 |
| <i>J. Heeren, J. Van De Bosch, C. Van Rhee, E. Munts, R. Lotman</i>   |      |
| <b>OTC 24083 Early Recognition of Seabed and Sub-Seabed Natural Hydrocarbon Seeps in Deep Offshore Angola.....</b>  | 1781 |
| <i>Stephan Unterseh</i>   |      |
| <b>OTC 24084 Design and Assessment of Offshore Structures for Extreme and Abnormal Accidental Loading.....</b>  | 1788 |
| <i>G. A. Ghoneim, Y. Ayhan, A. Sari</i>   |      |
| <b>OTC 24085 An Expert Panel Review of Geotechnical Site Investigation Regulations and Current Industry State of Practice.....</b>  | 1797 |
| <i>Alan G Young, James D. Murff, Earl Doyle, Bob Gilbert, Rathindra Dutt, Chuck Aubeny</i>  |      |
| <b>OTC 24086 Effects of Operating Parameters on Flow Characteristics of Natural Gas in Supersonic Separators .....</b>  | 1814 |
| <i>Chuang Wen, Xuewen Cao, Yan Yang, Yuqing Feng, Peter Witt</i>  |      |
| <b>OTC 24088 Evaluation of the p-y Method in the Design of Monopiles for Offshore Wind Turbines .....</b>   | 1824 |
| <i>A. E. Haiderali, G. S. P. Madabhushi</i>   |      |
| <b>OTC 24089 Including Enabling Technologies in the Wellbore Construction Basis of Design: Smart Strategy to Benefit from Casing while Drilling, Open-hole Expandable Liners, and Liner Drilling.....</b>   | 1845 |
| <i>Moji Karimi, Asim Siddiqui</i>   |      |
| <b>OTC 24090 Downhole Scale Management on the Alba Field: A Case History.....</b>   | 1855 |
| <i>R. Farrell, A. Leontieff, A. Strachan, J. Muir, R. E. Stanley, H. Dahle Smith</i>  |      |
| <b>OTC 24091 Development Options for North American LNG Export: The Merits of Inshore Deployed FLNG for Liquefaction of Onshore Shale Gas and Examination of Principal Technology Drivers.....</b>          | 1870 |
| <i>Joe Vergheze, Nancy Ballout</i>  |      |
| <b>OTC 24092 A Mature Southern North Sea Asset Considers Conversion to Wet Gas Operation Which Requires the Development of Compatible and Novel Chemistries for Flow-Assurance and Asset Integrity.....</b> | 1881 |
| <i>J. F. L. Garming, J. Anthony, G. J. De Vries, N. L. Morales, P. A. Webber, R. A. Trompert</i>  |      |
| <b>OTC 24094 Liuhua 11-1 FPS Dry-dock Upgrade and Life Extension - Fatigue Assessment Challenges and Solutions.....</b>   | 1889 |
| <i>B. Liu, J. Wang, W. J. Zhong, H. J. Yin, Y. L. Cai</i>   |      |
| <b>OTC 24095 Thermoplastic Composite Riser Guidance Note .....</b>  | 1899 |
| <i>Andreas T. Echtermeyer, Bart Steuten</i>   |      |
| <b>OTC 24096 Optimization of Pour Point Depressant Treating Rates for Crude and Condensate Blends Using an Onsite Densitometer.....</b>   | 1909 |
| <i>Yaqin Wu, Sally A. Thomas, Andika P. Sigit, William H. Thomason</i>  |      |

|   |      |
|---|------|
| <b>OTC 24097 Closed-Loop Drilling, Cementing, and Frequent Dynamic Formation Integrity Testing – “State of the Art” for Deepwater Drilling Programs .....</b> | 1919 |
| <i>Don Hannegan</i>   |      |
| <b>OTC 24099 Multiphase Flow Modeling of Gas-Water-Hydrate Systems .....</b>  | 1933 |
| <i>I. Rao, L. E. Zerpa, E. D. Sloan, C. A. Koh, A. K. Sum, T. J. Danielson</i>  |      |
| <b>OTC 24100 The New Risk Perspective in Corrosion Management .....</b>   | 1943 |
| <i>G. Koch, G. Ripley, D. McKay</i>   |      |
| <b>OTC 24102 Quantification and Reduction of Uncertainties for Solids Transport Velocity Predictions at Low Concentrations in Near-Horizontal Flow .....</b>  | 1953 |
| <i>F. B. Soeypyani, S. Cremaschi, C. Sarica, H. J. Subramani, G. E. Kouba</i>   |      |
| <b>OTC 24105 Engineering Design Challenges and Opportunities beyond Waterflooding in Offshore Reservoirs .....</b>  | 1962 |
| <i>Vladimir Alvarado, Eduardo Manrique</i>  |      |
