

Middle East Oil, Gas and Geosciences Show

Manama, Bahrain
19 - 21 February 2023

Volume 1 of 6

ISBN: 978-1-7138-7092-0

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© (2023) by Society of Petroleum Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact Society of Petroleum Engineers
at the address below.

Society of Petroleum Engineers
P. O. Box 833836
Richardson, Texas 75083-3836

Phone: (800) 456-6863
Fax: (972) 952-9435

books@spe.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

PRODUCTION MANAGEMENT I

Laboratory Study on the Efficiency of Polymer-Based Foamed Gel for Conformance Control in High Temperature Reservoirs.....	1
<i>Noorah Almulhim, Abeer Alarawi</i>	
New Generation Downhole Sand Detection Technology Leading to Confident Reservoir Sand Management and Cost-Effective Remedial Opportunities	12
<i>Ravi Kurma, Wuroud M Kh Al-Fadhli, Hazim Ayyad, Majid Mehraj, Abdulaziz Alajmi</i>	
Delaying Multiphase Pump Gas-Lock in High-GVF Flows Using High-Speed Operation	25
<i>Chidirim Ejim, Jinjiang Xiao, Woon Lee, Wilson Zabala</i>	
Power of 6 Sigma to Overcome Chronic Business Pain Area	37
<i>Adil Albusafi, Farah Albalush, Mohammed Alshuily, Najim Albalushi, Maadh Alrahali, Ashraf Alhinai, Ali Alsahlani, Houd Alsalhi, Yousuf Alkiumi, Nayakam Ram, Jithin Muhammed, Somaya Maghdari</i>	
Intelligent Downhole Identification and Control are Key to a Successful Water Conformance Strategy.....	50
<i>Mohammed Omer, Francisco E. Fragachan, Miguel J. Duarte, Alfredo A. Alvarez</i>	

GEOMECHANICS MODELLING I

Automated Geomechanics Modelling Workflow Supports Real-Time Decision Making and Risk Mitigation in Challenging Horizontal Wells	63
<i>Arnott Dorantes, Nata Franco, Rawan AlSameen, Syed Mohamed Amer, Florian Karpfinger, Mauricio Corona, Mansoor Abdul Kader</i>	
Effects of Temperature and Rate-Dependent Mud Cake Buildup on Wellbore Stability in Multi-Permeability Formations	75
<i>Chao Liu, Dung T. Phan, Younane N. Abousleiman</i>	
Drilling with 3d Geomechanical Modeling - Efficient Simulation Method	85
<i>Hamad Al-Hamad, AlSamhan Sarah, Meqdad Al-Naqi, Abdulaziz Sajer, Assef Hussein, Qinglai Ni, Surej Kumar</i>	
New Numerical Method for Sand Production Propensity Estimation	97
<i>Surej Kumar Subbiah, Assef Mohamad-Hussein, Ariffin Samsuri, Mohd Zaidi Jaafar, Ying Ru Chen, Andrew Pearce, Rajeev Ranjan Kumar, Rajendra Nath Paramanathan, Lex de Groot</i>	
Stability Analysis for Sidetracked Wells in Poro-Elastoplastic Formations.....	117
<i>Denis Sabitov, Hussain AlBahrani, Osman Hamid</i>	
Shale and Carbonate Wellbore Stability Charts for Drilling Operations	129
<i>Ahmed Al Ajmi, Bilal Shaheed, Adel Al Ajmi, Hamoud Al-Hadrami, Mohammed Al-Aamri</i>	
A Workflow to Estimate Critical Drawdown Pressure Utilizing 1-D Geomechanics Modelling.....	152
<i>Ammar Qatari</i>	

PRODUCTIVITY ENHANCEMENT I

Novel Carbon Dioxide (CO ₂) Foamed Fracturing Fluid, an Innovative Technology to Minimize Carbon Footprint	159
<i>Mathew M. Samuel, Ziad Al-Jalal, Nurlan Nurlybayev, Mohammad Farouk, Zhijun Xiao, Cheng Kang Kang, Li Huanming</i>	
Flowback Enhancer for Acidizing Fluid Systems to Stimulate Gaseous Carbonate Reservoirs	181
<i>Rajesh K. Saini, Mohammed A. Sayed</i>	
Well Productivity Optimisation with Tailored Hole Spacing in Smart Liners	200
<i>Kristian Mogensen</i>	
Hydrolysis-Promoted Polymerization of Furfuryl Alcohol: Selective Method for Mitigating Excess Water Production in Oil Wells	215
<i>Amy J. Cairns, Rajesh K. Saini, Fakuen F. Chang</i>	
Counting the Effect of Crude Oils: Towards Increasing the Efficiency of Carbonate Matrix Acidizing	228
<i>Mohammed Al Hamad, Mustapha Farhan Abbad, Farhan Ali, Nader AlOtaibi, Azizah AlRadhwan, Mohammed AlQuisom, Wael Abdallah</i>	
A Novel Clay Control and Conductivity Approach in Water Sensitive Tight Oil Reservoirs in China During Proppant Fracturing	239
<i>Zichao Wang, Wendi Zhang, Changhong Wu, Shunyao Song, Xuwei Liu</i>	

INTEGRATED OPERATIONS

Technological and Engineering Evolution to Successfully Drill Long and Highly Deviated S-shape Wells.....	255
<i>Mohammed Aljuzayri, Sarvodaya Bansal, Daria Ponomareva, Nata Franco, Mauricio Corona, Jesus Levario</i>	
Process of Releasing a Stuck String Using Static Dissolvable Coating Layers.....	269
<i>Ibrahim Althowiqeb</i>	
Operational and Logistical Optimizations in Large Offshore Matrix Acid Stimulations	274
<i>A. A. Saleh, R. Bukhamseen, A. A. Jaber, A. H. Almazrou</i>	
Multidiscipline Well Construction Process Integrates Advanced Engineering Design and MSF Technologies to Deliver Arabian Gulf Trilateral Well	289
<i>Opeyemi Adewuya, Mahmoud Alqurashi, Rommel Urbina-Arias, Faisal Alodah</i>	
A Unique Fracturing Solution in Water-Sensitive Tight Gas Formations.....	321
<i>Tianjun Yu, Yongbo Cao, Ming Li, Junfeng Wang, Jie Zhang, Yuan Liu, Yin Luo, Haihua Yang, Taiji Wang, Andrew Fendt, Peiwu Liu</i>	
Drilling Monitoring System: Mud Motor Condition and Performance Evaluation	332
<i>Alexis Koulidis, Mohammed Abdullatif, Shehab Ahmed</i>	

