

Offshore Technology Conference (OTC 2025)

Houston, Texas, USA
5-8 May 2025

Volume 1 of 7

ISBN: 979-8-3313-2088-1

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© (2025) by Offshore Technology Conference
All rights reserved.

Printed by Curran Associates, Inc. (2025)

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

Offshore Technology Conference
P.O. Box 833868
Richardson, Texas 75083-3836
USA

Phone: +1.972.952.9494
Fax: +1.713.779.4216

meetings@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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

INTELLIGENT SOLUTIONS AND TECHNOLOGIES IN WELL DESIGN, COMPLETION, PRODUCTIVITY AND SUBSEA OPERATIONS

Integrated Workflow for Designing a Multi-Zonal Water Injector with Intelligent Well Completion Functionality.....	1
<i>Vijay Rachit, Pankaj Piyush, Edgar E Romero, Shaun P Arnold, Subhash Kalla</i>	
Downhole Electrical System Development Based on Reliability: A Step Forward for High-Performance Subsea Well Completions.....	20
<i>M. F. da Silva Jr, E. Schnitzler, F. S. de Oliveira, A. F. M. Oliveira Jr, M. V. da S. Nóbrega</i>	
Unlocking Electric Completions Through Dedicated Subsea Interfaces.....	38
<i>Eduardo Schnitzler, Manoel F. da Silva, Denis M. B. da Silva, Alexandre R. Pereira, Alysson V. G. de Menezes, Antonio F. M. Oliveira, Fernando S. de Oliveira, Fernando B. Fernandes</i>	
Use of Dual-Action Filter Cake Remover and Activation Fluid for Conformable Sand-Control Management Systems.....	55
<i>Mesa. Sebastian, Garza. Ramon, Pedreira. Jose, Reyes. Carlos</i>	
Harnessing the Power of GenAI - Next Gen Intelligent Production, Intervention and/or Completion Engineers.....	64
<i>S. Saumya, S. Gupta, M. Paydayesh, D. Shekhawat</i>	
Pioneering Hydraulic Wet-Mate Connection in Intelligent Completions with ESP: A Case Study of 70 Successful Deployments.....	78
<i>Z. S. Arackakudiyil, A. Alsadeh, A. Al-Arfaj, S. Gray</i>	
A Numerical Model for Friction Prediction in Directional Wells.....	86
<i>O. Rodrigues, C. Fernandes, J. Araujo, W. Lira, J. Santos, I. Carmo, C. Souza</i>	
Advanced ESP Monitoring System for Performance and Production Optimization	108
<i>A. Alkhawaher, H. Al Jishi, S. Al-Aseef</i>	

INNOVATIVE SUBSURFACE APPROACHES FOR THE SUCCESS OF CARBON CAPTURE AND STORAGE

Value of Offshore Pore Space for Carbon Capture and Storage.....	116
<i>N. Donatien-Roland Diby, D. Nathan Meehan</i>	
Optical Sediment Trap Reveals Mechanisms Influencing Deep-Ocean Carbon Sequestration.....	132
<i>C. L. Huffard, C. A. Durlin, I. Hu, P. R. McGill, E. Mattiassen</i>	
Numerical Simulation of CO ₂ Hydrate Formation in Subsea Sand When Salinity is Considered.....	141
<i>S. Chen, T. Sato, Y. Sawano, K. Tada</i>	
Optimization of the Development Plan for CO ₂ Displacement Considering the Synergistic Effects of Oil Production and CO ₂ Storage in Low-Permeability Oil Reservoirs	150
<i>Xiliang Liu, Hao Chen, Xinlong Yang, Yang Li, Peifu Xu, Mingcheng Ni</i>	

Driving Cost Reduction in CCUS Projects: Innovating Qualification Technologies to Replace Expensive CRA with Cost-Efficient Glass Fiber Polymer Composites.....	160
<i>L. Zhao, T. Dunne, J. X. Ren, W. H. Li, P. Cheng</i>	

ADVANCEMENTS IN DRILLING AND DATA ACQUISITION: CASE STUDIES AND MODELING APPROACHES

Distributed Data Acquisition Using Drilling Microchips in Horizontal Wells	175
<i>Biao Ou, Bo Feng, Vahid Dokhani, Zhaorui Shi, Bodong Li</i>	
Exceeding Expectations in Data Acquisition: A Case Study of the Largest Logging While Drilling Bottom Hole Assemblies Run in the Gulf of Mexico	192
<i>Andres Nunez Davila, Tony Nunes, Rajeev Samaroo, Franco Chesta</i>	
Versatile Intelligent Circulating Tool to Mitigate Drilling Risks in Highly Depleted Formations	201
<i>M. A. Mokhti, M. H. Tobiaany, S. N. Ishak, R. Radzlan, A. M. Tahoun, D. Amer, A. M. Mohamad Khalil</i>	
Numerical Modeling of Conductor Casing Installation: Leveraging the Material Point Method.....	210
<i>B. R. Barboza, J. M. F. Melo, M. S. C. Tenorio, E. T. Lima Junior, J. P. L. Santos, F. S. Cutrim, R. Dias</i>	
Dual Gradient Mud Cap Technique and Monitoring System Developed to Manage Total Losses While Drilling in the Brazilian Pre-Salt Carbonate	227
<i>F. R. G. da Silva, C. N. Donatti, E. Hayashi, L. A. S. Rezende, V. Girardi, V. Sá, I. Hammill, E. Barrios, R. Viali, R. V. Noort, S. S. Emam</i>	
Quantifying Operational Effectiveness of Autonomous Drilling Platforms: A Systematic Approach to Defining Measures of Performance	236
<i>R. A. Perdomo, C. A. Zapata</i>	
An Analytical Model for Predicting Composite Inflow Performance Relationship (IPR) for Fishbone Drilling Technology with N-Number of Ribholes	264
<i>Ibukun Ojo, Adesina Fadairo</i>	

ADVANCEMENTS IN DESIGN AND INSTALLATION OF OFFSHORE FACILITIES AND SUBSEA STRUCTURES

Re-Usable and Lightweight Composite Material Lift Bar for the Installation of Subsea Structures.....	289
<i>R. L. Jones, S. Rajaratnam, F. Nicoletti, T. Andrews, A. Agirregomezkorta</i>	
Loading-Out Mega Offshore Platforms from China: The Challenges and Solutions	301
<i>J. I. Boksmati, A. S. AlShaye, H. Sun, M. Zhang, R. A. Khodr, S. P. Mistry, A. M. Wang</i>	
Transportation and Installation of Two 90km 230 KV Mega Offshore Composite Cables	312
<i>M. Abdelhamid, R. Santana, A. Sinha, J. Rice, J. Anand, S. Ananda Prasath, F. Calanca, A. W. Ruhaili, A. J. Albahrani</i>	
Enabling Operations in Extreme Environments with Jumper on Demand Solution.....	325
<i>H. de Boer, S. Feddema, D. Melot, F. Boemare, C. Boursas</i>	

TECHNOLOGY AND INNOVATION: REVOLUTIONIZING OFFSHORE OPERATIONS AND SAFETY

Innovative Tools for Commissioning of Brazilian Pre-Salt FPSOs: Enhancing Efficiency, Safety and Quality Management	334
<i>G. Teixeira, B. P. dos Santos, F. R. Gonzalez, L. d. Nogueira, J. Dillenburg, T. Peixoto Vieira, L. Da Silva Teixeira, T. Jambeiro, B. Espindola, A. R. Maia, G. Albuquerque, M. Lima, P. Loureiro</i>	
O&M 5.0 - Enhancing O&M Practices Through Technology and Innovation	343
<i>B. C. Porto, M. E. S. Ramis, V. J. B. T. Filho, G. L. L. Silva, V. L. F. Matos, P. C. M. Moreira, J. E. Ramos</i>	
Advancing Downhole State Detection in Coiled Tubing Operations with a Novel Deep Learning Approach	363
<i>Zihan Wu, Junzhe Wang, Meng Li, Jay Yoon, Ali Marzban, John Pursell</i>	
Transforming Produced Water Management with a Decision Support System	373
<i>A. K. Loomba, G. S. Aaboen, P. K. Soni, M. E. W. Stanko</i>	
Pioneering 6 Axis Robotic Welding of Critical Offshore Structure Fabrication with High Efficiency and Schedule Acceleration	389
<i>Subindas Melapurakkal Mohandas, Saeed A. Salah, Abdullah A. AlQahtani</i>	
Advanced Fluid Influx Detection in Drilling Wells Using Real-Time Data and Probabilistic Uncertainty Analysis	405
<i>Meng Li, Junzhe Wang, Jay Yoon, Jaideva C. Goswami, Marcel Boucher, Stephen James Pink, Ali Marzban</i>	
Revolutionizing Offshore Operation: Autonomous Marine Intervention Platform	416
<i>A Saif Ahmed Alshhehi, Mohamed Abdul Hameed Alhammadi, Nayef Salem Alshhehi, Shammas Kallinkil, Khaled Alhosani, Sultan Khalifa Alowaid</i>	
Resident Robotics for Offshore - De-Risking and Developing Solutions to Provide a Real-Time, On-Demand Presence Offshore	429
<i>Ross Doak, Jiawei Dong, Daniel Hulsebosch, Jacob Schexnayder, Patrick Garrison, Everett Hillis, Yong-Khai Ong, Munjal Shah, Kirti Shankar Sharma</i>	

NAVIGATING CHALLENGES IN SUBSEA PROJECTS: TECHNOLOGICAL INNOVATIONS AND SOLUTIONS

Renewing Fiber Optics Infrastructure on Mature Offshore Assets at Campos Basin	444
<i>H. L. V. F. Ribeiro, D. Aloise, E. D. Silva, B. B. Siqueira, G. L. Nascimento, S. P. Davico A. B.</i>	
Challenges and Opportunities for Subsea Multiphase Boosting Application	460
<i>A. Sant'Anna Stender, J. Azambuja, A. Dos Santos, F. De Araujo, L. Alencar, C. A. Patusco, P. Martins, H. Prince Koelln, L. M. Hayashi, M. Soder, A. de Oliveira, L. C. Tosta da Silva, G. Romero, G. Geraldo Pappen, A. V. De Melo, J. Silva</i>	
Búzios 7 Capital Project - From Conception to Execution	471
<i>R. Nascimento, F. Rosa, F. Lima, R. Maués, P. Carrião, R. Ribeiro, J. Navarini, A. Gomes</i>	
Unlocking Deepwater Tiebacks with Subsea Desulphatation Technology	481
<i>F. Garcia, E. Tournis, P. Pedenaud, R. Giolo, M. Simionato, G. Skivington</i>	

Value Case of an Integrated Subsea Seawater Desulfation and Injection System	491
<i>O. S. Haruna, W. Van Korven, D. A. B Barbosa, C. S. Lillevik, J. Kolbu</i>	
Barrier Fluid-Less, Subsea Seawater Injection Pump Qualification.....	504
<i>F. J. Kreke, M. Bosciano, R. O. Kiesow, R. Giolo</i>	
Technical Solutions and Innovations in Yggdrasil Project	517
<i>I. Grishkov, M. Helgen, T. Taarneby, H. Gardli, M. Johansen, K. E. Aas</i>	
Unveiling the Power of Sound for Deepwater Assets.....	527
<i>B. Tanju, E. Carline, M. S. Wood</i>	
Novel Mechanical Tool for Running, Locking, and Retrieval of Subsea Tree to Wellhead	543
<i>G. Jose, J. O'Driscoll</i>	