| <b>OTC 24107 High-Resolution 3D Laser Imaging for Inspection, Maintenance, Repair, and Operations .....</b>   | 1973 |
| <i>C. Embry, M. Hardy, B. Nickerson, D. Richardson, J. Pappas</i>   |      |
| <b>OTC 24108 Subsurface Appraisal and Field Development Planning of the Gas Condensate Field GVLA .....</b>   | 1992 |
| <i>S. Balasubramanian, B. Wang, Y. Li, E. P. Ginger, B. Liang, D. M. McKay, J. J. Brinkman, K. A. Ogden, D. D. Kennedy, W. T. Wilcox, A. Yang</i>             |      |
| <b>OTC 24110 Composite Choke and Kill Lines: Qualification and Pilot Installation .....</b>   | 2014 |
| <i>Bjørn Melve, Kristin Nedrelid, Kjetil Skaugset, Per Kristian Grønlund</i>  |      |
| <b>OTC 24111 Water Injection in Deepwater, Over-Pressured Turbidites in the Gulf of Mexico: Past, Present, and Future .....</b>                               | 2025 |
| <i>X. Li, K. K. Beadall, S. Duan, J. R. Lach</i>  |      |
| <b>OTC 24112 First Floating, Production Storage and Offloading vessel in the U.S. Gulf of Mexico .....</b>  | 2038 |
| <i>Jeremiah Daniel, Carlos F. Mastrangelo, Partha Ganguly</i>   |      |
| <b>OTC 24113 GTL FPSO: An Alternative Solution to Offshore Stranded Gas .....</b>   | 2058 |
| <i>Hyun-Jin Kim, Dong-Kyu Choi, Sung-Il Ahn, Hyuk Kwon, Hye-Won Lim, Douglas Denholm, Taeshin Park, Lifeng Zhang</i>  |      |
| <b>OTC 24114 Advances in Multiphase Flow CFD Erosion Analysis .....</b>   | 2073 |
| <i>Deng-Jr Peng, Afshin Pak, Luca Chinello, Terry Wood, Andrew Low</i>  |      |
| <b>OTC 24115 Development of Ocean Bottom Multicomponent Seismic System for Methane Hydrate Dissociation Monitoring .....</b>                                  | 2090 |
| <i>H. Takahashi, E. Asakawa, T. Hayashi, T. Saeki</i>   |      |
| <b>OTC 24116 Decision Making on the Ocean Floor - A Framework to Assess Variability and Uncertainty in Deep Sea Mining .....</b>                              | 2094 |
| <i>Tom Wambeke, Mario Alvarez Grima, Ricardo Van Gelder</i>   |      |
| <b>OTC 24117 LiuHua 11-1 FPS Life Extension - Classification Society’s Perspective .....</b>  | 2106 |
| <i>Wei Qian</i>   |      |
| <b>OTC 24118 Practical Experience Gained Operating a Compact Ultradeepwater Drill Ship .....</b>  | 2111 |
| <i>D. B. Wijning, J. Roedenburg, H. Deul, L. Van Den Broek, W. Mackinlay</i>  |      |
| <b>OTC 24120 Modular TLP Structure For Offshore Wind Turbines .....</b>   | 2124 |
| <i>F. Dahlhaus, J. Großmann</i>   |      |
| <b>OTC 24122 Pipe-in-Pipe: Thermal Management for Effective Flow Assurance .....</b>  | 2131 |
| <i>Mark Dixon</i>   |      |
| <b>OTC 24123 Subsalt Imaging using Tilted Orthorhombic Reverse Time Migration .....</b>   | 2140 |
| <i>Sabaresan Mothi, Patrick McGill, Tony Huang</i>  |      |
| <b>OTC 24124 Offshore Site Characterization of Small Strain Shear Modulus Using a Seabed Based Drilling System .....</b>                                      | 2147 |
| <i>H. Q. Nguyen, P. Kelleher, D. J. Degroot, T. Lunne, M. Senders, M. Banimahd</i>  |      |
| <b>OTC 24125 Development of Offshore Wind Recommended Practice for US Waters .....</b>  | 2161 |
| <i>W. D. Musial, R. E. Sheppard, D. Dolan, B. Naughton</i>  |      |
| <b>OTC 24127 A Simple Model for Estimating Leak Rates from Flashing Liquid Inventories, in Safety Studies of LNG &amp; FLNG Facilities .....</b>              | 2169 |
| <i>Ian R. Cowan, Marco Buonfiglioli</i>   |      |
| <b>OTC 24129 A Methodology for the Development of a Subsea Electrical Power Transmission and Distribution System .....</b>                                    | 2181 |
| <i>A. M. De Oliveira, S. Rezende, L. O. De Barros, S. T. S. Lima, G. A. Nojima, G. Braga</i>  |      |
| <b>OTC 24131 Multi-Dimensional Modeling of Two-Phase Flows in Channels and Pipelines .....</b>  | 2193 |