ARTIFICIAL LIFT TECHNOLOGIES & OPTIMIZATION

Performance Envelope of a High-Speed High-GVF Helico-Axial Pump	347
<i>Chidirim Ejim, Jinjiang Xiao, Woon Lee, Wilson Zabala</i>	

Thermal Investigation of ESP Motor Temperature Rise with Focus on Heavy Oil Applications	358
<i>Kamyar Najmi, Ricardo Teves, Nahun Zarate Guzman, David Zhu, Howard Thompson, Shawn Gunter</i>	
Reshaping Workover Operations in Kuwait Forever : The First Deployment of Wireline Deployed Pump in South East Field in Kuwait	371
<i>Fawaz Al-Shammari, Hamad Al-Rashedi, Saad Al-Meshwet, Kholoud Al-Rasheedi, Laila Abdullah, Syed Zubair, Abdulrahman Al-Dhafiri, Shiv Jalan, Khalid Al-Harbi, Fahad Al-Abdulahadi, Khaled Abdulrahim, Mourad Nebbali, Ahmed El Rashidy, AbdulAziz Al-Ajmi, Raghuvveer Tapdiya, Nurul Nabila Abd Manap, Calum Crawford, Steve Browning, Alan McAleese, Mike Banda, Hazim Ayyad</i>	
Progressing Cavity Pump (PCP) Hydraulic Driveheads Implementation in Non-electrified Mature Oil Field - Reliability and Production Enhances	389
<i>Marco Iguaran, Leonardo Suarez, Henry Vidal, Ariel Nicoletti, Alberto Munoz, Francisco Nercesian, Marcos Dapino, Luis Martini</i>	
Review of Electrical Motor Technologies for ESP Applications	396
<i>Chris Wrighton, Alexandru Vlad Rusu, Matteo Lacchetti, Alexander Smith</i>	
Well Monitoring New Concept Based on Artificial Lift Power Indicators, Identifying Failures and Minimizing Energy Consumption Costs Due to System Inefficiency	413
<i>Pablo Coria, Victor Devincenti, Maivy Orozco</i>	
Switched Reluctance Motor Operation Using Three Conductor Electric Submersible Pump Cable.....	432
<i>Robert Adams, Jinjiang Xiao, Jonathan Harrist, Max Deffenbaugh</i>	

MIDSTREAM GAS I

Bahrain LNG Import Terminal (BLNGIT) Project: 1st LNG Commissioning Cargo and Integration of Imported Regasified LNG (RLNG) with Domestic Khuff Gas in the Existing Distribution Network.....	440
<i>Fawaz A. Aziz AlKhunaizi, Muni Shankar Prudhvi, Anwar Mohamed</i>	
A Hybrid H2S Removal Solution. Using Liquid vs. Fixed Bed H2S Scavengers in Harmony	456
<i>Michael Crawshaw, William Brundick, Michael Juncker, Kristina Barbuto, Alyn Jenkins, Sooi Kim Lim</i>	
NGL Process Optimization at Khurais Producing Facility to Maximize NGL Recovery and Minimize H2S Content through HYSYS Simulations	466
<i>Hatem A. Bajuaifer, Ashiff Khan, Ahmad M. Hawsawi, Kamarul A. Amminudin</i>	
Effective Method for Decontamination of Compromised Slug Catcher: Case Study.....	476
<i>Giselle Braganza, Joel Gomes</i>	

4TH INDUSTRIAL REVOLUTION I

An Intelligent Safe Well Bottom-Hole Pressure Monitoring of CO2 Injection Well into Deep Saline: A coupled Hydro-Mechanical Approach.....	485
<i>Zeeshan Tariq, Bicheng Yan, Shuyu Sun</i>	
Toward Combining Multi Seismic Attributes, A Novel Machine Learning Approach	502
<i>Mustafa Alshuala</i>	

A Comparison of Machine Learning Algorithms for Rate of Penetration Prediction for Directional Wells.....	522
<i>Chengxi Li, Peng Cheng, Chris Cheng</i>	
Oil Pipeline Leak Detection Using Deep Learning: A Review on POC Implementation	533
<i>Ahmed AlAzri, Sultan Alkaabi, Saud AlZakwani, Fadhil Altamimi, Maadh AlMamari, Mohammed AlSulaimani</i>	
Machine Learning for Prediction of CO2 Minimum Miscibility Pressure	544
<i>Muzammil Shakeel, Mohammad Rasheed Khan, Shams Kalam, Rizwan Ahmed Khan, Shirish Patil, Usman Anjum Dar</i>	
A Data-Driven Model for Bound Fluid Prediction in Carbonate Reservoirs.....	555
<i>Ali Alshuwaikhat, Ghadah Albalawi, Laila Alshammasi, Yacine Meridji</i>	
Collaborating in the Metaverse for Successful Subsurface Reservoir Characterization.....	566
<i>Philip Norlund, D'Angelo David</i>	