OPTIMIZING DRILLING AND MONITORING THROUGH INNOVATIONS IN DIGITIZATION, AI, AND MACHINE LEARNING

Large Language Model-Based Workflow for Optimizing Offset Well Data Analysis and Generating Well Design Risk Profiles.....	553
<i>P. Kowalchuk, A. Grotte, S. Brandsberg-Dahl, V. Sabharwal, U. V. Jensen</i>	
Identification of Porous Systems in Complex Carbonates Using Artificial Intelligence.....	566
<i>Luis Ahindel Castellanos Bassoult, Ricardo Alcantara, Arturo Perez Hernandez, Rafael Perez Vazquez, Adela Velasquez</i>	
Optimizing Drilling Efficiency: A Fast Fourier Transform Approach to Energy Loss Detection from Surface Measurements.....	590
<i>Freddy Jose Marquez, Tushar Bajaj, Camilo Andres Gil</i>	
A Hybrid Deep Learning Approach for Rate of Penetration Prediction in Deepwater Drilling	598
<i>Wenchao Zhu, Yu Song, Li Zhang, Meijun Dong, Yatong Liu, Kejin Chen, Hong Zhu</i>	
Developing a Data-Driven Operation Classifier and Stand Counter Tool to Improve Drilling Operations	609
<i>J. Santos, G. S. Payette, K. Cotta, L. Vechi, M. Martuscelli, W. Rodrigues, R. Nobre, L. Florindo, C. Batista, H. Carminati, B. Machado, I. Ribeiro</i>	
Automatic Daily Drilling Mud Report Processing Using Generative AI to Maximize the Operational Efficiency.....	627
<i>Junzhe Wang, Jay Yoon, Ali Marzban, Ricky Castanos, Nicholas Fruge, Ian Holman</i>	
Embedded System for Cavings Detection in Well Drilling Operations Using Computer Vision Techniques to Enhance Real Time Well Stability Analysis	641
<i>M. V. G. Jacinto, L. H. L. de Oliveira, J. M. B. Resende, G. C. de Medeiros, T. C. Rodrigues, D. R. Medeiros, L. C. de Montalvão</i>	
Revolutionizing Real-Time Drilling: Leveraging Large Language Models and Retrieval-Augmented Generation for Enhanced Operational Efficiency	650
<i>J. Matheus, S. Tiwari, W. Szemat, D. Amaya</i>	

INNOVATIVE TECHNOLOGIES TO IMPROVE OFFSHORE WELL INTEGRITY

Advancements in Robotic FPSO Tank Inspection: A Future Development Roadmap	661
<i>A. Guha, A. Cwiklik, D. Oldford, K. McSweeney</i>	

Deep Transformer Networks Applied to Anomaly Detection in Oil and Gas Wells	675
<i>I. M. N. Oliveira, E. T. Lima Junior, T. M. A. Vieira, A. C. A. Silva, D. L. Ramos, P. E. Aranha</i>	
Fingerprinting Burst and Collapse Events in Well Casings Using Electromagnetic Logs.....	688
<i>Huiwen Sheng, Junwen Dai, Mahmoud Saada, Ahmed E. Fouda, John Savage</i>	
Casing Wear Modeling and Mitigation of a Sidetrack on a Challenging Deepwater Well	702
<i>Russell Mertens, Jonathan Vecseri, Ben Kotara, Daniel Booker, Danny Spreafico</i>	
Development of a Nondestructive Inspection Technology to Detect Offshore Grating Damage	718
<i>O. Akinci, I. Kalpakidis, K. Eltouny, S. Palkovic, A. Humphreys, S. DelloRusso</i>	

VOLUME 2

INNOVATIONS AND CHALLENGES IN RECYCLING AND DECOMMISSIONING OF OFFSHORE STRUCTURES

Enhancing Subsea Asset Integrity: Holistic Risk Management and Monitoring Strategy for Mud Line Suspended Wells	742
<i>E. A. Al Hosani, I. A. Hakro, A. H. Ahmed, M. S. Ali, A. M. Daba, A. Jaffrey, N. Gordon</i>	
RD&I Portfolio for the Sustainable Decommissioning of Offshore O&G Structures in Brazil	755
<i>F. A. Sena, L. R. Freitas, L. R. Silva</i>	
EPRD: A New Frontier in Subsea Decommissioning in Brazil	795
<i>A. Ribeiro, H. Soares, W. Patricio Junior</i>	
Amended Reefing Legislation is Needed to Spur Decommissioning of California Offshore Oil and Gas Platforms	804
<i>John B. Smith, Robert C. Byrd</i>	
Impact of Planning and Experience in Well Abandonment - Lessons Learned from Complex Well Abandonment in Bonga Deepwater Field.....	826
<i>A. Okosun, O. Ojeh-Oziegbe, O. Adubi, O. Ugoh, O. Onafeso</i>	
Rigless Abandonment Strategy for Deepwater Field – Case Study for Bonga End of Field Life	846
<i>A. Okosun, I. Iyalla</i>	
Recycling of Floating Offshore Structures	869
<i>Gutturthi Sohita, Muhammad Jaleel, Amit Kumar Rai, S. Jayaram</i>	
Reducing Post-CoP OPEX – Introducing A High-Efficiency Topsides Decontamination Model.....	882
<i>J. E. Eriksen, G. E. G. Duarte</i>	

THE REVOLUTION OF SUBSEA PROCESS AND BOOSTING IN OFFSHORE PROJECTS

50 years in 5 – Speeding Up Subsea Processing & Boosting (SP&B) Projects in Brazil.....	894
<i>G. C. Cerqueira, C. A. Patusco, H. P. Koelln, M. A. Roberto</i>	
Ormen Lange Gas Field – Fast-Track Innovation Enables Life Extension	911
<i>J. Almqvist, P. Solberg, S. -A. Marthinussen, A. S. Hagland, C. Vielliard, J. Brugman</i>	
Stones Artificial Lift System: Extending the Boundaries of Subsea Boosting	929
<i>A. Merlino, J. Abels, J. Overstreet, S. Henao, B. Dowdy, G. Pisarev, A. Lupeau</i>	

The Dense Gas Separator Industrial Journey.....	945
<i>E. Cardoso, C. Webb</i>	
Subsea Compression - Åsgard and Beyond.....	961
<i>P. E. Hedne, A. Mærli, T. K. Kjeldby</i>	
Modularization and Standardization of Subsea Components Applied to the Development of New Subsea Injection and Treatment System	989
<i>R. Dias, A. Dutra, A. Spinola, A. Carvalho</i>	
Cold Flow: New Operational Scheme	996
<i>Annie Fidel-Dufour, Cedric Chalaron</i>	
The Impact of Integrating Reservoir and Surface Facilities with Liquid-Liquid Subsea Separation Systems on Decision-Making in a Post-Salt Deepwater Heavy Oil Reservoir.....	1013
<i>Alireza Bigdeli, João Carlos von Hohendorff, Denis José Schiozer</i>	

ADVANCEMENT IN OFFSHORE INTEGRITY MANAGEMENT FOR PRODUCTION SYSTEMS

Using Field-Measured TLP Vortex-Induced Motion Data to Extend Service Lives of Aging SCRs.....	1036
<i>Santiago Zapata, Phil Ward, R. Colin Reid, Glenn Mediamolle</i>	
Wireless Ultrasonic Thickness Measurement Patches for Subsea Asset Integrity Monitoring.....	1053
<i>Junxiang Guo, Erik Fabre, Chenghuan Zhong, Matt Butcher, Eric Davidson, Daniel Chapman</i>	
Predicting Remaining Useful Life of Well Tubulars: A Reliability-Based Approach.....	1065
<i>L. P. Ribeiro Almeida, L. P. Gouveia, T. B. Silva, E. T. Lima Junior, J. P. Lima Santos, D. Colombo, V. de Melo Santanna, A. L. S. Abrego</i>	
Technological Initiative for Integrity and Reliability – Present and Future of Asset Integrity Management	1076
<i>R. W. Santos, J. Endress Ramos, M. Melo, L. Cerqueira Trovado</i>	
Artificial Intelligence as a Means to Automate Detection of Defects in Inspection of Hull Structures.....	1086
<i>E. Stensrud, G. Hamre, G. Løvoll, D. McKay, B. Raeissi, T. Richardsen, T. Skramstad, A. Torstensen</i>	
Live Sensor Based Risk Based Inspection Planning for Floating Offshore Structures	1095
<i>François-Xavier Sireta, Giles Brown, Frode Bratbak, Stefan Marion, Amine El Gharbaoui, Anja Siems</i>	
Advancements in Offshore Mooring Monitoring: A Case Study on the Prelude FLNG	1114
<i>Clare V. Thomas, Kanishka M. Jayasinghe, Cody R. Anderson, Dinith A. K. Waduge, Adrian C. Eassom, Mahdi Mirzaei</i>	
Pipeline Reliability and Integrity Solution Enterprise (PRAISE).....	1128
<i>R. H. Abbas, A. M. Mohsen, K. H. Alsinan</i>	

TECHNOLOGICAL ADVANCEMENTS IN MOORING SYSTEMS DESIGN, FAILURE DETECTIONS AND REPAIR CASE STUDIES

Innovative Unmooring Operations for Decommissioning FPSOs: Using Cutting of the Top Chain in Diverless Operation	1135
<i>R. F. Silva, R. A. Pons, L. N. P. Silva, B. A. L. Lima, Y. F. S. M. Correa, F. H. Viana, J. J. C. Junior</i>	
New Technology for the Mooring Failure Detection on Floaters	1153
<i>E. Auburtin, A. Ledoux, J-M. Cholley</i>	
Mooring Chain Breakage on GoM Platform	1169
<i>Øystein Gabrielsen, Duncan Brown, Lars Rønning</i>	
Bonga Mooring Top Chain Replacement Project – Lessons Learnt from Execution	1182
<i>Oluwasegun Wemimo, Adesina Balogun, Joseph Edwards, Shankar Bhat, Gbolagade Oguntola</i>	
Probability-Based Estimate of Cumulative Displacements at Pot Bearings for Floating Platforms.....	1190
<i>Q. Chen, W. Tein</i>	
Model Test and Simulations of Split Mooring System for Congo LNG Project	1199
<i>AJ Voogt, J van der Zanden, ZG Tian</i>	
Experimental Investigation on Station-Keeping Performance of Novel Passive Constant Tension Mooring Systems for Floating Wind Turbines	1212
<i>J. Wang, D. X. Liu, X. L. Tian, M. B. Zhao, H. N. Lv, Y. Dai, T. Peng</i>	
Intelligent Optimization Design of a Deepwater Semi-Submersible Platform Mooring System Based on Multi-Task Shared Neural Networks	1230
<i>Hong Zhu, Jin Yang, Qishuai Yin, Bingzhen Gao, Jiahao Li, Haocheng Ni, Shenghui Dai</i>	