| <i>Bryce K. Campbell, Areti Kiara, Kelli Hendrickson, Yuming Liu, Hariprasad Subramani</i>  |      |

|  |      |
|--|------|
| <b>OTC 24132 Kaombo, from Exploration Towards Development : A Decade of Progress in Subsalt Imaging.....</b>                         | 2203 |
| <i>V. Martin, A. Douillard, L. Lemaitre, V. Clerget, C. Gerea</i>  |      |
| <b>OTC 24133 Implementing a Deepwater Pipeline Management.....</b>   | 2212 |
| <i>L. T. M. Samosir, D. Popineau, A. Lechon</i>  |      |
| <b>OTC 24134 Slug Response in Subsea Piping: Advancements in Analytical Methods.....</b>   | 2221 |
| <i>Adrian Connaire, Jason Payne, Jonathan McLoughlin, Aengus Connolly, Kieran Kavanagh</i>   |      |
| <b>OTC 24135 Depth Uncertainty Estimation for a Subsalt Development in the Lower Tertiary, Deepwater Gulf of Mexico .....</b>        | 2238 |
| <i>Cory Hoelting, Bassel Almoughraby, Maisha Amaru, Raquel Medina, James Chao, Konstantin Osypov, Yi Yang</i>                        |      |
| <b>OTC 24136 Piezocene Profiling of a Deepwater Clay Site in the Gulf of Guinea.....</b>   | 2242 |
| <i>Z. H. Ozkul, M. Bik, B. Remmes</i>  |      |
| <b>OTC 24137 Case Study: Heating Offshore Production Tubing Electrically for Crudes that Have Wax Issues.....</b>                    | 2255 |
| <i>David G. Parman, Samuel S. Ojeda, Andrew Marron</i>   |      |
| <b>OTC 24138 Reliable High Power ESP Tubing Hanger Connector Systems for Deepwater Downhole Applications.....</b>                    | 2269 |
| <i>Sami Spahi, Pamela Parsley</i>  |      |
| <b>OTC 24139 Jet Streams of the Tropical Atlantic: Observing and Forecasting the North Brazil Current Retroflection.....</b>         | 2288 |
| <i>Peter Brickley, Ashwanth Srinivasn, Neha Sharma, Michael Christensen</i>  |      |
| <b>OTC 24140 A Jacket Sizing Tool for Offshore Wind Turbines within the Systems Engineering Initiative .....</b>                     | 2304 |
| <i>Rick Damiani, Huimin Song</i>   |      |
| <b>OTC 24141 How New Data Acquisition Technique Can Complement Full Waveform Inversion and Lead to Improved Subsalt Imaging.....</b> | 2331 |
| <i>Denes Vigh, Nick Moldoveanu</i>   |      |
| <b>OTC 24143 Driving Innovation Through Collaboration in the Rig Market.....</b>   | 2340 |
| <i>Geir Ove Eikill, Anders Attramadal</i>  |      |
| <b>OTC 24146 Hydrodynamic Wave Loading on Offshore Structures.....</b>   | 2350 |
| <i>R. Lubeena, Vinay Kumar Gupta</i>   |      |
| <b>OTC 24147 OPera - Offshore Power System for the New Era .....</b>   | 2364 |
| <i>Sven-Erik Børresen, Martha Viteri, Tore Langeland, Conn Fagan, Gjermund Våge, Bjørn-Harald Bangstein</i>                          |      |
| <b>OTC 24148 Dry Tree Semisubmersibles for Gulf of Mexico.....</b>   | 2376 |
| <i>Steve Leverette, Xiaoqiang Bian, Oriol Rijken</i>   |      |
| <b>OTC 24149 Incorporating Attenuation In Model Building and Imaging .....</b>   | 2388 |
| <i>J. Bai, C. Wang, G. Chen, D. Yingst, M. Dolliazal, Z. Luo, R. Bloor, P. Farmer, Z. Zhou</i>                                       |      |
| <b>OTC 24150 Composite-reinforced Steel Drilling Riser for Ultra-deepwater High Pressure Wells .....</b>                             | 2392 |
| <i>C. A. Cederberg, D. D. Baldwin, M. A. Tognarelli, K. Bhalla</i>   |      |
| <b>OTC 24151 A Risk-based Approach to Managing the Integrity of Aging Floating Production Storage and Offloading Topsides .....</b>  | 2419 |
| <i>Douglas Kemp</i>  |      |
| <b>OTC 24152 Interwell Communication as a Means to Detect a Thief Zone Using DTS in a Danish Offshore Well .....</b>                 | 2440 |
| <i>John Davies, Hans Van Dongen, Arve Oftedal, Nitika Kalia</i>  |      |