UR RESERVOIR ENGINEERING

Analyzing Discrepancies in PTA and RTA for Accurate Flow Regime Identification and Fracture Geometry Estimation – An Example from a Highly Heterogeneous Unconventional Sandstone Reservoir	575
<i>Tayyar Altayyar, Abdulrahman Alowaid</i>	
Comparison of Analytical Model Versus Numerical Model in Estimating EUR of Well Drilled and Completed in Unconventional Source Rock.....	586
<i>Rabah Mesdour, Faisal Almalki, Qarni Mohammed, Dossary Mohammed, Albassam Mohamed</i>	
Numerical Simulation of Production Declines in Tight Naturally Fractured Carbonate Reservoirs	600
<i>Raphael Altman, Roberto Tineo, Mostafa Afifi</i>	
A Two-Phase Transfer Function for Simulation of Fractured Ultratight Gas-Condensate Reservoirs.....	609
<i>Mohammed Samir Raslan, Anuj Gupta, Harun Ates, Kristian Jessen</i>	
Integrated Fracture and Reservoir Model for Well Spacing Optimization in Unconventional Reservoirs With 3D Natural Fractures	628
<i>Wei Yu, Harun Ates, Anuj Gupta, Shuang Zheng, Chuxi Liu, Kan Wu, Joseph Leines-Artieda, Jijun Miao, Kamy Sepehrnoori</i>	
The Optimum Cluster Interference Percentage in Multi-Stage Fractured Wells.....	645
<i>Ahmed Farid Ibrahim</i>	
Upscaling of Discrete Fracture Characterization to Dual-Porosity Models Using an Advanced Transfer Function	658
<i>Mohammed Samir Raslan, Anuj Gupta, Harun Ates, Kristian Jessen</i>	
Unconventional Reservoir Modeling with Complex Hydraulic-Natural Fracture Networks Using a Parallel Reservoir Simulator Coupled with Embedded Discrete Fracture Model	678
<i>Shuang Zheng, Harun Ates, Anuj Gupta, Paul Crumpton</i>	

ADVANCEMENT AND COMPLETION & DRILLING

- Solving the Low Injectivity Challenges in Hydraulic Fracturing Tight Gas Reservoirs - Case Histories Review 697
Alexey Yudin, Nurlan Nurlybayev, Ziad Al-Jalal

VOLUME 2

- Achieving Well Cleanup and Zero Routine Flaring Utilizing Existing Flowline and Extended RTP 708
Abdulmajeed Aldughaiter, Saleh Marri, Muhammed Albuali
- Restoring Well Integrity: The Innovative Design of Thermally Activated Resin in a Sour Environment 715
Danish Ahmed Khan, Manuel Centeno Acuna, Salah Islam Hasan, Lizeth Merino, Pablo Chica, Ahmed Mudheher Hussein, Abdulqawi Al Fakih, Rasha Alo, Svein Normann

PRODUCTIVITY ENHANCEMENT II

- First Application in Oman of New Single Stage Retarded Sandstone Matrix Acidizing 724
Hajir Qassabi, Andika Putra Rafliansyah, Johnny Falla, Ahmed Al-Yaaribi, Saleh Al-Ruzeiqi
- CO₂ Foamed Fracturing Fluids for High Temperature Hydraulic Fracturing 738
Prasad Karadkar, Bader Harbi, Aatur Malik, Mohammed Alsakkaf, Safyan Khan
- Addressing Hydraulic Fracturing Performance Challenges in HPHT Well with New Fluid System and Comprehensive Fracturing Study Utilizing Full 3D Simulator 748
Nurlan Nurlybayev, Ziad Al-Jalal, Mathew Samuel, Mohammad Farouk, Mustafa Ghazwi, Ali Yaseen, Raja Jalil Muhammad
- An Integrated Experimental Method to Study Multistage Alternating Injection Acid Fracturing in Limestone Formation 758
Yonglin Ren, Da Wang, Puyong Feng, Jun Chen, Shangqi Shao, Wanchun Zhang, Bo Cui
- Carbonate Matrix Stimulation with Pickering Emulsified Acid Studied by Large-Scale Radial Flow Experiments 774
Moustafa Aly, Gallyam Aidagulov, Abdullah Sultan, Devon Gwaba, Mustapha Abbad

NUMERICAL MODELLING AND SIMULATION

- Reservoir Simulation Evaluation of Cyclic Steam Stimulation Strategies in Teyarat Carbonate Heavy Oil Reservoir 796
Solomon Evro, Adnan Alshamali, Fahad AL-Faresi, Al-Qattan Mishari, Nejoud Al-Ostad, Galina Krasnova, Laila Hayat, andana Suresh, Hasan Mandani, Carlos Jimenez, Sher Ali
- Fracture Characterization and Modeling in Dual Media Systems and its Impact on Reservoir Connectivity and Well Productivity 813
Abdulrahim K. Al Mulhim, Mohammed H. Alnasser, Hassan H. Hamam, Marko Maucec
- An Integrated Ensemble Based Prediction Approach to Quantify and Propagate Uncertainties of Naturally Fractured Carbonate Reservoirs 828
Mohammed Abd-Allah, Ahmed Abdelrahman

Pattern Recognition-Driven Automatic Drainage Region Mapping to Accelerate Reservoir Simulations	845
<i>Ahmed Shubbar, Marko Maucec, Babatunde Moriwawon</i>	

CARBON FOOTPRINT MANAGEMENT

Life Cycle Assessment of Deployment of Liner Hanger vs Long String	860
<i>Naeem Minhas, Alexis Davis, Hussain Sharrofna, Sathish Kalaimani, Parvez Khan, Faisal Abdelrahim, Lee Robinson</i>	
Successful Accelerated Reduction of CO2 Emissions through a Statistical Approach	869
<i>Ahmed Al Salmi, Sara Al Balushi, Yousuf Al Zaabi</i>	
Well Design Re-Engineering: First Level of Emission Footprint Optimization.....	881
<i>Aleksandr Nifantov, Alexey Ruzhnikov</i>	

GEOMECHANICS MODELLING II

An Algorithm for Consistent Mechanical Earth Model Parameters Determination: Applications in Wellbore Stability and Hydraulic Fracturing Modeling	891
<i>Hussain AlBahrani, Yara Alkhaldi</i>	
Fully Coupled Hydromechanical Approach for Flow in Fractured Rocks Using Darcy-Brinkman-Biot	907
<i>Xupeng He, Zhen Zhang, Marwa AlSinan, Hyung Kwak, Hussein Hoteit</i>	
Maintaining Structural Integrity for New Well Design	915
<i>Danish Ahmed Khan, Manuel Centeno Acuna, Yousif Baqer Al-Asadi, Slimane Sebbane, Hoory Tossonian, Pablo Chica, Ahmed Mudheher Hussein</i>	
Development of the 2D 3D Plastic Volumetric Strain Around a Borehole Using Elastoplastic and Thermo-Elastoplastic Modeling Approaches	926
<i>Osman Hamid, Rowa Tawfiq</i>	
Role of Geomechanical Modeling and Analysis in Sand Management and Control.....	940
<i>Hadi Ashtiani Abdi, Wassem Alward</i>	