METOCEAN ADVANCES

Calibration of Weather Dependent Mooring Line Tension Safety Factors	1244
<i>K. Ejdfors, K. Nilsen, T. Hørte</i>	
Response-Based Forecasting of Vessel Motion: From Physics-Based to Data-Driven Methods	1261
<i>I. A. Milne, L. C. Astfalck, M. Zed, J. Lee-Kopij</i>	
A Spatiotemporal Machine Learning Framework for the Prediction of Metocean Conditions in the Gulf of Mexico: Application to Loop Current and Loop Current Eddy Forecasting.....	1275
<i>E. C. C. Steele, M. C. R. Juniper, A. C. Pillai, I. G. C. Ashton, J. Chen, S. Jaramillo, L. Zarate</i>	
Estimating Numerical Model Skill and Representativeness of Kinematic Properties of the Loop Current System in the Gulf of Mexico	1287
<i>S. Odom, R. Arena, A. Schmidt, H. Nowak, L. Ivanov, J. Storie, R. Ramos, B. Magnell</i>	
Solitary Internal Wave Characterization Southeast of Trinidad and Tobago	1300
<i>R. Arena, L. Ivanov, A. Schmidt, R. Ramos, B. Magnell, C. Flores, J. B. Franqueville, R. Husson, C. Aurélien</i>	
Optimizing Offshore Operations: Automated Oil Spill Detection Via Secure Data Sharing.....	1312
<i>J. Røstad, M. F. Aarset</i>	

OFFSHORE WIND DESIGN CHALLENGES AND ADVANCEMENTS

Floating Offshore Wind Solutions for the U.S.: Leveraging European Experience from Floater and Mooring EPCI Perspective	1318
<i>Yongyan Wu, Peter Leitch, Erling Storaune, Erik Stormyr</i>	
Floating Offshore Wind Farm Array Optimization Considering Mooring Lines, Anchors, and Array Cables	1332
<i>L. Sirkis, M. Biglu, M. Hall, F. Moreno, S. Housner, E. Lozon</i>	
Machine Learning Applications in Vertical Offshore Wind Profile Estimation.....	1350
<i>E. Abolfazli, R. B. Smith, N. T. Signorelli</i>	
Dynamic 145 KV Cable with Aluminum Conductor for Floating Wind	1358
<i>O. Iversen, A. Johanson</i>	
Buoyant Tower: Experimental and Numerical Studies on Anti-Rotation Behavior of Suction Caisson Foundation	1370
<i>Pan Xujie, Su Lingyu, Liu Rui, Chen Weimin, Wang Ge</i>	
CFD Analysis of Pressure Variations on Airtight Platforms for Offshore Wind Turbines Monopile Foundation.....	1390
<i>S. Sarada, S. Xie, A. Gupta, A. Desai</i>	
Accidental Limit State Assessment of Cost-Effective Mooring Systems for Floating Offshore Wind	1403
<i>I Aryawan, P McEvoy, S Kim, S Clelland</i>	
Repurposing Offshore Infrastructure for Clean Energy (ROICE) vs. Decommissioning – Commercial Considerations	1423
<i>G. Legge, E. Hui, A. Thurlow, E. Keen, G. Nyamapfumba, R. Seetharam</i>	
Parametric Study on the Structural Behavior and Failure Mechanism of the Grouted Connections.....	1440
<i>A. Gupta, S. Sarada, A. Desai</i>	

EPOSTER LOUNGE PART I

Digital System of Self-Verification Sustainably Improves Safety Performance and Positively Shifts Safety Culture.....	1448
<i>Indira Ramjit-Prudent, Charisse Salim, Andrew Briggs, Lawrence Ramnath</i>	

VOLUME 3

A Novel Workflow for Interpretation of Single-Well Tracer Tests	1464
<i>Zihao Zhao, Yuhao Ou, Cunqi Jia, Kishore K. Mohanty</i>	
Innovative Wellbore Shielding Spacer Safely Pumped Across Narrow Area Accessories in Oilfield Cementing Operations	1482
<i>Wajid Ali, Ahmad Atef Hashmi, Faisal Abdullah Al Turki, Mouloud Bouaraki, Moathe Aljardan, Jonathan Pohl</i>	
Mental Health Monitoring and Management Program for Offshore Employees: Preflight Check-In.....	1498
<i>S. R. Fernanda, R. F. F. Josenildo, S. R. C. Jean</i>	

Multidimensional Evaluating First Offshore Shale Oil Play by Geomechanical, Petrophysical and Geological Integration, Beibu Gulf Basin, South China Sea..... 1507
Jinbo Wu, Yongde Gao, Bo Liu, Yongsheng Zhou, Mohammad A Chohan

Commercial Benefit on Riser Design Using High-Strength Steel..... 1528
Andre Ramiro Amorim, Fernanda Cristina de Moraes Takafuji, Peyman Asgari, Vincent Loentgen, Peter Tanscheit

ACTIVE ARENA: BIJUPIRA AND SALEMA - NAVIGATION DECOMMISSIONING AND ENVIRONMENTAL STEWARDSHIP

Green Recycling in Offshore Decommissioning: The Legacy of BJSA Field and Fluminense FPSO 1538
Richard Wincheski, Natalia Vianna, Troy Henson

Regulatory Aspects of Offshore Decommissioning: Bijupirá and Salema Project Case in Brazil 1559
Hanna Mattos, George Oliva, Silvia Schaffel

Environmental Management in Offshore Decommissioning: Lessons from FPSO Fluminense Sail Away in Bijupira-Salema..... 1572
Silvia Schaffel, Sebastião Cavallari, George Oliva, Liana Silva

Comprehensive Preparations for FPSO Disconnection: Ensuring Safe and Environmentally Responsible Decommissioning of BJSA Subsea Systems..... 1588
Bruno Tonin, Felipe Duncan, Fernando Guamá

Preparing the Fluminense FPSO for Safe Decommissioning and International Transit..... 1601
Ana Letícia Ciscotto, Thiago Duarte, Caio Bastos, Natalia Vianna

Recovering Aging Risers: Environmentally Responsible Disconnection of the Fluminense FPSO Risers and Umbilicals..... 1620
Graeme Steele, Rafael Pessurno, Ricardo Maneschy, Jessica Machado

Safe and Efficient Disconnection and Towing of the Fluminense FPSO 1638
Rafael Pessurno, Andrea Milesi, Graeme Steele, Ricardo Maneschy

Green Recycling of the Fluminense FPSO: Safe and Sustainable Decommissioning..... 1653
Thiago Duarte, Marcella Croes-Schalken

A NEW CLEAN ENERGY GAS HYDRATE AND ITS PRODUCTION TECHNOLOGY ADVANCES

International Gas Hydrate Research and Development 1669
T. S. Collett

Evaluating Gas Hydrate Production Methods and Field Development in the Krishna Godavari Basin: A Geophysical and Computational Approach..... 1694
R. Vivek, S. Ramesh, D. Gobichandru

Characterization of Gas Hydrate Deposits in Probable Sandy Facies and Its Related Depositional Processes, East Coast Deep Water Basin, India..... 1707
Jagannath Nanda, Sourav Bhardwaj, G Purushotham, Pratik Kumar, Udham Singh Yadav, U Chukkasseri

Geologic Controls on Gas Hydrate Accumulations and Associated Geohazards	1716
<i>Hugh Daigle, Anne Bécel, C. J. Grall, Nathaniel C. Miller, Wayne E. Baldwin, James Gibson, Ali Mohamed</i>	
Comparing High Saturation Hydrate-Bearing Sand Reservoirs in the Northern Gulf of Mexico	1729
<i>A. E. Cook, P. B. Flemings, C. Thomas, D. R. McConnell, M. Frye</i>	
The Geomechanical Behavior of Hydrate Reservoirs: Implications for Drilling and Production	1744
<i>Peter B. Flemings, Alejandro Cardona, Athma R. Bhandari, Kehua You</i>	
Numerical Study on the Impact of Deep-Water Shallow Gas Reservoir Production with Overlying Natural Gas Hydrate Layer on Wellhead Stability	1755
<i>Xun Zhang, Jin Yang, Jingxuan Tang, Yuqi Zhai, Hongyu Wan, Xinye Yan, Juyan Zhang</i>	

ENHANCING OFFSHORE PRODUCTION: NEW APPROACHES TO FLOW ASSURANCE, CORROSION, AND SCALE CONTROL

Downhole Corrosion and Flow Assurance Management; A Proactive and Sustainable Approach in Maintaining Integral Offshore Wells and Minimizing Production Loss.....	1769
<i>S. Alriyami, K. Al Azizi, N. Odeh, K. Alhammadi, K. R. Aldhaheeri, A. Al Shamsi, F. Almheiri, Y. AlHammadi</i>	
Green Surfactants for Offshore Applications.....	1784
<i>A. I. Assem, J. R. Stewart-Ayala, Marc Hornick, K. Lant</i>	
Ensuring Precise Flow Control: Optimized Multiturn-Actuation for Low-Power Applications	1799
<i>M. Kubacki, E. Pfeifroth, G. Hendrix, J. P. Duarte da Silva, C. Hansli</i>	
Unblocking Flow Assurance and Transport Uncertainties in Oil Wells with High Sand Production with Dynamic Simulation.....	1808
<i>S. Murillo, V. Santamaria, H. Quevedo, J. Barrero, J. Peñaloza, E. Jimenez, E. Gomez, Chun Ka Kwok</i>	

ATLANTA FIELD DEVELOPMENT - THE COMPLETE HISTORY ON DRILLING, COMPLETION, PRODUCTION AND RESERVOIR MANAGEMENT

An Innovative and Successful Subsea Approach for BS-4 Atlanta Field Development.....	1823
<i>M. B. Oliveira, F. Liborio, V. Pereira</i>	
Managing Through an Innovative Vision	1856
<i>Luiz Augusto Pinheiro, Carlos Mastrangelo, Ricardo Abi Ramia, Patricia Porsche, Vinicius Passos, Rudimar Lorenzatto</i>	
De-Risking a Heavy Oil Project Development Through an Early Production System.....	1866
<i>Fernando Valadão, Josiane Gagno, Ivan Rongel</i>	
Atlanta Field: Lessons Learned with Tracers and Other Reservoir Management Technics.....	1877
<i>I. Ferreira, W. Petrone, M. Guerrico, V. Guimaraes</i>	
Unlocking the Value of Standardized Approach on Atlanta Wells Drilling and Completion.....	1893
<i>J. Salies, W. Costa, R. Aguiar, D. Batista, T. Dos Santos, A. Migoranço, C. Pedroso, F. Liborio, G. Gualtero, R. Ayres, L. Gloria, L. Cae, R. R. Macedo</i>	
Reliability and Predictability Matters: Atlanta SPS and SURF as a Whole	1916
<i>M. B. Oliveira, F. Ferreira, C. Tadeu</i>	

Efficient FPSO Redeployment	1937
<i>H. S. Cerqueira, R. Portella, M. E. Pessoa, J. Bronneberg, B. Elshout</i>	
Atlanta Field and Beyond.....	1945
<i>V. Passos, M. E. Pessoa, M. Oliveira, H. S. Cerqueira</i>	
ESG Management Focus on Lower FPSO Carbon Footprint.....	1954
<i>R. L. Kiperman, G. Marins, H. S. Cerqueira, E. Talberg</i>	
Successful Infrastructure-Led Exploration Case: Atlanta Oilfield Ring Fence, BS-4 Concession, Post-Salt Play, Santos Basin	1961
<i>L. M. Felix, L. K. C. Medeiros, M. P. Ferreira, A. Kronbauer, A. Pellon, W. M. Lupinacci, N.C. Azambuja, H. Rosa, A.B. Bahlis, C. E. Souza Cruz</i>	