| <b>OTC 24153 Simulation Technology to Assess ROV Operations at an Early Planning Phase .....</b>                                     | 2455 |
| <i>Brian Moore, Espen Rodsand, Steve Cohan, Sylvain Laroche, Daniel Dawes</i>  |      |
| <b>OTC 24154 Observations of Pipe-Soil Response from In-Situ Measurements .....</b>  | 2464 |
| <i>J. C. Ballard, C. De Brier, K. Stassen, R. A. Jewell</i>  |      |
| <b>OTC 24155 Advanced Analysis Methods for Complex Structural Fire Assessment Problems.....</b>                                      | 2479 |
| <i>H. Smith, A. Sari, Y. Ayhan</i>   |      |
| <b>OTC 24156 The Development and Production of Cascade and Chinook Fields in the Gulf of Mexico - An Overview.....</b>               | 2488 |
| <i>Cesar L. Palagi, Orlando J. S. Ribeiro, Deborah M. Mattos, Salvador Da Matta Jr.</i>  |      |
| <b>OTC 24157 Predicting Subsalt Pore Pressure with Vp/Vs.....</b>  | 2501 |
| <i>Saad Saleh, Ken Williams, Ajaz Rizvi</i>  |      |
| <b>OTC 24159 Automating Pore-Pressure Prediction in Subsalt Sediments.....</b>   | 2513 |
| <i>Saad Saleh, Ken Williams, Ajaz Rizvi</i>  |      |
| <b>OTC 24160 Qualification of Flexible Fiber-Reinforced Pipe for 10,000-Foot Water Depths.....</b>                                   | 2526 |
| <i>T. A. Anderson, M. E. Vermilyea, V. Jha, N. Dodds, D. Finch, J. R. Latto</i>  |      |

|  |      |
|--|------|
| <b>OTC 24161 Subsea Processing Systems: Future Vision .....</b>  | 2535 |
| <i>F. A. Albuquerque, O. J. S. Ribeiro, M. G. G. Morais, R. T. C. Orlowski, F. L. V. Vianna, C. Kuchpil, C. A. C. Moraes, R. P. Alves</i>              |      |
| <b>OTC 24162 Cascade and Chinook Subsea Development – A Challenging and Successful Case History .....</b>  | 2549 |
| <i>Sergio Porciuncula, Gus Cassity, John Weigle, Kazuhiko Kochi, Michael O'Donnell, Craig Masson</i>   |      |
| <b>OTC 24163 Cascade and Chinook Fields: Integrated Overview of the Reservoirs .....</b>   | 2575 |
| <i>Elizabeth A. Watkins, Alonso F. Navarro, Julio C. Syrio, Ladimir A. Riera, Nhom (Vince) Nguyen, Paulo S. Da Cruz, Renato Leite, Mauro R. Becker</i> |      |
| <b>OTC 24164 Eddy Current-Caused Platform Vibration and Correction.....</b>  | 2585 |
| <i>Juan J. Campo, Frank J. Buescher, Joe Kallaby</i>   |      |
| <b>OTC 24166 Design of Steel Lazy Wave Riser for Disconnectable FPSO .....</b>   | 2612 |
| <i>Jingyun Cheng, Peimin Cao</i>   |      |
| <b>OTC 24167 Albacora Subsea Raw Water Injection Systems .....</b>   | 2625 |
| <i>L. Buk Jr., C. A. Andrade, J. B. Azevedo, E. J. J. Coelho, O. C. Costa, C. Kuchpil, A. G. Siqueira, A. L. S. Souza</i>                              |      |

#### Volume 4

|  |      |
|--|------|
| <b>OTC 24168 New Test Method for Field Evaluation of Asphaltene Deposition.....</b>  | 2635 |
| <i>Rama Alapati, Nikhil Joshi</i>  |      |
| <b>OTC 24169 Large-Bore Expandable Liner Hanger Provides Reliable, Cost Effective Solution for Liner Placement in Critical Well Path .....</b>   | 2646 |
| <i>Michael (Rick) Johnson, Nathan Wyatt, Kevin Ardoine, Paul Benet, Miles N. Sweep</i>   |      |
| <b>OTC 24171 Near-Bottom Acoustical Detection of Bubble Streams Emanating From Natural Seafloor Seeps in the Gulf of Mexico.....</b>   | 2654 |
| <i>C. De Moustier, X. Zabal, J. Boelmann, B. J. Kraft, O. Zielinski, P. A. Fox</i>   |      |
| <b>OTC 24173 Challenges in Seismic Imaging and Reservoir Characterization of Presalt Oilfields in Offshore Brazil.....</b>   | 2661 |
| <i>Paulo Johann, Gisele Nery Camargo, Rodrigo Macedo Penna, Roberto De Melo Dias</i>   |      |
| <b>OTC 24176 Fiber Based Methane Leak Detection.....</b>   | 2674 |
| <i>Jeff McFadden</i>   |      |