UNCONVENTIONAL RESERVOIRS CHARACTERIZATION I

Chemical Reaction Equilibrium Theory - A Novel Approach to Estimate Shale Reservoir Fluid Compositions.....	951
<i>Rasmus Risum Boesen, Sukit Leekumjorn, Christian Agger, Henrik Sørensen</i>	
Investigation of Thermal Fracturing and Permeability Enhancement in Tight and Shale Rocks During In-Situ Heating.....	964
<i>Zijian Wei, James Sheng, Yicheng Zhou</i>	
A Novel Well Log Data Quality Prescriptive Framework for Enhancing Well Log Data Quality Interpretation	983
<i>Klemens Katterbauer, Abdallah Al Shehri</i>	
Integrating Petrophysical and Geochemical Measurements of Drill Cuttings for Enhanced Formation Evaluation	991
<i>Hasan Kesserwan, Guodong Jin, Shouxiang Ma, Saleh Alofi</i>	

Reservoir Quality and Maturity Indicators Using Image-Based and Bulk Rock Characterization.....	999
<i>Shannon Eichmann, David Jacobi, Poorna Srinivasan, Jennifer Rodriguez</i>	

PERFORATION TECHNOLOGIES

Perforating for Stimulation: Techniques, Challenges, Considerations, and Efficient Workflows.....	1008
<i>Abdul Muqtadir Khan, Abdullah Binziad, Abdullah Alsubaii, Danish Ahmed, Abdulmajeed Alotaibi</i>	
Key Success Factor for High Power Laser Deployment: Strategy and Execution	1030
<i>Sameeh Batarseh, Damian Pablo San Roman Alerigi, Abdullah Al Harith</i>	
Perforation Design and Gun Selection Workflow – A Successful Case History for Deep Penetrating Gun.....	1039
<i>Ayman Samy, Jim Gilliat, Ruslan Khalilov, Nariman Pashayev, Rufat Mammadov, Akbar Akbarov, Elmar Bahalov, Maarif Allahverdiyev</i>	
Implementing a Novel Organic Acid Matrix Stimulation to Successfully Remove Formation Damage: Case Studies, Iraq and Ecuador Oilfields.....	1048
<i>Jhonny Alvarez, Xavier Alarcon, Jonnathan Tellez</i>	

WELL CONTROL

Not Just for Drilling! Utilization of MPD Technology for Unplanned Events Like Extensive Ballooning in Highly Elastic Formation, Off-Bottom Well Control with a Tapered Drill-String and Freeing Stuck-Pipe, Thinking Out of the Box, A Case Study	1063
<i>Jamal uddin Muhammad, Abdallah Alzahrani</i>	
Successful Managed Pressure Drilling Application in a Challenging Well With Crossflow in Unconventional Field	1074
<i>Hua Zhang, Jamal uddin Muhammad, Naif Mutlaq Alhajri</i>	
Novel Shear Dependent Cement Slurry System, Tailored to Rescue and Cure Losses when ECD Management and LCM Pills Failed – A Case Study from Southern Iraq.....	1089
<i>Lucio Felipe Campana Barbosa, Javaid Iqbal</i>	
Unsung Attributes of Managed Pressure Drilling Technology that Qualify its Need for Every Producer Well to Be Drilled Mitigating Major Hazards.....	1098
<i>Jamal uddin Muhammad, Bilal Tariq</i>	

4TH INDUSTRIAL REVOLUTION II

Smart Algorithms for Determination of Interfacial Tension (IFT) between Injected Gas and Crude Oil – Applicable to EOR Projects.....	1108
<i>Shams Kalam, Mohammad Rasheed Khan, Muzammil Shakeel, Mohamed Mahmoud, Sidqi A. Abu-khamsin</i>	
Data-Driven Well Candidate Recognition Solution. Case Study in a Digital Oil Field in Abu Dhabi.....	1116
<i>Erismar Rubio, Nagaraju Reddicharla, Mayada Ali Sultan Ali, Mohamed Ali Attar</i>	
From Well to Field: Reservoir Rock Porosity Prediction from Advanced Mud Gas Data Using Machine Learning Methodology	1126
<i>Fatai Anifowose, Mokhles Mezghani, Saleh Badawood, Javed Ismail</i>	

Data-Driven Machine Learning Modeling of Mineral/CO ₂ /Brine Wettability Prediction: Implications for CO ₂ Geo-Storage.....	1135
<i>Zeeshan Tariq, Muhammad Ali, Bicheng Yan, Shuyu Sun, Mohammad Khan, Nurudeen Yekeen, Hussein Hoteit</i>	
Application of Image Processing Techniques in Deep-Learning Workflow to Predict CO ₂ Storage in Highly Heterogeneous Naturally Fractured Reservoirs: A Discrete Fracture Network Approach.....	1147
<i>Zeeshan Tariq, Bicheng Yan, Shuyu Sun</i>	
Modeling While Drilling by Predicting Gamma Ray Ahead of Drill Bit Using Machine Learning	1163
<i>Rakan Alkheliwi, Yasser Ghamdi, Mohammed Alhussain</i>	
Oil-Water Relative Permeability Prediction Using Machine Learning	1173
<i>Sulaiman A. Alarifi</i>	

UR CHARACTERISATION II

Integrated Rock Physics Model to Predict Sweet Spots in an Unconventional Jurassic Carbonate Source Rock	1181
<i>Ammar Mohammed, Yazeed Altowairqi</i>	
Unveil the Significance of the Thin Laminated Carbonate Layer in Unconventional Reservoirs.....	1190
<i>Lei Zhang, Lipeng Wang, Liwei Jiang, Dongchu Shu, Yuanwei Pan, Qingshan Li, Yongjie Huang, Lizhi Wang, Yuan Liu, Peiwu Liu</i>	
Downhole Characterization of Clays and Formation Water Salinity Using Low Frequency Permittivity Dispersion.....	1200
<i>Wael Abdallah, Ping Zhang, Gong Li Wang, Shouxiang Mark Ma</i>	