CONGO LNG PROJECT: WELCOMING A NEW FRONTIER IN LNG EXPORTING WORLD

World's First Ever LNG FSU Tank Visit Extension with Sloshing Virtual Sensor.....	1972
<i>T. Clement, F. Ouvrard, F. Van Nuffel</i>	
World's First Fast-Track Integration of Vessels with Spread Mooring System for LNG Operations	1982
<i>Keyur Louis Athaide, Nitesh Tuteja, Roydan Avinash Menezes, Janarthanan L. Kanthan</i>	
Congo LNG – Creating a New Fast Track Offshore LNG Terminal Re-Utilizing Existing Assets	1993
<i>F. Van Nuffel, O. Dasilva, K. Van Lookeren, M. Krekel</i>	
Classification of a Fast-Track Multi-Body Shared Mooring FLNG Terminal.....	2009
<i>P. Anquetin, P. Chaleat, J. Esteve, C. J. Frélaut, F. Migeon</i>	
Split Mooring System Solution for the Congo FLNG Terminal.....	2021
<i>Sean Bian, He Yang, ZG. Tian, Aimin Wang, Otto Dasilva</i>	
Enabling Shipyard Delivery Through Project and Organizational Strategic Management	2033
<i>T. Mackey, M. Murphy</i>	
Strategic Structural Design and Refurbishment for Mooring and Ship-To-Ship Connector Foundations at a Nearshore LNG Terminal.....	2044
<i>J Wang, A Wang, O DaSilva</i>	
Strategies for Sustainable Development. The Role of Eco Innovation and Renewable Investment in Nigeria Offshore Petroleum Industry	2063
<i>Humphrey Otombosoba Oruwari, Ollor Abee Ejire, Hassannah Salami</i>	
Development of LNG in Sub Saharan Africa: Challenges, Growth and Opportunities.....	2071
<i>Humphrey Otombosoba Oruwari, Ollor Abee Ejire, Hassannah Salami</i>	

ENERGY TRANSITION, HYDROGEN AND RENEWABLE ENERGY - INNOVATIVE DATA SHARING AND MODELING TECHNIQUES

A Modular Design of Green Hydrogen Production Systems Using Offshore Wind Energy and its Economic Evaluation.....	2084
<i>V. N. Le, K. P. Shukla, S. Shashikant</i>	
Green Fuel on the Seas: Frameworks for Future Production.....	2093
<i>J. Segovia, Q. Choudhury, J. Wang, M. Kei, Y. Seo, J. Kim, E. Park, S. Han</i>	

Underground Gas Storage Digital Twin for Depleted Reservoirs Based on Mechanistic Models and Digital Technologies.....	2102
<i>B. Wang, T. Liu, H. Liu, M. Ouyang, G. Guo, B. Wang, Y. Pan, C. Yue, U. Gogoi, A. Ravoof, Q. Yan, X. Cai</i>	

HPHT AND ENERGY TRANSITION

Decarbonizing Offshore Power Delivery Through Rechargeable Subsea Battery Packs	2122
<i>R. Knox, G. Robertson, C. Wallace</i>	
Evaluating Thermal Stability of Geopolymers and Other Common Cement Formulations in Geothermal and Other HPHT Operations.....	2130
<i>J. J. Abraham, C. Devers, C. Teodoriu, M. Amani, M. AlMujalhem</i>	
Exploring the Application and Impact of Islanded Ocean Energy Systems for the Provision of Renewable Power and Communications for All-Electric Subsea Assets.....	2143
<i>R. Slater, M. Coseglio, I. Crossland, A. Caio, A. Crossland</i>	
Operationalizing the Energy Transition Through American Petroleum Institute Standards.....	2159
<i>P. D. Watkins, D. L. Miller, J. N. Roueche, J. Strickler</i>	
Subsea Substations - Leveraging Existing Technology to Reduce Costs of Offshore Wind	2169
<i>A. Vilstrup, A. M. Askeland, M. Almgren, P. Solberg, E. O. Eikeland, A. S. Hagland, M. Nordveen, F. Marra, A. Lange</i>	

VOLUME 4

Advancing Subsea Storage Solutions for the Energy Transition	2186
<i>J. V. Lund</i>	
Electrifying Subsea Infrastructure Through Ocean-Powered Systems.....	2198
<i>E. Hammagren, A. R. Lesemann</i>	
Are Next-Generation Batteries Ready for Marine and Offshore Electrification? A Safety Perspective.....	2208
<i>Dhananjay R. Swamy, Md. Tanjin Amin, Mejdi Kammoun, Denny Raymond, Jude Tomdio, Jin Wang, Harini Gunda, Sreeram Vaddiraju, Faisal Khan</i>	

PIONEERING OFFSHORE CCUS: TECHNOLOGIES AND CASE STUDIES

RTP Resistance to Rapid Crack Propagation in CO ₂ Pipelines	2223
<i>D. Vehlow, L. Yu, P. Cunha, C. Denowh</i>	
Formulation of Liquid-Liquid and Solid-Liquid Nanodispersions for CO ₂ Capture.....	2238
<i>J. Delgado-Linares, A. M. Forgiarini, O. Greener, F. Salazar-Rodriguez, Z. Adkins, T. Pernalet, A. Cordero, N. Tanaka, K. Yokoyama, C. A. Koh</i>	
Saline Aquifers Unlocking Brazilian Carbon Storage Pathways.....	2251
<i>R. M. Avila, E. Loureiro, A. Szklo, L. Furtado</i>	
Effect of Impurities Present in the CO ₂ Stream on Injectivity and Seal Performance in Carbon Capture and Storage	2261
<i>Benjamin Harrell, Yani C. Araujo de Itriago, Guadalupe Herrera</i>	

Modelling Water Drop Out in CO ₂ Networks.....	2276
<i>D. Erickson, D. Golczynski, G. Metcalf</i>	
An Environment-Friendly Biomass Nanomaterial for CO ₂ Enhanced Oil Recovery and Carbon Storage in Low-Permeability Oil Reservoirs.....	2293
<i>Zesen Peng, Yueliang Liu, Zhiqiang Mao, Zhenhua Rui, Hanchi Zheng, Dong Chen</i>	
Unlocking CO ₂ Injection in Depleted Reservoirs: A Flow Assurance Modeling Approach for Carbon Capture and Storage.....	2307
<i>P. Charoensuk, C. Kokanutranoont, S. Theinkaew, G. Kositchaiwat, K. Vattanapornpirom, P. Konganuntragul, P. Kijkla</i>	

ADVANCEMENTS AND LESSONS LEARNED IN OFFSHORE PIPELINE SYSTEMS

Prepared for the Unplanned – Subsea Pipeline Tie-Ins and Repairs by Remote Controlled Robotic Welding	2320
<i>J. O. Berge, K. E. Apeland, M. Armstrong</i>	
Mitigating Corrosion in CO ₂ Pipelines: Transitioning from Carbon Steel to CRA Mechanically Lined Pipes for Enhanced Safety and Efficiency	2337
<i>Ahmed Reda, Tiago Kaspary, Ali Karrech, Syed Elwi Alsagof, Paul Montague</i>	
Third-Party Validation of a Protocol to Qualify the Performance of Materials for Subsea Pipelines Transporting Hydrogen.....	2359
<i>G. Arcangeletti, E. Aloigi, A. Santicchia, E. Torselletti, D. Scarsciafratte, L.F Di Vito</i>	
Non-Destructive Examination and Engineering Critical Assessment for Reeled Mechanically Lined Pipe.....	2371
<i>T. Tkaczyk, A. Soulantzos, N. Da Costa Pepe, A. Pepin</i>	
RapidPipe Technology: Revolutionizing Offshore Pipeline Installation with Enhanced Efficiency, Safety, and Sustainability	2388
<i>Ahmed Reda, Stephen Vorley, Tiago Kaspary, Paul Montague, Darren O'Leary, Reyliina Garcia</i>	
Optimizing the Design of Subsea Rigid Pipelines in Ultra-Deep Waters of the Brazilian Pre-Salt, Through Full-Scale Axial Pipe-Soil Interaction Tests	2406
<i>C. O. Cardoso, J. Gomes, R. D. Lopes, V. Assis, P. D. G. Orlando</i>	
Life Extension of Corroded Pipelines, a Sustainable Solution	2428
<i>Saif Ahmed Alshhehi, Mohamed Abdul Hameed Alhammadi, Nayef Salem Alshhehi, Sultan Alowaid, Mohamed Ehasham Alam, Khaled Alhosani</i>	
Improving the Free Span Analysis of Subsea Rigid Pipelines for Life Extension Through Integration and Automation and Efficiency.....	2442
<i>R. R. Martins, C. O. Cardoso, C. G. C. Matt, L. A. N. Nunes, R. C. O. Góes, A. S. Rosa, E. S. S. Silveira</i>	

EXPLORING THE VALUE OF REPURPOSING EXISTING OFFSHORE INFRASTRUCTURE

Hydrogen-Battery Hybrid Energy System on Repurposed Offshore Platforms for Efficient Clean-Energy Transition	2462
<i>Shivanshu Shekhar, Harish Sarma Krishnamoorthy, Kaushik Rajashekara, Ram Seetharam</i>	

Assessing the Potential of Subsurface Offshore Resources for Geothermal Energy Production, Carbon Dioxide Storage, and Hydrogen Storage.....	2474
<i>A. O. Badejo, N. M. Angelina, A. Isah, T. Elsayed, E. R. Okoroafor</i>	
Slim Hole Drilling: Bridging the Gap Between Oil and Gas Demand and a Sustainable Energy Future	2499
<i>D. Funes, M. Lallemand, M. Shaikh</i>	
The Future of Wellbore Intercept Technology: Adhering to the Strictest Environmental and Economic Standards in Complex Well Abandonments	2518
<i>G. Rassadkin, C. J. Moss</i>	
Repurposing Abandoned Offshore Oil Wells for Geothermal Energy by Numerical Analyses.....	2533
<i>Lihua Zuo, Ning Luo</i>	
Guiding the Transition: A Conceptual Framework for Offshore Green Hydrogen Production on Oil and Gas Platforms	2544
<i>Ibrahim Muritala, Jane-Frances Igbadumhe, Melike Dilek, Onur Semiz, Luiz Feijo</i>	

MARINE MINING - NEW TECHNOLOGIES AND PROGRAMS MAKING IT HAPPEN

Polymetallic Nodule Detection Using Hull-Mounted 30 Kilohertz Multibeam Data Analysis	2561
<i>Mark E. Mussett, Max Kaufmann, Tracey A. Conrad</i>	
Full Mission Bridge Simulations of Bulk Carrier Approach for Unsheltered Offshore Transshipment of Polymetallic Nodules.....	2575
<i>A. Barr, M. Taha, S. Flamen, J. Heiler</i>	
Challenges in Massive Sulfide Deposit Exploration Using a Seabed Drill Rig for Mineral Core Sampling.....	2587
<i>S. Wegerer, M. Semel</i>	
How Impossible Metals' Next-Gen Technology will Drive Sustainable and Responsible Deep-Sea Critical Minerals Collection	2594
<i>Oliver Gunasekara</i>	