| <b>OTC 24177 Flow Assurance Impacts on Lean/Rich MEG Circuit Chemistry and MEG Regenerator/Reclaimer Design .....</b>  | 2684 |
| <i>T. M. Latta, M. E. Seiersten, S. A. Bufton</i>  |      |
| <b>OTC 24178 Advancement of Geotechnical Site Investigation Practice using ROV Technology.....</b>   | 2706 |
| <i>Andy Barwise, Michael Cowie</i>   |      |
| <b>OTC 24179 Drilling and Completing Cascade and Chinook Wells: A Design and Execution Case History .....</b>  | 2714 |
| <i>Flavio Dias De Moraes, Oswaldo Moreira, Ziad Haddad, Scott Ogier, Jonathan Shipley, Mauricio Rebelo, Fernando Gama</i>  |      |
| <b>OTC 24180 Numerical Modeling of Runout and Velocity for Slide-Induced Submarine Density Flows: A Building Block of an Integrated Geohazards Assessment for Deepwater Developments .....</b> | 2727 |
| <i>B. Spinevine, D. Rensommet, T. De Thier, M. Clare, G. Unterseh, H. Capart</i>   |      |
| <b>OTC 24181 Application of Lessons Learned From Field Experience to Design, Installation and Maintenance of FPS Moorings .....</b>  | 2745 |
| <i>Sai Majhi, Richard D'Souza</i>  |      |
| <b>OTC 24182 Condition Performance Monitoring for Subsea: Experience and Value Documentation from the Gjøa Field .....</b>   | 2760 |
| <i>Per-Kristian Roald, Torgrim Aas, George Gibbs Smith, Clarence Soosaipillai, Dag Evald Alfstad, Jean-Yves Bressand</i>   |      |
| <b>OTC 24183 Modular Stacked DC Transmission and Distribution System for Ultradeepwater Subsea Process .....</b>   | 2765 |
| <i>R. Lai, D. Zhang, M. Harfmon Todorovic, L. Garces, R. Gupta, S. Chi, D. Dong, C. Sihler, S. Gunturi, S. Rocke, K. Elgsaas, R. Datta, J. Song-Manguelle, M. Alford, M. Haji, J. Pappas</i>   |      |
| <b>OTC 24184 Mooring System Life Extension using Subsea Inspection Technologies .....</b>  | 2776 |
| <i>Scott Allan, Tyler De Gier, Anthony Hall</i>  |      |
| <b>OTC 24185 Structural Safety Assessment of FLNG Cargo Containment Systems against Sloshing Loads.....</b>  | 2787 |
| <i>J. M. Kim, M. H. Oh, T. H. Park, J. S. Moon, W. S. Sim, M. S. Lee</i>   |      |
| <b>OTC 24186 Gulf of Mexico Wilcox Play Property Trend Review .....</b>  | 2796 |
| <i>Joshua Oletu, Umesh Prasad, Amir Ghadimipour, Stephen Sakowski, Katerina Vassilellis, Bryan Graham, Namsu Park, Lisa Li</i>   |      |

|  |      |
|--|------|
| <b>OTC 24187 Recent Trends in the Analysis and Design of Offshore Platforms in Seismic Regions .....</b>   | 2805 |
| <i>Frank J. Puskar, Albert P. Ku, Richard W. Litton</i>  |      |
| <b>OTC 24189 Taking the Proper Action to Gas Influx during Constant Bottom-Hole Pressure Technique of Managed Pressure Drilling .....</b>  | 2816 |
| <i>Ali Karimi, Stefan Miska, Mengjiao Yu, Evren Ozbayoglu, Reza Majidi</i>   |      |
| <b>OTC 24191 Natural Seepage Systems at Biloxi &amp; Dauphin Domes &amp; Mars Mud Volcano, North East Mississippi Canyon Protraction Area, Gulf of Mexico .....</b>              | 2831 |
| <i>Peter D. Carragher, Andrew Ross, Eric Roach, Christine Trefry, Asrar Talukder, Charlotte Stalvies</i>   |      |
| <b>OTC 24192 The Gulf of Mexico Subsalt Wells Atlas: A Comprehensive Review and Lessons Learned.....</b>   | 2850 |
| <i>Saad Saleh, Ken Williams, Ajaz Rizvi</i>  |      |
| <b>OTC 24193 A General Optimization Framework for the Routing of Oceangoing Vessels in the Petroleum Industry.....</b>   | 2861 |
| <i>Jimmie Pelton</i>   |      |
| <b>OTC 24195 RPSEA Program Riser Technologies and Strategies .....</b>   | 2871 |
| <i>W. J. Head, J. M. Pappas</i>  |      |
| <b>OTC 24196 A Nonlinear Dynamic Substructuring Approach for Efficient Detailed Global Analysis of Flexible Risers .....</b>   | 2881 |