WATER FLOODING

Microfluidics for Carbonate Rock IOR: Some Lessons From Fabrication, Operation and Image Analysis.....	1216
<i>Michael H.G. Duits, Duy Le-Anh, Subhash C. Ayirala, Mohammed B. Alotaibi, Han Gardeniers, Ali A. AlYousef, Frieder Mugele</i>	
In-line Partition Coefficient Measurement for Oil Field Tracers Utilizing Microfluidic Mixing Chip	1232
<i>Sehoon Chang, Gawain Thomas, Wei Wang</i>	
Gas Tracer Technology to Improve Reservoir Understanding and Evaluate EOR Strategy, a Pilot Study in Kuwait.....	1241
<i>Haya Al-Mayyan, Akshaya Pradhan, Khaled Ziyab, Marie Wurtz, Olaf Huseby, Peyman Nurafza, Tom Faulkner</i>	
Improved Amott Tests Help Quantify Primary Driving Forces in Spontaneous Imbibition in Water- Wet and Oil-Wet Limestone Rock	1250
<i>Ksenia Kaprielova, Maxim Yutkin, Ahmed Gmira, Subhash Ayirala, Ali Yousef, Clayton Radke, Tadeusz Patzek</i>	
A Systematic and Comprehensive Approach for Characterizing Capillary Desaturation Curves in Low-Permeability Carbonate Rocks.....	1267
<i>Amaar Siyal, Shehzad Ahmed, Waleed AlAmeri, Emad W. Al-Shalabi</i>	

Advanced Research and Development in Unconventional Use of Tracer Technology for EOR and IOR: The Gen Z Tracers	1285
<i>Monalisa Chatterjee, Sean Toh, Ahmed Alshmakhy, Yann Bigno, Paul Hewitt</i>	

PRODUCTION MANAGEMENT II

Salinity and Temperature Effects on Oily Produced Water Treatment Using Polyaluminium Chloride	1306
<i>Limin Xu, Ming Han, Fahd AlGhunaimi, Mohammed Bataweel</i>	
Demulsification of Heavy Crude Oil Emulsion Driven by Natural Materials	1319
<i>Ahmad A. Adewunmi, Muhammad Shahzad Kamal, Afeez Gbadamosi, Shirish Patil</i>	
Water Management Challenges in Greater Burgan Field	1330
<i>Shaikha Alkandari, Omran Al-Zankawi, Zainab Alsaleh, Dunya Jaafar, Mariam Jasem, Anandan Mudvakkat, Junaid Khan, Ahmad Alaassar, Godo Perez, Nuran Rjabli</i>	
Data-Driven Decision Making Through Digital Field Data Visualization Dashboard and Automated Process	1338
<i>Huda Al-Aradi, Sayed Yaseen Rajab, Nasser Al-Mototeh, Ali Al-Anjawi, Mahindra Winuksa, Pajar Achmad, Ahcene Ladraa, Abdelouahab Baamara</i>	
Extended Well Testing Campaign in Extreme H2S Environment in SIMOP	1354
<i>Hesham Katamesh, Emad Hamdy</i>	
Enhanced Field Sustainable Oil Production Rate Forecast Using Integrated Asset Operating Model for Production Efficiency Improvement	1359
<i>Erismar Rubio, Nagaraju Reddicharla, Mayada Ali Sultan Ali, Mohamed Ali AL Attar, Rayner Samuel Davila, Avnish Kumar</i>	
Method to Operate Water Wells at Optimum Rates Utilizing Orifice Performance Curves	1369
<i>Mohammed Almannai, Muhammad Javed</i>	

WELL INTERVENTION I

Heavy Duty Robotic Fishing Allowed to Restore Injectivity in Critical Well – A Case Study	1377
<i>Juan Jose Nobile Blanco, Sudesh Prabhakaran, Shiwanshu Shiwan, Amitav Rout, David Ting</i>	
All Metal Wellbore Intervention Tools as an Alternative to Motors	1385
<i>Allan Pearson, Mark Luchak, Robert Curle</i>	
Innovative Coiled Tubing Hybrid Fiber Optics Technology Increases Operational Efficiency	1391
<i>Danish Ahmed, Mohammed Ahmed Kaki, Sajid Mehmood, Haitham S Saeed Aljuaydi</i>	

BOREHOLE STABILITY

Field Deployment of Nanomaterial Based Shale Inhibitors	1404
<i>Ashok Santra, Hasmukh Patel, Arthur Hale, Nicolas Osorio, Arfaj Mohammad, Ramaswamy Jothibasu, Elahbrouk Ehab</i>	

VOLUME 3

Deployment of an Eccentric Borehole Conditioning Tool Yields Significant Drilling Efficiency Improvements.....	1411
<i>Michael James Bailey, Sion Llywelyn Roberts, Ahmed Suleiman, Ahmed Ismail</i>	
Minimizing Drill-String-Induced Wellbore Instability.....	1435
<i>Soukat Kumar Das, Hussain Albahrani, Arpita Pal Bathija, Thomas Finkbeiner</i>	
Lost Circulation Material Design for Highly Inclined Or Horizontal Well Sections	1451
<i>Kien Nguyen, Amin Mehrabian, Ashok Santra, Dung Phan, Arpita Bathija</i>	
An Integrative Software Platform to Support Drilling Operations in Troublesome Formations	1465
<i>Yanhui Han, Chao Liu, Dung Phan</i>	
Managing Wellbore Stability Challenges for an Optimum Well Delivery; Case Study, Balsam Field, Nile Delta, Egypt.....	1484
<i>Wael El Sherbeny, Ashraf Baghdady, Ali Farag, Johannes Vossen</i>	

CCUS I: MODELING & WORKFLOWS

Locating CO2 Leakage in Subsurface Traps Using Bayesian Inversion and Deep Learning.....	1507
<i>Zhen Zhang, Xupeng He, Yiteng Li, Marwa AlSinan, Hyung Kwak, Hussein Hoteit</i>	
Development of a Screening Framework for Re-Use of Existing Wells for CCUS Projects Considering Regulatory, Experimental and Technical Aspects.....	1516
<i>Maartje Koning, Vedran Zikovic, Kaj Van der Valk, Rajesh Pawar, John Williams, Nils Opedal, Alexandra Dudu</i>	