REVOLUTIONIZING OFFSHORE ENERGY: BUILDING STANDARDIZATION STRATEGIES FOR EMERGING ENERGY TECHNOLOGIES

Customizing Drilling Engineering in Geothermal Drilling Campaign, by Utilizing Standard-Temperature-Rated Tools and Achieving High Operating Efficiency, a Case from Indonesia Major Geothermal Field Dieng-Patuha	2604
<i>Thewa Christyananta, Vinda Manurung, David Munoz, Yessica Fransisca, Ingria Yunandra, Marzuki Nyakmat, Budi Setiawan, Zakki Sabiq, Eka D. Samudra</i>	
Bi-Directional, Dissolvable Plugged Nozzles, Designed to Maintain Mechanical Integrity for 15-Hours in 10.6 Ppg Brine, Subsequently Surviving a Min of 10 Hours in Low Ph Breaker-Fluids.....	2616
<i>Ting Roy, Kamel Ben Naceur, Yoshihiko Koyanagi, Mari Takahashi, Anil Singh, Indranil Roy</i>	
Fugitive Emissions Estimation and Quantification According OGMP 2.0 Standard.....	2623
<i>E. Di Martino, M. Gasperi, A. Lo Nigro, C. Valentini</i>	
Methane Airborne Detection Service: A Comprehensive Solution for Methane Emissions Management	2632
<i>Joseph Gomes, Jean-Philippe Gagnon, Frédérick Marcotte, Martin Chamberland</i>	

Bridging Global Standards and Local Expertise: A New Era in Safety and Competence	2640
<i>G. Doran</i>	
Subsea All-Electric X-Tree Standardization: Options and Opportunities for Scenarios of Wide Diversity	2648
<i>E. J. de Jesus Coelho, A. Rabello, D. Pozzani, E. P. Seraco, M. H. da Silva Mashiba, R. V. Beppler</i>	
Simplifying Project Management Through Standardization and Replication	2666
<i>A. Okeudo, A. Adegoke, Judith George</i>	

OFFSHORE FLOW ASSURANCE TECHNOLOGIES

Hydrate Reformation Characteristics in Offshore Natural Gas Hydrate Reservoir Using the Horizontal Well Depressurization Production	2674
<i>Jianbo Zhang, Xiaobao Liu, Jiazheng Luo, Xiaohui Sun, Jie Zhong, Zhiyuan Wang, Weian Huang, Baojiang Sun, Xiao Wang</i>	
Controlling Joule-Thomson Cooling in Wellhead Equipment in Subsea CO ₂ Injection Wells.....	2688
<i>M. Nazeri, M. Blowers, M. T. Hoang, A. Marshall, K. Randhawa</i>	
Flexible Coiled Tubing Implementation for Subsea Hydrate Remediation – Campos Basin Field Application	2707
<i>A. Rocha, K. Gardiner, M. D. Bezerra, R. D. Rosa, A. A. S. Garcia, M. A. Pasqualette, F. T. T. de Almeida</i>	
Well Testing in New Frontiers: Lessons Learned and Best Practices from an Ultra-Deepwater Well Testing Campaign in Namibia	2716
<i>V. Jaffrezic, M. Larrere, C. McDougall, S. Garg, Y. Shumakov, G. Kouam, V. Pequignot, B. Theuveny</i>	
The Synergistic Effects of Ultrasonic Acoustic Cavitation with Chemical Dissolvers on Calcium Sulfate Scale Dissolution.....	2742
<i>C. Canciani, G. Alaseri, A. Alguydi, F. Alissa</i>	
Probabilistic Assisted History Matching Approach for Production Prediction and Flow Assurance Assessment	2750
<i>G. G. Ribeiro, C. Vasconcelos Barreto, A. Andrade Alves, E. Hayashi, V. Girardi Silva, D. Braga, J. Trujillo, G. Bassani</i>	
Experimental Validation of a Multiphysics Model for a Cold Flow Unit.....	2759
<i>T. K. Oishi, T. S. A. da Silva, M. Kvernland</i>	

GEOSCIENCES AND ENGINEERING RESERVOIR CHARACTERIZATION

Experiences with 4D Seismic in Campos and Santos Basins and the Road Ahead.....	2771
<i>C. J. Silva, F. B. Nascimento, W. L. Filho, M. H. Grochau, M. G. B. Izeli, H. M. Giro, R. G. Lima, D. C. Garcia</i>	
Innovative Integration of Geological Concepts in Dynamic Model History Matching for a Complex Offshore Carbonate Reservoir in Abu Dhabi, UAE.....	2781
<i>U. Farooq, M. E. Gohary, S. S. Aldaheri, W. A. Alkatheeri, H. Montani</i>	

Advancing CO ₂ Gas/oil Injection at Different IFT Assessment in Carbonated Reservoir through Innovated Gas Injection Design	2792
<i>M. Alshuaibi, S. Farzaneh, M. Sohrabi</i>	
Drill-Hub: AI-Driven Optimization of Future Drilling Centers Planning in Giant Offshore Fields Abu Dhabi	2815
<i>R. Salimov, B. Jaffres, M. Al Hosani, E. Draoui, A. Abdelrahman, F. Alzaabi, H. Al Kuwaiti, J. Alvarez</i>	
Cost Effective Reservoir Management Through the Application of Multilateral Technology	2824
<i>M. Kelsey, T. Fanchin, M. Janzen, A. Salah., A. Hamid</i>	
Unlocking the Power of Parallel Computing and Integrated Asset Modeling with a High-Resolution Reservoir Simulator for Informed Decision-Making in Gas Field Management	2831
<i>O. Orozco, C. H. Nino, L. D. T. Ortegon, S. H. Khor, J. M. Olan, D. M. Cruz</i>	
Numerical Simulation of Conductor Stability in Deepwater Hydrate-Bearing Formation.....	2855
<i>Q. S. Yin, J. X. Tang, X. Zhang, J. Yang, M. Luo, X. Y. Yan, Z. L. Wen</i>	
Innovative Method for Analyzing Inter-Well Connectivity with Continuous Wavelet Transform	2874
<i>Mohamed Adel Gabry, Amr Ramadan, Mohamed Y. Soliman</i>	

ADVANCED SITE CHARACTERIZATION FOR FIXED AND FLOATING OFFSHORE WIND: NAVIGATING SHALLOW TO DEEP WATERS

Unveiling the Seafloor and Shallow Subsurface: A Novel Integrated Approach to Offshore Site Characterization.....	2890
<i>D. Orange, C. Jones</i>	

VOLUME 5

Deep Learning Application of Geotechnical Property Characterization for US Atlantic Outer Continental Shelf Soils.....	2907
<i>X. Long, Z. Zhang, S. Adhikari, A. Broughton, Y. Sanchez-Hernandez, J. Fraser, S. Kaur, D. Hargrave</i>	
Decision-Making Framework for Marine Anchor Selection in Floating Offshore Wind Farms	2920
<i>J. Lee, S. Qin, K. Coughlan, C. P. Aubeny</i>	
Synthesis of Technology Gaps and Research Priorities in Offshore Wind Developments for Monitoring Birds and Marine Mammals	2934
<i>H. Etter, M. McManus, S. Courbis</i>	
Assessment of Early Detection Methods of Derelict Fishing Gear Entanglement in Mooring Systems.....	2947
<i>W. P. Walker, M. J. Stahl, D. R. Maniar</i>	
Navigating Offshore Wind Technology: From Fixed-Bottom to Floating Systems	2965
<i>Sherif El-Gharbawy</i>	

EPOSTER LOUNGE PART II

Machine and Systems for Identifying Wells Priority for Corrosion Log Utilizing Machine Learning Model	2986
<i>Ahmed S. Al-Qahtani, Abdulrahman T. Mishkhes, Mohammed A. Alameer, Sammer A. Alomair, Abdulaziz A. Sultan</i>	
Developing a Machine Learning Application for Well Production Forecasting in Frequently Changing Operating Conditions	2994
<i>K. Gaurav</i>	
Optimizing Offshore Operations: Integrating Machine Learning with Vessel Motion Based Criteria for Accurate and Efficient Operability Assessments	3005
<i>P. S. Indrevoll, H. S. Sjøvaag, A. Cetin, C. Nilsen-Aas, R. Gueret</i>	
Drill Ship Red Zone Exposure Reduced Through Use of Industrial Robotics	3019
<i>John Martin</i>	
Offshore Facility Evacuation – The North Sea's Transition	3026
<i>M. Keys, M. Manzocchi, A. Proietto</i>	
Optimizing Offshore Asset Management: Strain and Motion Monitoring for Steel Catenary Risers.....	3033
<i>Torbjørn Amundsen, Åge Grønningsæter, Harald Holden</i>	
Robotic Untethered Sidewall Coring Tool.....	3041
<i>L. S. Duthie, M. S. Dabbous, A. F. Al-Anazi, K. S. Yateem</i>	

OPTIMIZING OFFSHORE AND ENERGY PROJECTS: FROM PREDICTIVE MODELLING AND ECONOMIC ASSESSMENTS TO RISK MANAGEMENT AND AI INTEGRATION

Predictive Model for FPSO Topsides Weight: A Data Science Case Applied to Surface Facilities.....	3055
<i>T. A. Jambeiro, D. D. Fonseca, M. Katekawa, R. Nassur, M. Gomes Benfica, C. Rocha, I. S. Carvalho, V. Santos, G. R. Mafra, A. De Sosa Lima</i>	
Optimization Strategy of Marjan Offshore Complex: A Roadmap from FEED to Final Design.....	3063
<i>N. Palakal, A. AlShaye, J. Boksmati, B. Bohara, R. Khodr, S. Parvez, A. Albahrani</i>	
Enhancing Asset Profitability with Flexibility for Life Cycle Field Development – A Comparative Study for Well Placement Allocation and Platform Capacity	3073
<i>F. R. Branco, V. E. Botechia, D. J. Schiozer</i>	
Project Management: From Individual Control to the World of AI.....	3093
<i>M. C. de Barros, K. V. Brembatti, J. M. R. Neto, T. L. Ferreira, R. S. D. Figueiredo</i>	
Leveraging the Power of Probabilistic Modelling to Forecast Petroleum Production Using Well Performance.....	3102
<i>F. Ghanduri, A. Akham, C. Santiago</i>	
Technical and Economic Assessment of Integrating Biomethane Production with the Natural Gas Supply Chain	3118
<i>B. Nunes de Oliveira, G. Silva, G. Nascimento da Silva, H. Ramos, H. Esteves, H. Rangel, L. Barbosa da Silva, M. Alfradique</i>	