| <i>Arya Majed, Shankar Bhat, Michel Dib, Phil Cooper</i>   |      |
| <b>OTC 24197 Swellable Technology Seals Top of Liner in Small Annular Area in Deepwater Gulf of Mexico.....</b>  | 2892 |
| <i>Ron Hinkie, Taylor Stein, Chris Brinkman</i>  |      |
| <b>OTC 24199 Water Management for EOR Applications - Sourcing, Treating, Reuse and Recycle .....</b>   | 2897 |
| <i>Lisa Henthorne, Water Standard, John Walsh, Valentina Llano</i>   |      |
| <b>OTC 24200 Bayesian Inversion of Heterogeneous Media: Introducing the Next Generation of Integrated Studies for Offshore Site Investigations .....</b>                         | 2910 |
| <i>Zenon Medina-Cetina, Saba Esmailezadeh, Jun Won Kang, Loukas F. Kallivokas</i>  |      |
| <b>OTC 24201 Mudline ESP: Electrical Submersible Pump Installed in a Subsea Skid .....</b>   | 2922 |
| <i>M. A. R. Roberto, P. S. Oliveira, B. M. Pyramo</i>  |      |
| <b>OTC 24202 Shuttle Tankers in the Oil Export of Cascade and Chinook Fields.....</b>  | 2932 |
| <i>Dalmo Barros, Jeremiah Daniel, Elisa Souza, O'Neil Hibbert, Sergio Matos, Marco Souza, Carlos Mastrangelo</i>   |      |
| <b>OTC 24203 Increasing the Accuracy of Marine CSEM Survey Planning and Data Interpretation Using Novel 3D TTI Anisotropic Resistivity Modeling.....</b>                         | 2942 |
| <i>Michael Frenkel</i>   |      |
| <b>OTC 24204 Subsea Uninterruptible Power Supplies (UPS) for Local Holdup of Magnetic Levitating Bearings in Subsea Production Hardware.....</b>                                 | 2948 |
| <i>A. Greig, D. White, H. Grob</i>   |      |
| <b>OTC 24205 Stranded Gas Field Development with Cluster LNG Technology.....</b>   | 2957 |
| <i>Junghan Lee, Kathleen Eisbrenner, Dongkyu Choi</i>  |      |
| <b>OTC 24206 Anisotropic Imaging in Complex Media: Step Change in the Quality and Interpretability of the Results .....</b>  | 2969 |
| <i>Olga Zdraveva, Robert Hubbard, Charles Wagner, Yi Yang, David Burkepile, James Heimbach</i>   |      |
| <b>OTC 24207 Gulfstar Spar VIM Responses in Flume Tank.....</b>  | 2977 |
| <i>Hisham Moideen, Arun G. Antony, Young-Chan Park, Mohammed Islam, Paul Herrington, Ken Huang, John Halkyard</i>  |      |
| <b>OTC 24208 Exploitation and Production of Gas Condensate Reservoirs.....</b>   | 2994 |
| <i>Gina Vega Riveros</i>   |      |
| <b>OTC 24209 Projecting Shuttle Tanker Fleet for Gulf of Mexico FPSOs: Discrete Event Simulation.....</b>  | 3008 |
| <i>Sai Majhi, Ray Fales, Makarand Kulkarni, Jeffrey Feng</i>   |      |
| <b>OTC 24210 Development of Double Joint Welding Procedure for X90 Grade Seamless Pipes in Riser Applications.....</b>   | 3019 |
| <i>H. Nagayama, J. Nakamura, M. Hamada, M. F. Mruczek, M. Vickers, N. Hisamune, T. Fukuba</i>  |      |
| <b>OTC 24211 Fundamental and Specific Marine Geohazard Risk Assessment Categorisation.....</b>   | 3030 |
| <i>A. W. Hill, G. A. Wood, C. A. Scherschel</i>  |      |
| <b>OTC 24212 Multiscale Seabed Seepage Manifestations in the South Caspian Basin, Azerbaijan.....</b>  | 3048 |
| <i>Thomas Gray, Gareth Wood, Jeff Dingler</i>  |      |
| <b>OTC 24214 Operational Experience with a Cylindrical Floater Design Demonstrating the Feasibility of Safe Permanent FPSO/FSO Mooring in Areas with Tropical Cyclones .....</b> | 3063 |
| <i>Tord B. Thorsen, Einar B. Glomnes, Jan V. Aarsnes, Fredrik Major</i>  |      |
| <b>OTC 24216 Development of a Real-Time Riser Fatigue Monitoring System .....</b>  | 3078 |
| <i>D. J. Kluk, S. I. McNeill, K. K. Bhalla, T. Saruhashi, I. Sawada, M. Kyo, E. Miyazaki, Y. Yamazaki</i>  |      |
| <b>OTC 24217 Barracuda Subsea Helico-Axial Multiphase Pump Project .....</b>   | 3092 |