UNCONVENTIONAL RESERVOIRS COMPLETIONS I

Enhancing Fracture Network Complexity Using Carbonated Slickwater Fracturing	1528
<i>Prasad Karadkar, Murtadha J. AlTammar, Mohammed Alabdrabalnabi, Ahmad Busaleh</i>	
First Microseismic Monitoring of Hydraulic Stimulation in Bahrah and Sabriyah Fields, Northeastern Kuwait.....	1537
<i>Sebastien Rajeul, Eric Fortier, Ernesto Barbieri, Sabry Abd El-Aziz, Chintamani Vemparala</i>	

CHEMICAL EOR

Managing Adequate Gas EOR for Unstable Asphaltene Stability Field? Asphaltene Flow Assurance Pre-Risk Assessment Case Study for CO2, Enriched Gas, and Lean Gas Options	1562
<i>Masaaki Tange, Takeshi Hiraiwa, Khuloud Tareq Khlaifi, Risa Sakurai, Sami Bahri, Abdalla Abdelfattah Abed, Hiroshi Uematsu, Ken Makishima, Yuto Inokuma, Masaru Sawata, Sultan Hamdan Alkaabi, Hideharu Yonebayashi</i>	
A Novel Chemical Formulation for Heavy Oil Viscosity Reduction and Heavy Oil Displacement	1578
<i>Shaohua Chen, Ming Han, Abdulkareem AlSofi, Tianping Huang</i>	

POLYMER FLOODING

- An Enhanced Synergistic Effect in Surfactant-Polymer Flooding Under High-Temperature and High-Salinity Conditions..... 1591
Shaohua Chen, Tianping Huang, Ming Han, Abdulkareem AlSofi
- Integrating High Resolution Sector Scale Dynamic Modeling into a Successful Long Term Pilot Polymer Injectivity Test for the Wara Reservoir of the Greater Burgan Field of Kuwait 1605
Mohammed Taha Al-Murayri, Abrar Al-Qattan, Al-Ghanim Wafaa, Shweta Kakade, Anirban Banerjee, Carlos Mascagnini, Rafael Khamatdinov, Muhammed Ali Chughtai, Alexey Andrianov, Pitts Malcolm

ADVANCES IN DATA ACQUISITION AND ANALYSIS IN PETROPHYSICS

- Unlocking Fracture Characterization Ambiguity a Multi Disciplinary Integrated Approach..... 1626
Ali Abughneej, Mohamed Al Naqeeb, Moahammed Al-Ostath, Fatemah Albanay, Muhammad Abd El Dayem, Nasser Al-Hamad, Abdullah Al-Jamaan, Laila Akbar
- Real-Time Facies Characterization Using LWD NMR Factor Analysis in High-Angle Wells..... 1635
Gabor Hursan, Marie Van Steene
- Identifying Fracture Sweet Spots Using Artificial Neural Network Approach: A Case Study in Najmah/Sargelu Reservoir, Kra Al-Maru Field, West Kuwait..... 1648
Kim Long Nguyen, Meshael Jumah, Naveen Verma, Riyadh Quttainah
- Digitally Derived Capillary Pressure Data for Reservoir Evaluation 1660
Mohammed Al Hamad, Denis Klemin, Mark Ma Shouxiang, Wael Abdallah
- A Systematic Workflow of Optimum Log Data Acquisition and Integrated Formation Evaluation of Laminated Sand-Silt-Clay Deep-Water Reservoir - A Case Study from Offshore Malaysia 1673
Saikat Das, Viet H. Nguyen, Fadzilazri Shapiei, Stephen Dymmock, Amirul Afiq Yaakob, Amirah Thaqifah Mahamud, Siti Najmi Farhan Zulkipli, Dzulfadly Johare, M Fazli Izham Zakaria, Izral Izarruddin Marzuki
- Rigless Mineralogy Logging- A Reality for Improved Evaluation of Complex Formations 1695
Marie Van Steene, Shouxiang Ma, Sherif Ghadiry

UNCONVENTIONAL RESERVOIRS COMPLETIONS I

- Frac Plug Evaluation to Improve Operations Efficiency 1705
Sohrat Baki, Abdullah Alzamil, Zeyad Habiballah, Emad Shariff, Abdulrahman Alowaid, Wafaa Alnakhli, Hamoud Alshammari, Mohannad Mahfouz
- Preparation and Characterization of Rapid Gelling Agent for Light Hydrocarbons-Based Gelled Fracturing Fluid 1718
Tao Du, Chen Chen, Jiangpeng Feng, Yiming Yao

CHEMICAL EOR

- Superactive Surfactant for Enhanced Oil Recovery 1727
Azizah AlRadhwan, Mohammed Al Hamad, Wael Abdallah

Research of Polymeric Surfactant as Multifunctional Monocomponent Oil Displacement Agent in EOR..... 1739
Zhiqing Su, Hui Xu, Yingcheng Li, Hui Sun, Jun Jin, Bin Wang, Aiqing Ma, Xiujuan He, Ou Sha

Integrated Modelling and Forecasting of Gas Injection Pilot in a Heterogeneous Oolitic Carbonate Reservoir, West Kuwait..... 1750
Akshaya Pradhan, Haya Al-Mayyan, Khaled Ziyab, Peyman Nurafza, Sumit Mishra, Arpit Khandelwal, Anshu Srivastava, Tom Faulkner

CO₂ Huff-n-Puff: An Experimental and Modeling Approach to Delineate Mass Transfer and Recovery from Shale Cores..... 1774
Saeed Alahmari, Mohammed Raslan, Pooya Khodaparast, Anuj Gupta, Jewel Duncan, Stacey Althaus, Kristian Jessen

Scale-Up Fabrication and Microfluidic Evaluation of Janus Graphene Nanofluids as Novel EOR Agent..... 1792
Wei Wang, Sehoon Chang, Gawain Thomas