PLANNING, DESIGN AND MANAGEMENT OF FLOW ASSURANCE FOR OFFSHORE DEVELOPMENT

Continuous Realtime Asphaltene Monitoring and Surveillance in Gulf of Mexico Deepwater Production	3134
<i>Y. Kapoor, J. Lovell, K. Muth, E. Hensel, B. Highsmith, O. Kulbrandstad</i>	
Gas Hydrates Simulation in Flow Assurance: A Perspective on Current Tools and Advancement Toward a Unified Solution	3148
<i>L. F. R. Dalla, L. E. Zerpa, C. A. Koh</i>	
Optimizing Hydrate Inhibitor Consumption for WAG Injector Wells	3164
<i>H. Veiga, B. Desseignet, A. Descousse, R. Ellouz, M. Torelli, M. Bourgeois</i>	
How Drag Reducer Agents Can Enhance Gas and Condensate Production?	3173
<i>P. Dreno, R. Arnault, N. Lesage, C. Drouilly</i>	
Demonstrating the Value of Transient Well Flow Modeling in Achieving Successful Well Start-Up	3189
<i>A. Descousse, C. G. Quintero, H. Veiga, J. Hastings, A. Kilic, L. F. Babayeva</i>	
Scale Inhibitors Case Study for Drastic Temperature and Salinity Conditions	3197
<i>D. A. Maffra, G. Andrade, Y. Queiros, E. Mavredaki, L. Goncalves</i>	
Resolving Operational Challenges of a MEG System	3207
<i>S. Baraka-Lokmane, M. Seiersten</i>	

APPLICATION OF FLEXIBLE PIPE TECHNOLOGY FOR OFFSHORE ENERGY DEVELOPMENT

Novel Electromagnetic-Based NDT Inspection for Detecting Tensile Armor Wire Ruptures in Flexible Pipes	3225
<i>F. Goettems, C. Fernandes, E. Schneider, F. Wallauer, F. Bertoni</i>	
Fitness for Service of Flexible Pipes After Long-Term Subsea Storage Full of Seawater	3235
<i>A. B. Custódio, A. S. Cordeiro, L. R. S. Ferreira</i>	
Addressing Horizontal Movements and Trenching at the Seabed of a Flexible Riser Through Advanced Sensor Integration and Dynamic Modeling	3244
<i>E. Steen-Johnsen, S. Brurås, A. Å. Pedersen</i>	
Selection and Validation of Flexible Riser Inspection Method	3267
<i>R. C. Reid, G. Mediamolle, Y. Ruocco, D. Vadel, C. Gosse, A. Vagata, A. Surowiec Morgan</i>	
Development of NDT Inspection Tool for Subsea Non-Insulated Flexible Pipes to Support SCC-CO2 Integrity Management for Brazilian Deep Offshore Application	3277
<i>Aymê Assis, Andreas Boenisch, Cesar Boynard, Guilherme Vale, Konrad Reber</i>	
Implementation of a Multi-Technology Approach for Flexible Risers' Inspection - Improving Effectiveness and Efficiency	3286
<i>A. Vagata, J. Lilley</i>	
Advanced Simulation-Based Design Exploration and Optimization for Challenging Flexible Flowline Loading Impacts on Various Subsea Connection Systems	3300
<i>C. Noronha, S. Kamath, J. Roberts, M. Lee, M. Coultrip</i>	

Smart End Fitting for Flexible Pipes	3309
<i>L. A. Geusti, F. Wallauer, F. Bertoni, F. Goettems, A. Gallina</i>	

RESERVOIR ENGINEERING - SUCCESSFUL CASE STUDIES FOR MAXIMIZING PRODUCTION

Gaining Understanding Through Hydrogen Sulfide (H ₂ S) Sampling: A Review of Experiences and Optimal Approaches from Malaysia.....	3318
<i>N. Hademi, S. Daungkaew, J. El-Khoury, D. Ling, C. Liu, P. Gopalan, M. Htun, S. Wattanachai, A. Raouf, K. Ling, V. Vevakanandan, H. Lee, K. Chong, S. Kho, T. Worawutthichanyakul, M. Hamdan</i>	
Solids Laden Divalent-Based Drill-In Fluid Development for Pre-Salt Reservoirs Off-Shore Brazil	3337
<i>A. Shepherd, G. Pietrangeli, L. Da Rocha, J. Ferreira, D. Hugonin, A. Andrade</i>	
Integrated Formation Evaluation and Testing Techniques for Ultra-Tight Reservoirs	3355
<i>N. Hademi, S. Daungkaew, C. Cavalleri, A. Gisolf, G. Garcia, M. O'Keefe, P. Gopalan, T. Khunaworawet, D. Ling, H. Andic, E. Deger, H. Chen, R. Nandakumal, S. Ting, C. Liu, S. F. Zulkipli, S. Kumar, K. Salleh, M. Abu Talib, N. Sultanov</i>	
Assessing Sand Production Risks: A Sensitivity Analysis Using Analytical Models	3378
<i>S. Nguyen, M. Y. Soliman, M. Myers</i>	
BR-Loop: Bridging the Gap Between Geosciences and Reservoir Engineering	3394
<i>H. A. Cotrim, E. B. Luz, L. B de Onofre, R. de O. da Silva, R. P. Gaspar, A. A. Emerick</i>	
Thermal Degradation During Polymer Flooding of Giant Oil Fields	3408
<i>A. A. Alsaleh, A. H. Muggeridge, M. J. Blunt</i>	
Reservoir Protection and Filtrate Invasion: Insights from Wireline Formation Testing of Different Mud Systems	3429
<i>Guodong Zhang, Yuchun He, Zhaoya Fan, Bei Gao, Bonan Ren, Rao Guang, Zun Sheng Phang, Jun Sun, Hongwei Zhang, Jierui Wei, Ashraf Hussein, Mohammed A. Moniem</i>	
Geochemical Investigation of Surfactant-Polymer Flooding in Carbonate Under Harsh Conditions	3446
<i>Mursal Zeynalli, Emad W. Al-Shalabi, Waleed AlAmeri, Muhammad S. Kamal, Shirish Patil</i>	

OPERATIONAL DIGITAL TWINS: CREATION AND APPLICATION

Point Cloud Instance Segmentation for Reducing Effort in Oil and Gas Digital Twin Construction	3469
<i>P. S. Freitas, W. Gavião Neto, V. C. Nardelli, C. Porto, A. Harrison, M. Sidahmed</i>	
Establishing Credibility: Verification and Validation of Digital Twins	3481
<i>E. VanDerHorn, B. Corbett, A. Costa</i>	
Data Management for Digital Twin in Large Capital EPCI Project	3503
<i>Wayne Chen, Seemesh Pillai, Rei Yasumuro, Neil Cataag, Kuan Yuen Quek</i>	
Using Flowline Digital Twin to Plan for Inspections and Remediation	3512
<i>R. C. Reid, G. Mediamolle, Y. Ruocco, A. Grimes, D. Vadel</i>	
20/20 Vision of Your Operations – Creating an Operational Twin of Completions Operations	3521
<i>T. Thomas, Y. Zhou, R. Fairley, T. Boyd, A. Segovia, K. Scherer, K. Fatheree</i>	

Look Ahead: Optimization of Well Operations Using Real Time Digital Twin for Well Integrity	3542
<i>P. E. Aranha, C. O. De Souza, L. F. Ferrarezi, F. Valore, F. L. De Oliveira, M.V. dos Santos, C. N. Donatti, H. U. S. Mendes, J. P. N. de Araújo, S. L. Souza Neto</i>	

INNOVATIVE DESIGNS AND ADVANCED TECHNOLOGIES IN RISER AND UMBILICAL SYSTEMS

Critical Engineering Aspects for Qualification of the Titanium Pull-In Tube as a New Diverless Technology for Rigid Risers	3561
<i>F. M. Ferreira, M. T. Paes, F. F. Ramos Neto, L. L. Aguiar, S. D. Franco, L. Da Rocha Magalhães, J. O. De Moraes</i>	
Comparative Study for a Dropped Riser Simulation Using Two Commercial Finite Element Analysis Software.....	3574
<i>Kevin Man, Fengjie Yin, Bin Yue</i>	
An Innovative Deepwater Umbilical VIV Analysis Method Incorporating Current Directionality	3587
<i>C. Bao, R. Haakonsen, K. Doynov, H. Wang, V. Vijayaraghavan</i>	
Feasibility Assessment of Lazy Wave Risers in Wet Storage: A Proposal for a Robust and Safe Design in Ultra-Deepwater Field.....	3599
<i>Diego Garcia Barroso, Felipe Oliveira Ribeiro, Mohammad Mobasheramini</i>	

GLOBAL INNOVATIONS IN DRILLING: ADVANCING PRACTICES SHAPING THE WELLS OF TOMORROW

A Novel Taring Method for Accurate Determination of BOP Motion Sensor Installation Offset	3613
<i>V. Kjørstad, V. Martinsen, H. Holden, A. Cetin, R. Rossi</i>	
TOT-3P Design: Technical Fluid Solutions for Producing and Injecting Wells.....	3624
<i>L. C. M. Geraci, K. A. Gonzaga, F. C. Cruz, A. M. Vianna, E. A. Sousa</i>	

VOLUME 6

World First Digital Shaker Surveillance Using Computer Vision Technology on a Deepwater Rig.....	3639
<i>C. Holt, P. Patti, S. Haiz</i>	
Enhancing Offshore Drilling Safety: Identification and Integration of Leading Indicators for Loss of Offshore Well Control	3649
<i>Chen Wei, Yuanhang Chen, Oscar Gabaldon, Omar Montes, Pradeep Ashok, Michael Yi, Jyotsna Sharma</i>	
Lessons Learned from the Atlanta Field Third Drilling Campaign	3671
<i>R. R. Macedo, R. C. Aguiar, W. A. Costa, C. A. Pedroso, M. G. Souza, J. Salies, L. Sanchez</i>	
Deepwater Automated Drilling Control Implementation	3685
<i>A. A. Fernandes, G. S. Felipe</i>	
Pressure Gradient Controversial Calculation and Drilling Mud Profile Challenges, Case Histories Worldwide	3693
<i>Selim S. Shaker</i>	

ENABLING SUBSEA RESIDENCY THROUGH TECHNOLOGIES FOR SMART CHARGING, RFID APPLICATIONS, AND ENHANCED NAVIGATION

Underwater RFID Applications for Agile, Accurate and Safe Identification of Subsea Pipelines and Equipment	3701
<i>M. Brack, C. de S. Lima, R. C. Ribeiro, M. A. de Souza, V. R. D. Carneiro, G. D. Colvero</i>	
Enabling Resident AUV and ROV Subsea Operations: The Role of Wireless Inductive Charging and Docking Stations.....	3711
<i>T. J. J. Meyer, H. Mubasier, K. T. Humborstad, H. S. Eide, A. Vasiljevic, J. C. Torvestad</i>	
The Final Method to Sort Out Underwater Drones Classification Problem	3732
<i>G. Massari, F. Cavallini, G. Zornetta, C. Marras, J. C. Torvestad</i>	
A Mobile Platform for AI-Powered Underwater Image Processing	3745
<i>Chenyu Zhou, Lily Walker, Xin Fu, Jiefu Chen, Yueqin Huang, Xuqing Wu</i>	