| <i>C. Kuchpil, C. E. M. Souza, E. J. J. Coelho, L. C. T. Silva, M. B. Cerqueira, L. Carbone</i>  |      |

|  |      |
|--|------|
| <b>OTC 24218 Development of a Monobore, High-Flow, ROV Operable Connector for Gas Lift and other Applications.....</b>   | 3104 |
| <i>Prashant Kamdar, Dan Krohn, Mike Cunningham</i>   |      |
| <b>OTC 24219 Best Practices for the Collection, Analysis, and Interpretation of Seabed Geochemical Samples to Evaluate Subsurface Hydrocarbon Generation and Entrapment .....</b>                                    | 3109 |
| <i>Michael A. Abrams</i>   |      |
| <b>OTC 24220 Spectral Decomposition for 3D seismic: An Emerging Tool for Deep-Water Geohazard Assessment.....</b>  | 3130 |
| <i>Eric Cauquil</i>  |      |
| <b>OTC 24221 Integrated Pre-Drill Pore Pressure and Borehole Stability Prediction for Prelude Development.....</b>   | 3134 |
| <i>K. S. Hansen, G. Wang, O. Adeleye, K. V. McNeil, B. A. Couzens-Schultz, K. Azbel, M. D. Sarfare, U. Tare</i>  |      |
| <b>OTC 24223 Development of a Standard Geohazards Toolbox for Integrated Assessment .....</b>  | 3150 |
| <i>Daniel A. Bear, Kevin J. Bradford</i>   |      |
| <b>OTC 24224 A New Approach to Pipeline Inspection using Autonomous Underwater Vehicles (AUV's).....</b>   | 3157 |
| <i>Amin Nasr, Anne Courbot, Bill Gilmour, Caitlin Biedermann</i>   |      |
| <b>OTC 24225 Applicability and Limitations of Electromagnetic Data Offshore West Greenland .....</b>   | 3163 |
| <i>L. Bornatici, M. D. Watts</i>   |      |
| <b>OTC 24226 Analysis of Oil Volume Fluxes of Hydrocarbon Seep Formations on the Green Canyon and Mississippi Canyon: A Study Using 3-D Seismic Attributes in Combination with Satellite and Acoustic Data .....</b> | 3174 |
| <i>Oscar Garcia-Pineda, Ian Macdonald, William Shedd</i>   |      |
| <b>OTC 24227 Integrated Use of 3-D Seismic, Multibeam Sonar, and ROV to Confirm Deepwater Benthic Communities, and Archeological Sites in the Gulf of Mexico .....</b>   | 3182 |
| <i>William Shedd, Jack Irion</i>   |      |
| <b>OTC 24228 Interstitial Light Hydrocarbon Gases in Jumbo Piston Cores Offshore Indonesia: Thermogenic or Biogenic? .....</b>   | 3186 |
| <i>Bernie B. Bernard, James M. Brooks, Dan L. Orange, John Decker</i>  |      |
| <b>OTC 24229 Riser Concepts for High Motion Vessels in Ultra-deep Water .....</b>  | 3198 |
| <i>Brian S. Royer, Thomas L. Power, William Head</i>   |      |
| <b>OTC 24231 Intelligent Software Agents: Sensor Integration and Response.....</b>   | 3218 |
| <i>James J. Kulesz, Ronald W. Lee</i>  |      |
| <b>OTC 24232 Caesar-Tonga Project Steel Lazy-Wave Riser Design.....</b>  | 3230 |
| <i>Michael Beattie, Edmund Lahey, Roger W. Burke, Erin R. Balch</i>  |      |
| <b>OTC 24233 Numerical Prediction of Experimentally Observed Behavior of a Scale-Model of an Offshore Wind Turbine Supported by a Tension-Leg Platform .....</b>   | 3246 |
| <i>I. Prowell, A. Robertson, J. Jonkman, G. M. Stewart, A. J. Goupee</i>   |      |
| <b>OTC 24234 Compact Oxygen Removal for Waterflood Projects .....</b>  | 3270 |
| <i>Matthew J. Brinn, Sean T. Wyde</i>  |      |
| <b>OTC 24236 BOP MUX Control System: Comparing Embedded Computer Based Versus PLC Hybrid System for Maximum Reliability.....</b>   | 3277 |
| <i>Earl Shanks, John Socco, Greg Boyle, Lynn Tinney, Robert Johnigan, Charles Whitney</i>  |      |
| <b>OTC 24237 Interpreting Geochemical Data From Seafloor Hydrocarbon Seeps: You Can't Always Get What You Want.....</b>  | 3286 |
| <i>Harry Demicki Jr.</i>   |      |
| <b>OTC 24240 Scour Sensitivity Study for Large-Diameter Monopiles .....</b>  | 3303 |
| <i>Turel Gur, Hugo Gomez, Dan Dolan, David Sanderson</i>   |      |