FLOW ASSURANCE & METERING I

Establishing Critical Gas Velocities for Liquid Loading in Deviated Gas Wells..... 1803
Chidirim Ejim

Successful Application of a Novel High-Pressure High-Temperature (HPHT) Quartz Crystal Microbalance (QCM) Set-Up to the Evaluation of Asphaltene Deposition Inhibitors 1813
Abeer Ghaffoori, Ross Anderson, Mohsen Hoopana, Bahman Tohidi

Prediction of Slug Length for High Pressure Gas/Liquid Two-Phase Flow in Horizontal and Slightly Inclined Pipes..... 1826
Eissa Al-Safran, Ahmed Aql

WELL INTEGRITY

Utilization of Innovative Resin-Cement Blend to Enhance Wellbore Integrity 1845
Wajid Ali, Faisal Abdullah Al-Turki, Athman Abbas, Abdullah Saleh Al-Yami, Vikrant Wagle, Ali Al-Safran

Investigation of Polymer Latex Effects on Cement Mechanical Properties for Improved Wellbore Integrity 1860
Abdullah Al-Yami, Hussam Al-Qahtani, Jaber Nizar, Majad Khan, Muhammad Nawaz Tahir, Vikrant Wagle

Well Integrity Challenges while Drilling in High Pressure and Narrow Window Environment: A Case Study of a Deep Gas Field in the Middle East..... 1874
Efe Mulumba Ovwigho, Mohammed Sami Almomen, Mauricio Corona, Jose Terrez

Tailored Cement Systems with Enhanced Mechanical Properties Designed to Eliminate Sustained Casing Pressure in Development Wells..... 1890
Pushkara Varma Chekuri, Ashish Singhal, Sheraa Kaura, Mikhil Dange, Animesh Kumar, Swarnima Singh

Rigless Repair of Packer Leak Via Annular Cement Plug	1905
<i>Andrey Yugay, Majed Ahmed Majed Ahmed Alkarbi, Yunus Berdiyev, Indra Utama, Mohammed Thani Al Hamadi, Karam Hassan, Afnan Al Marzooqui, Hajer Mohamed Ali J. Alshehhi, Gabriel Rincon, Shamsa Al Menhali, Taha Ramadan, Mohammed Sayed Al Baloushi, Sheriff Hassan Elhanbouley, Evgeny Metlyaev, Indra Respati, Rabie Eliatar, Enggal Setioko</i>	

GEOSTEERING & WELL PLACEMENT

An Innovative and Independent Method for Formation Strengths and Facies Identification Using Real-Time Downhole Drilling Data, and its Application in Geosteering for Optimal Well Placement	1915
<i>Umesh Prasad, Fredrik Jonsbraten, David Holbrough, Craig Saint</i>	
A Novel Engineered Drilling Solution using a Sourceless Geosteering Bottomhole Assembly to Deliver the Longest Extended-Reach Well in a Carbonate Reservoir, Onshore Abu Dhabi, UAE.....	1932
<i>Wael Fares, Ashim Dutta, Rathnakar Reddy, Moahmed Baslaib, Ayman El Shahat, Luis Gerardo Cardozo, Mohamed Abdel Meguid, Mena Nasrallah, Muhammad Mubeen, Ahmet Aki</i>	
Combining Nuclear Magnetic Resonance with Deep and Ultradeep Azimuthal Resistivity Images in Carbonate Reservoirs Links Reservoir Structure with Rock Type while Drilling.....	1942
<i>Osama Ramadan, Umar Idris, Marie Van Steene, Gagok Santoso</i>	
A Workflow to Assess the Effect of Lateral Landing, Completion, and Fracturing on Production Potential in an Explorational Clastic Environment.....	1949
<i>Carlos Herrera, Abdul Muqtadir Khan, Abdulrahman Almulhim, Saad Hamid</i>	
Integration of Geosteering into an Automated Wellbore Placement System, Possibilities and Challenges	1970
<i>David Holbrough, Matthew Forshaw, Stefan Wessling, Saskia Idzerda, Ralf Gelfort, Simon Austin</i>	

RESERVOIR FLUID CHARACTERIZATION

Characterizing Movable and Non-Movable Zones in a Mature Carbonate Reservoir: A Novel Workflow Using Resistivity Logs	1986
<i>Saud Al-Otaibi, Saud Aldajani, Talal Al-Sayyar, Salem Al-Marri</i>	
Significant Impact of Non H-C Gases (NHG) on Reservoir Fluid of a Jurassic, HPHT and Tight Carbonate Discovery in North of Kuwait: A Case Study of a Sour and Critical Fluid Characteristics and Fluid Compartmentalization	1995
<i>Sara Al-Dousari, Haifa Al-Bader, Ahmed Al-Otaibi, Sara Al-Shuaib, Bahaskar Chakrabarti</i>	
Successful Testing and Sampling the Desired Formation Fluids Despite the Challenging Environment in the Middle East.....	2006
<i>Irina Baca Espinoza, Rony Perdigon, Halil Osunluk, Kashif Mushir Khan</i>	
Innovative Approach to Identify PVT Regions in a Sandstone Reservoir in Khafji Field with Geological Events.....	2017
<i>Khaled Al-Qenae, Mohammed Al-Otaibi, Lazreg Belazreg, Mohammad Akhtar</i>	
Estimation of Missing Molecular Weight and Specific Gravity of Heptane Plus Fraction in PVT Laboratory Report	2029
<i>Muhammad Al-Marhoun</i>	

Identification and Mapping of Gas Reservoir Bitumen	2035
<i>Ali J Al Solial, Aijaz Shaikh, Abdullah K Idrees</i>	

MIDSTREAM GAS II

Towards Online Natural Gas Composition Analysis by Low-Field NMR Spectroscopy.....	2044
<i>Oliver Mohnke, Holger Thern, Sergio Ortiz, Anna Swiatek, Andreas Ohligschläger, Anton Duchowny, Pablo Matias Dupuy, Hege Christin Widerøe, Øyvind Leknes, Markus Küppers, Alina Adams</i>	
Unmanned Rotating Equipment for Normally Unattended Installations (nui)	2065
<i>David Bartolini, Daniele Porciani, Alessandro Leto</i>	
Rotating Equipment Switchover Optimization to Enhance Equipment Reliability and Minimize Emissions	2077
<i>Kimjalkumar Gohel</i>	