ADVANCED MATERIALS FOR SUSTAINABLE OFFSHORE TECHNOLOGIES AND TO ENABLE CLEAN ENERGY TRANSITION

Enhancing Antifouling Strategies with Ultrasonic Treatment and Acoustic Metamaterials	3754
<i>R. Crowley, T. Sullivan Suiter, J. Pollock, M. A Nakatsuka, J. McHenry</i>	
Ductility Reinforced Elastomer and Molecular-Machine Based Cement System	3762
<i>Ashok Santra, Kenneth Johnson, Roland Martinez</i>	
A Review on Self-Healing Coatings Technologies for Sustainable and Resilient Surfaces	3773
<i>Nur Hidayah Sazali, Siti Nur Syazni Mohd Zuki, Noorhaslin Che Su, Sofyah Anis Izwani Jusof, Abdul Hazim Abdullah, Chee Sheau Chien, Mohd Azuwan Maoinsar</i>	
Wire Arc Additive Manufacturing (WAAM) Component with Integrated Substrate for Subsea Tee Branch Application.....	3800
<i>O. Caron, S. Terracina, L. Faivre, A. Santicchia, F. Lefevre, G. Arcangeletti</i>	
The Impact of Test Gases on American Petroleum Institute High-Pressure Testing	3816
<i>Xuming Chen</i>	
Development and Application of Delayed Expansion Rubber for Deep-Sea Environments: Material Properties and Optimal Bonding Techniques	3832
<i>Hongyu Wan, Qishuai Yin, Jin Yang, Xun Zhang, Yao Zhou, Hong Zhu</i>	
Composite Patch Repairs – A New Qualification Methodology	3855
<i>S. Paboeuf, M. Deydier, E. Leprêtre, S. Chataigner, Q. Sourisseau</i>	

SUBSEA PROCESSES IN OFFSHORE: LOW CARBON TECHNOLOGIES

World's First Implementation of a Subsea Desulfated Seawater Injection System: Project Status and Future Vision of the Technology Integrated into the Production System	3865
<i>D. A. B. Barbosa, F. A. Albuquerque, H. P. Koelln, R. L. S. de Souza, P. L. Florido, B. F. Sewald, D. M. C. Santos</i>	
Canned Motor Pump Development and Validation for Subsea Caisson Boosting Applications	3877
<i>M. Rojas, A. Merlino, C. Shaw, S. Richerson, J. Matos, R. Kobuck</i>	

An Analysis of Historical DRA Performance in Multiphase Applications and Recommendations to Improve Subsea Production.....	3895
<i>Jessica Pisarik, Isaac Johnson, Art J. Schroeder, Richard Baudier</i>	
Decarbonization Strategies for Offshore Platforms: Applying Lessons Learned from Electrification Projects in the North Sea	3912
<i>Atle Stromme, Jarno Vaekiparta</i>	
A Step Change in Hydrocarbon Recovery and Decarbonization with Carbon Free Energy from Advanced Offshore Nuclear	3923
<i>J. Ricardo Castillo, Leonardo do Valle Fehlberg</i>	
Evaluating Low Carbon Power Options for Offshore Assets: A Case Study.....	3941
<i>D. F. C. Silva, J. M. T. Marinho, P. D. G. Simões, F. M. Miller, C. F. Sebok, M. L. C. R. Aguiar, L. D. Sampaio, F. M. Passarelli, C. R. V. Matheus</i>	
Design for Reliability: Enabling Enhanced Condition Monitoring in All-Electric Subsea Systems	3958
<i>J. P. Duarte da Silva, M. Kubacki, G. Hendrix, E. Pfeifroth, T. Strohmenger, V. De Negri</i>	
Enhancing System Availability: Findings and Potentials Discovered During the Electrification of Large Subsea Valves	3971
<i>E. -M. Pfeifroth, M. Kubacki, G. Hendrix, J. P. D. da Silva, T. Droll, F. Gallinella</i>	
The Structure and Shielding Study of Containment Systems in Floating Nuclear Power Plants	3986
<i>Jinho Kim, Dongbin Park, Jekyoung Lee, Simyung Song, Taewoo Kim, Yeobum Youn, Sangmin Park, Sungkon Han, Hyunbuki Jeon, Domenic Carlucci, Jin Wang, Jeonghyeon Lee</i>	

ADVANCING MARINE RENEWABLE ENERGY: INNOVATIONS DRIVING THE FUTURE OF WAVE, TIDAL, AND OTEC TECHNOLOGIES

Hybrid Offshore Wind and Wave Energy Systems: A Case Study of Uruguay	3995
<i>M. V. Arduino, E. De Almeida, M. Loinaz, F. Weschenfelder</i>	
Offshore Oil and Gas Plugged and Abandoned Well Monitoring Using Small Scale Marine Energy	4010
<i>E. L. Grelle, S. M. Lajeunesse, P. Grandelli, F. Qiu, Z. Zhong</i>	
Ocean Thermal Energy Conversion (OTEC) an Imminent Distributed Hundred Billion Dollar Industry.....	4020
<i>T. J. Plocek, R. J. Varley</i>	
Economical Ocean Thermal Energy Today for Power, Hydrogen, and Data Storage	4039
<i>J. H. Anderson, Troy Miller</i>	
Electrifying America's Ports with Solar Reef: A Robust and Nature-Positive Fixed-Bottom Offshore Solar Solution.....	4056
<i>E. Rangel, J. Cotrell, V. Jafari Azad</i>	

ADVANCEMENTS IN OFFSHORE WIND FARM TECHNOLOGIES AND INFRASTRUCTURE

An Optimized Universal Spread Mooring System for Utility Scale Floating Offshore Wind Farms.....	4070
<i>R. D'Souza, Y. Arikan, T. C. Bauer</i>	

Considering the Uncertainty of CPT- q_c in Assessing Holding Capacity and Trajectory of Drag Embedded Anchors for Offshore Wind Farms in Taiwan	4087
<i>Yu-Shu Kuo, Hsiang-Yi Chen, Ping-Hsien Chin, Kai-Jun Chong, Yu-Hsiu Tseng</i>	
Effect of Seismic Peak Ground Acceleration on the Performance of Shared Suction Caisson Anchors in Clay for Floating Offshore Wind Turbines	4096
<i>I. O. Aghedo, M. Rouainia</i>	
Repurposing Typical GOM Platforms for Wind Power and Hydrogen Generation - Design and Economics	4106
<i>Paulo Liu, Yugbhai Patel, Muhammad Younas, Ram Seetharam</i>	
Design and Demonstration of a Nylon Semi-Taut Mooring System for a 225-kW Floating Wind Turbine off the Coast of Maine.....	4130
<i>J. C. Ward, S. T. Hallowell, C. K. Allen, A. M. Viselli, C. Karakus, P. Foxton, L. Bello</i>	
Consideration of Creep and Relaxation on the Fatigue Life of Copper Conductors in Dynamic Cables	4146
<i>S. G. Schawlan, L. M. Viespoli, A. Johanson</i>	
Analysis of Wind Potential on FPSO Platform Relating Lidar Wind Measurement to Reanalysis Data	4157
<i>M. M. Tabasnik, A. P. Petry, J. Mattuella</i>	

INNOVATIONS IN OFFSHORE WIND FOUNDATIONS, MOORING SYSTEMS, AND STRUCTURES

Enhancing Structural Analysis Efficiency by Replacing Complex Connections with Model Matrices	4171
<i>T. Zhou, A. Pulivelil, A. Gupta</i>	
Zigzag Mooring Line Design for Shallow Water Semi-Submersible FOWT	4184
<i>Qi Xu, Qi Ling</i>	
Effects of Particle Morphology on the Interface Friction Angle of Sands.....	4196
<i>A. Seiphoori, T. N. M. Duong, M. A. Salehi</i>	
Mechanical Characterization of High-Elongation Polyester and Polyamide Fibers for FOWT Mooring	4207
<i>D. M. da Cruz, L. B. Zangalli, M. A. Barreto, F. M. Clain, C. E. M. Guilherme</i>	
Evaluation of Truss Tower for Large Capacity Turbine Tension Leg Platforms	4234
<i>Q. Chen, V. Vinayan</i>	
Deformation Analysis of Suction Anchors for Floating Offshore Wind Turbines	4245
<i>Tetta Nagano, Elvar K. Bjarkason, Shigemi Naganawa</i>	
Assessing Global Performance of 15 and 22 MW Floating Wind Semi-Submersible (FWSS) Platforms through Cyber-Physical Modelling and Simulation	4255
<i>H. Santo, K. Y. Chia, C. T. Liong, M. Cai, C. Zhang, S. Liu, C. K. Yeo, Q. H. Ng, A. Merchant, M. Pasumarthy, Z. Chen, S. Wang, M. Sreedharan, A. Hussain, S. Kumar</i>	

ADVANCEMENTS AND INNOVATIONS IN CARBON CAPTURE, UTILIZATION, AND STORAGE (CCUS) TECHNOLOGIES

CO ₂ Injection Well Transients: How Complex Can They Be?	4268
<i>Divya Shah, Govind Hegde, Srinivasan KV</i>	
Dynamic Kill Modeling of Subsea CO ₂ and CH ₄ Blowouts: Differentiating Factors and their Implications for Offshore Carbon Sequestration	4288
<i>Eric. R. Upchurch, Yaxin Liu, Lei Zhou, Bjoern-Tore Anfinssen</i>	
Flow Assurance Challenges of Well Design for CO ₂ Injection into a Depleted Gas Reservoir in Southeast Asia	4315
<i>M. Nazeri, M. T. Hoang, K. Randhawa, L. Concilio, M. K. Hamdan, P. Konganuntragul</i>	
Environmental Stability Evaluation of Butadiene Copolymer Elastomers for Subterranean Gas Storage Applications.....	4337
<i>C. W. Glaesman, S. Thatathil</i>	

VOLUME 7

Post Combustion CO ₂ Capture Plant for Offshore Gas Turbine Generators (GTGs) – Qualification Process.....	4357
<i>D. A. Siquara, G. M. Raposo, C. F. Sebok, B. S. Campagnolo</i>	
Certification of an Offshore CO ₂ Offloading and Injection Solution with Flexible Pipes.....	4368
<i>M. M. Sorensen, J Rytter, A. Vaalandsmyr</i>	
Subsea Ultrasonic Flowmeter for Fiscal and Allocation Metering in the CCS Value Chain	4382
<i>R. Rustad, H. Solheim, E. Lagrand, G. J. Brown</i>	

NUCLEAR IN OFFSHORE

Offshore Nuclear Technology: Power Generation, Applications, and Challenges Across the Full Spectrum.....	4392
<i>Hosam Abu Zeid, Hani Elshahawi</i>	
Nuclear Energy for Offshore Ships	4407
<i>A.L.J. Steenhuis</i>	
Manufacturing of Nuclear Reactors for Civil Maritime Applications	4422
<i>J. E. Stephens</i>	
Requirements for the Assurance of Nuclear-Powered Offshore Assets	4427
<i>J. Sims, M. Dowling</i>	
Regulatory Convergence: Adapting Nuclear and Dynamic Positioning Validation Methodologies for Offshore Drilling Rigs of the 2030s.....	4442
<i>S. J. Whiteford, M. Craig</i>	
Method of Evaluating SMR Decay Heat Removal in a Floating Nuclear Power Plant During Vessel Flooding Scenarios	4462
<i>I. Kourasis, R. Vilariño, O. Hamilton, B. Ahonsi, R. Chaplin, T. Davies</i>	

Floating Nuclear Power Plant Risk Based New Technology Qualification Applied for SMR Application	4479
<i>J. Esteve</i>	