| <b>OTC 24241 Towards Persistent Real-Time Autonomous Surveillance and Mapping of Surface Hydrocarbons .....</b>  | 3316 |
| <i>Fraser R. Dalglish, Bing Ouyang, Anni K. Vuorenkoski, Jesse C. Thomas, Peter D. Carragher</i>   |      |
| <b>OTC 24242 Relationships Between Oil Seeps and Seabed Morphologies .....</b>   | 3334 |
| <i>Damien Dhont, Eric Cauquil, Romain Jatiault</i>   |      |
| <b>OTC 24243 AUVs and ROVs: Supporting Offshore Renewable Technologies .....</b>   | 3339 |
| <i>Joshua Elvander, William O'Halloran</i>   |      |
| <b>OTC 24245 CFD Modeling of Bubbly, Slug and Annular Flow Regimes in Vertical Pipelines .....</b>   | 3348 |
| <i>Duraivelan Dakshinamoorthy, Yi Dai, Madhusuden Agrawal</i>  |      |
| <b>OTC 24246 The Role of Geophysical Uncertainty in Field Development Concept Selection .....</b>  | 3363 |
| <i>Stale Romundstad, Ivar Meisingset, Thomas Forde, Daria Krasova, Sverre Tresselt</i>   |      |
| <b>OTC 24247 Introduction to FLNG FEED Study .....</b>   | 3373 |
| <i>Jinsang Park, Kiil Nam, T. J. Kim, Jae Shin Kim, Yoon Choon Kim</i>   |      |

|   |      |
|---|------|
| <b>OTC 24248 Past, Present and Future Marine Geohazard Issues: Developing Processes to Address Developing Industry Concerns .....</b>   | 3381 |
| <i>A. W. Hill, A. H. Walls, L. A. Romo, J. B. Turnbull, L. Rogers</i>   |      |
| <b>OTC 24250 Today's Top 30 Flow Assurance Technologies: Where Do They Stand? .....</b>   | 3392 |
| <i>Phaneendra Kondapi, Randi Moe</i>  |      |
| <b>OTC 24251 Truss Spar VIM Correlation between Model Test and Field Measurement .....</b>  | 3405 |
| <i>F. Yiu, I. Prislin, M. Beattie, C. Ocker, S. Maraju, C. Leon</i>   |      |
| <b>OTC 24252 Boehmite Based Sulphonated Polymer Nanoparticles with Improved Squeeze Performance for Deepwater Scale Control.....</b>  | 3421 |
| <i>Chao Yan, Amy T. Kan, Wei Wang, Fei Yan, Lu Wang, Mason B. Tomson, Huiqiang Zhu, Ross Tomson</i>   |      |
| <b>OTC 24255 Ultrahigh Conductivity Umbilicals: Polymer Nanotube Umbilicals .....</b>   | 3433 |
| <i>C. Dyke, L. M. Jacob, D. Madden, E. V. Barrera</i>   |      |
| <b>OTC 24257 Shape Memory Alloy: Low-Cost Manufacturing for the Oil and Gas Industry .....</b>  | 3438 |
| <i>Peter Lewis, Dale Gordon</i>   |      |
| <b>OTC 24259 Use of Plasma-Shell Technology for Concurrent Control of Chemical and Microbial Contaminants .....</b>   | 3442 |
| <i>Adeline Miermont, Victoria W. Kurtz</i>  |      |
| <b>OTC 24260 Migration of Oil and its Subsurface Expressions in the Deep-water Gulf of Mexico .....</b>   | 3448 |
| <i>Angel Callejon, Gustavo Diaz, Peter Kahn, Oscar Garcia-Pineda</i>  |      |
| <b>OTC 24262 Wind Testing of a Dual Derrick .....</b>   | 3457 |
| <i>Michael Effenberger, George Ross, Jorge Martinez, Richard Beck, Tammer Botros, Sandeep Jesudasen, Tim Jennings</i>   |      |
| <b>OTC 24263 Evolution of Subsea Boosting: A Review of Past and Present Projects .....</b>  | 3471 |
| <i>Phillip Luce, Jarle Michaelsen, Nils A. Solvik</i>   |      |
| <b>OTC 24266 Development of Downhole Magnetic Drive Systems for Rigless Artificial Lift Applications.....</b>   | 3479 |
| <i>Jamie Cochran, Allan Denholm, Iain Maclean</i>   |      |
| <b>OTC Panel Overview: DeepStar® Project; A Global Deepwater Technology Development .....</b>   | 3490 |
| <i>Greg Kusinski, Art J. Schroeder Jr., James E. Chitwood</i>   |      |
| <b>OTC Panel Overview: Global Energy Outlook: Shaping the Future!.....</b>  | 3504 |
| <i>Gamal A. Hassan, Ahmed Hashmi, Mohammed Bin Hamad Al-Rumhi, José De Vasconcelos, Diezani Alison-Madueke, David Ramsay, Farouk Al Zanki, Maria Das Gracas Silva Foster, Tan Sri Dato' Shamsul Azhar Abbas, Carlos Morales-Gil</i> |      |
| <b>Author Index</b>   |      |