SEAFLOOR ASSESSMENT, DESIGN AND INSTALLATION EXPERIENCE FOR OFFSHORE WIND

Tank Testing of Load Reduction Device for Floating Offshore Wind Moorings.....	4488
<i>T. Doyle, S. A. Hasan, D. Golden</i>	
A Method for Comparing and Ranking Floating Offshore Wind Foundation Concepts.....	4502
<i>M. Wyllie, A. Newport</i>	
Ventos de Libra Project: A New Concept for Supplying Energy in Ultradeep Water Floating Oil and Gas Platforms from Offshore Wind Power.....	4517
<i>A. P. Petry, J. T. Rodrigues, J. M. L. Mattuella, Y. Sakagami, S. V. Möller, C. Lodi, E. Perondi, T. C. Hayashi, E. C. Dittrich, G. Galvão, L. F. A. Fontenele, J. E. M. Da Silva, E. D. Basso, A. F. Medina, L. F. Ribeiro</i>	
Modular Central-Located WTG Floating Offshore Wind Foundation.....	4533
<i>J. Zou</i>	
Concrete Floaters: A Promising Solution for Floating Wind Energy.....	4567
<i>Pascal Collet, Marie Féron, Stéphane Le Guennec</i>	
Floating Offshore Wind Subsea Cables	4578
<i>R. A. D. Weeks</i>	
Solving the Fixed Offshore Wind Installation Bottleneck with a Crane-Less Jack Up Vessel	4587
<i>Andres Garcia</i>	
Semi-Submersible Floating Offshore Substation Wave Basin Model Test.....	4597
<i>Hongbiao Song, Zhaoxiang Tang</i>	

ADVANCED GEOSCIENCES TECHNIQUES AND INNOVATIONS IN OFFSHORE RESERVOIR DEVELOPMENT

A New Method of Estimating Water Saturation Using Acoustic Logs – Applications to Oil Reservoirs.....	4611
<i>S. J. Omovie</i>	
Paving the Road to Success: The First Advanced Through-Drill Pipe Formation Evaluation Run in the UAE to Appraise the Early Jurassic Reservoir Sequence	4628
<i>A. Serry, E. Draoui, N. Al Kindi, K. Alhosani, O. Keshtta, A. Al-Salati, A. R. Arif Ali, S. Ahmed, M. Al Hassan, F. El Maimouni, M. Younis, A. Tamuli, A. Al Harbi, E. Ibe, N. Shinde, S. Uluysuz, A. Hanif, M. Ismail, A. Panchakarla, A. Prabantara, S. Sepehri, M. Thabet, S. Khatri, M. Fahmy</i>	
Physics-Informed Machine Learning for Enhanced Permeability Prediction in Heterogeneous Carbonate Reservoirs.....	4651
<i>Ahmed K. Khassaf, Zainab M. Al-hameed, Noor R. Al-Mohammedawi, Watheq J. Al-Mudhafar, David A. Wood, Mohammed A. Abbas, Ouafi Ameur-Zaimeche, Ahmed A. Alsubaih</i>	

Advanced LWD Logging Suites Help Develop Deep Low-Permeability Oil Reservoirs in the Eastern South China Sea	4663
<i>Lipeng He, Yongrui Sun, Huanling Bian, Jian Li, Hui Gao, Bo Liu, Dahai Wang, Chenglong Wang</i>	

Using Core, Image Logs, Tracer, Production, and Mud Logs to Support the Development of Low-Permeability Limestone Oil Fields: A Case Study from the Pearl River Mouth Basin, China	4674
<i>Yongming Gao, Huanling Bian, Weinan Liu, Benfei Sun</i>	

DIGITAL TRANSFORMATION IN OFFSHORE OIL & GAS: LEVERAGING AI, DIGITAL TWINS, AND AUTOMATION FOR ENHANCED OPERATIONS

Digital Twin Innovations in Artificial Lift and Flow Assurance: Overcoming Brazilian Offshore Challenges	4685
<i>R. P. Resende, J. C. Araujo, J. Lins Ribeiro, A. Melo, T. G. Perovano, A. Del Puppo, J. Ciambelli, L. K. Miyatake, A. Postal, R. Mendes, H. Curto, L. Dalla</i>	

Predicting Gas Lift Equipment Failure with Deep Learning Techniques	4693
<i>James O. Arukhe, Ammal F. Anazi</i>	

Automated Inspection and Equipment Management for Ship Surveying Using AI Video Processing.....	4719
<i>Paul Mario Koola, Aran Dezhban, Subrat Nanda</i>	

Balancing Early Value Creation with Long Term R&D Decisions: Lessons from Robotics Innovation.....	4730
<i>D. Russo Juliano, C. Silva Cavalcante Lima, R. Doak</i>	

Unmanned Offshore Platforms in the Gulf of Mexico with Ai, IOT Scada Reduces Cost and Increase Productivity	4746
<i>Camilo Mejia, Rebecca Nye, Jose Contreras, Adin Nand, Cody Edgerton</i>	

Digitalization of the Corrosion Identification Process Using Digital Technologies in Mature Fields.....	4757
<i>L. Dáquila, O. C. Correa, J. L. Mariano, A. L. Andrade</i>	

PUSHING BOUNDARIES: REDEFINING OFFSHORE OPERATIONS IN THE ERA OF AI AND ADVANCED ROBOTICS

Delivering the World's First Multi-Robot Toolkit for Special Survey Inspection of FPSO Hull Tanks	4764
<i>Ross Doak, Steven Trevino, William Kirby, John Kennedy, Gardner Brown, Scott Schroth, Peter Tawse, Anna Greenwood, Craig Smith, Dana Enstad, Cameron Aird, Sean Stanbery, Jadranko Silic</i>	

Pioneering the Aquanaut: First Offshore Trial and Sequential De-Risking from Pool Tests to Subsea.....	4777
<i>R. Doak, S. Legg, J. Elkins, E. Pierce, R. Meyer, D. Juliano, J. Lou, A. Boheimer, D. Dehart, J. Close, K. Moorman, J. Machnizh</i>	

Going Autonomous: The Daily Operations of the World Only Resident Drone.....	4788
<i>F. Cavallini, L. Turi, G. Massari</i>	

Revolutionizing Offshore Drilling: The Robotic Enhanced Barite Recovery and Waste Reduction System for Mud Tank Cleaning	4802
<i>Jiawei Dong, Stuart Lindeman, James Autin, Przemyslaw Gluszek, Damien Goodyear, Jason Norman</i>	

Optimizing Subsea Robotics Operations Through Advanced Simulation of Subsea WiFi Coverage	4810
<i>S.J. Balkøy, E. Lycke</i>	
Integrating Machine Learning with Pile Monitoring Data for Predicting Soil Resistance	4822
<i>A. Kody, M. Maron, P. Hiremath, M. A. Abdul Khader, T. Cömert, R. Clavaud</i>	
Artificial Intelligence at the Service of Offshore Pipelaying Operations	4831
<i>G. Monacchi, P. Catena, A. Esposito, G. Arcangeletti, N. Spiezia, A. Lovison</i>	
Coupled Drilling Optimization Based on Hybrid Physics-Machine Learning Models	4845
<i>Peng Qi, Yu Chen, Philip Temple, Wei Li, Lu Liu, Fei Gao, JingYing Yang, Hongliang Zhang, Lu Chen, Peng Tian, Sheng Liu</i>	
Artificial Intelligence Platform for Monitoring and Risk Prevention in Confined Spaces	4859
<i>D. R. Moura, P. D. da Silva, R. C. Gomes, P. Alberto, F. M. Siviero, L. Calabria, K. Hoentsch</i>	

NEW TECHNOLOGIES TO IMPROVE FACILITIES AND PRODUCTION OPERATIONS

Real-Time Organic/Inorganic Scale Build-Up and Damage Identification for Sustained Production.....	4876
<i>Bulent Izgec</i>	
Machine Learning Framework for Treating and Preventing Scale Formation	4890
<i>James O. Arukhe, Khalid A. Ghamdi, Ammal F. Anazi</i>	
Unified Pressure Loss Prediction for Fluctuating Total Gas Liquid Ratio in Gas-Lift Wells: A Revolutionary Novel Method	4907
<i>V. C. Singh, Nakul Varma, D. Khandelwal, Vaibhav Deshpandey, Vikash Kumar, Aaheli Bhattacharjee, Chitwan Garg, Somenath Kar</i>	
Application of a Multiphase Flow Simulator for Production Optimization of Tiebacks Using Subsea Multiphase Pumping.....	4921
<i>I. Fernandes, A. Gaidhani, K. Shukla</i>	
Optimizing Gas Production Networks Through Automated Surveillance, Diagnostics and Scenario Comparison	4934
<i>U. Gogoi, A. Bruzco, N. Gusain, M. Gupta, B. Bhatt, P. Pitla, R. Sahmkow, A. Saxena</i>	
Experimental Investigation of Downhole Vortex Gas Separator Efficiency Under Two-Phase Flow Conditions: Impact of Differential Pressure and Flow Rates	4945
<i>Haiwen Zhu, Adedayo Tychus, Haorong Jing, David Baillargeon, Paul Song, Michael Rumbaugh, Qiang Sun, Qiuchen Wang, Sai Praveen Adiraju, Tanmay Tatu, Hong-Quan Zhang</i>	
Enhancing Offshore Gas Dehydration Efficiency and Design Optimization for Sour Gas Field Development Project	4958
<i>A. Siriyut, S. Watanapanich, P. Wongwiwatchai</i>	

GEOTECHNICAL - STUDY, EXPERIMENT TO FIELD APPLICATION

Finned Suction Piles: Groundbreaking Offshore Experience in Deepwater Clay Soils of Brazil	4966
<i>Pablo Castillo Garcia, Camila Floriano, Charilaos Tsetoulidis, Daniel Orejuela, Stylianos Panayides, Edy Serra</i>	
Application of Data-Driven Techniques in 3D Soil Characterization for Top-Hole Design.....	4984
<i>C. A. F. Várady Filho, J. K. F. Tenório, E. T. Lima, J. P. L. Santos, R. Dias, F. S. Cutrim</i>	

Challenges on Large Diameter Driven Piles for Major Topside Loading: Road Map of Success from FEED to Installation	4996
<i>A. R. Ahmad, M. Maron, G. Garcia-Bermudez, G. J. Jacob, B. Bohara, J. Boksmati, A. J. Albahrani, A. S. AlShaye</i>	
Installation and Capacity Analyses of Offshore Torpedo Anchors	5009
<i>Jinbo Chen, Pin Xiu Ng, Zhuo Wang, Xing Tao, Yunliang Shao, Yuhao Zhao, Yong Luo, Qi Zhang</i>	
Submarine Continental Slopes Stability Prediction of Natural Gas Hydrates Based on Machine Learning	5023
<i>Yu Chen, Yufa He, Yixuan Wang, Yunjian Zhou, Qiang Fu, Xuwen Qin, Dingyuan Liu, Zheng Tian, Kexin Zhang</i>	
Skirt Pile Foundations in Offshore Platforms: Group Effect and Behavior in Shallow Waters.....	5037
<i>F. A. Flores, J. B. De Lara, D. Cruz, V. M. Taboada, F. Silva, S. Martinez</i>	
Experimental Approach Towards Investigating Cyclic Load Response of a Suction Anchor	5055
<i>M. A. Toma, A. M. Marshall, C. Heron, L. J. Prendergast, V. Zania</i>	
Dynamic Moduli and Mechanical Responses of a Fluid-Saturated Cylindrical Rock Specimen Under Harmonic Vibration with Thermal Effect	5065
<i>Chao Liu</i>	

Author Index