UNCONVENTIONAL RESERVOIRS CASE STUDIES

Subsurface Integrated Unconventional Reservoir Characterization - A Case Study of Diyab Carbonate Source Rock from Onshore Field, Abu Dhabi, UAE	2084
<i>Amena Alharthi, Muhammad Baig, Hassan Al Marzooqi, Abdulla Al Hashmi, Pierre Van Laer, Trevor Brooks, Abdulla Al Blooshi, Marco Coscia</i>	
Correlation of Borehole Images in Conductive and Non-Conductive Muds to Understand Carbonate Heterogeneity: Case Study from Sichuan Basin, China	2093
<i>Kejun Hou, Zuoan Zhao, Gensheng Ni, Gamal Sultan, Bo Liu, Tianhua Zhang</i>	
UAEs Unconventional High-Pressure/High-Temperature (HPHT) Shale Gas Play Appraisal Technical and Operational Learnings	2106
<i>Azeizah Al hassani, Pierre Van Laer, Trevor Brooks, Muhammad Z. Baig, Serif Elazab, Didier Caillon, Yang Wu, Leandro Kolton</i>	

VOLUME 4

ADVANCED DRILLING TECHNOLOGY I

Down Hole Data Driven Optimization on Bit, Parameters and BHA Lead to an Outstanding Performance in Deep Gas Drilling	2117
<i>Rami Kouzaiha, Christopher Cleboski, Kyle Vrnak, Dustin Daechsel, Nadir Al Rawahi</i>	
Advanced Hole Cleaning in Horizontal Wells: Experimental Investigation Supported by a Downhole Clamp-On Tool	2136
<i>Jelena Skenderija, Alexis Koulidis, Domingo Lattanzi Sanchez, Shehab Ahmed</i>	
The Industry's First Real-Time Pseudo Gamma Measurements From an Instrumented Steerable Motor Using High-Frequency Drilling Dynamics Sensors	2144
<i>Junichi Sugiura, Steve Jones</i>	
Successful Introduction of a Novel, High Dogleg Rotary Steerable System.....	2153
<i>George Sutherland, Jeff Lasater, Gary Althoff, Jaywant Verma</i>	

Environmentally Friendly Nanoshale Inhibitor Water-Based Drilling Fluids	2171
<i>Hassan Sakar Alqahtani, Mohammed Khaled Arfaj, Mohammed Faisal Alhassni, Mohammed Abdullah Alotaibi</i>	

Successful Casing-While-Drilling Operation in West Kuwait Saves 17 Rig Days and Reduces Well Delivery Time and Well Cost.....	2178
<i>Nasser AL-Hajri, Ali Dawood Al-Khaldy, Jassim Hassan, Satya Gupta, Reham Dashti, Mohammed Abdel Kader, Zainab Al-Buloushi, Ayomarz Homi Jokhi, Mahmoud El Kady, Naser Al-Saad, Shahad Al-Muzaini, Mariam Al-Houti, Saad Al-Harbi, Naser Al-Kanderi, Delimar Herrera, Jeremy Halma, Sameh Ibrahim, Omar El Sheikh</i>	

WELL INTERVENTION II

Wellhead Protective Measures During Well Stimulation Operations; Current Limitations and New Horizons	2187
<i>Mohammed Mukhlifi, Mansour Al-Aamer, Pandu Wirawan, Mohammed Muqri, Mohammad Saeed</i>	

Advancements in Remedial Sand Control Solutions - Successful Deployment in Three Well Campaign	2196
<i>Eilidh McKay, Nicola Wigg, Keith Parrott, Baida Iqlima</i>	

Intelligent Coiled Tubing Systems: Overview, Research Trends, and Challenges.....	2208
<i>Chengxi Li, Harpreet Singh, Peng Cheng, Xunjie Wang, Ge Hao, Qing Liu</i>	

Streamlining Overshot BHA's: A Guideline to Optimize Fishing in Horizontal Wells.....	2219
<i>Sulaiman Almansour, Elspeth Crawford, Bader Alzahrani, Zahaezuani Rafiq Hamidon</i>	

First Time Ever Rigless Securement of Offshore Gas Well with Deep Plug Prior Workover	2226
<i>Gilberto Mata, Kamal Aghazada, Mohammad Alghrairy</i>	

HYDRAULIC FRACTURING I

Hydraulic Fracturing of Highly Azimuthally-Deviated Horizontal Wells Enhanced by Wellbore Notching	2235
<i>Murtadha J. AlTammar, Khalid M. Alruwaili, Hussain K. Al-Dakheel, Gallyam Aidagulov, Mustapha Abbad</i>	

A Simulator for Minimizing Openhole Breakdown Pressure through Notch Shape Optimization	2247
<i>Yanhui Han, Murtadha J. AlTammar, Khalid M. Alruwaili</i>	

CCUS II

CO2 Mineral Trapping Potential of Carbonates: A Numerical Investigation.....	2259
<i>Johny Mouallem, Ahmed Fathy, Muhammad Arif, Mohamed Mahmoud</i>	

Tailored Engineering Cementing Solution to Maintain Well Integrity in Shallowest Liner for Underground Gas Storage Project - Case History from Southwest China	2273
<i>Fangfang Li, Devesh Bhaisora, Huang Yue</i>	

Modeling CO2 Geologic Storage Using Machine Learning.....	2283
<i>Ammar Alali</i>	

An Overview of Advanced Subsurface and Surface Measurements for CCUS Project	2298
<i>Alia I Al-Zayani, Pramod D. Patil, Abdulaziz S. Al-Qasim, Sunil L. Kokal</i>	

BOREHOLE GEOSCIENCES II

Improved AMD Nanosheet System to Increase Oil Production Under Harsh Reservoir Conditions	2313
<i>Dongqing Cao, Ming Han, Mohanad M. Fahmi, Abdulkareem M. AlSofi</i>	

UNCONVENTIONAL RESERVOIRS COMPLETIONS II

Enabling Reliable Stimulation of Multiple Perforated Intervals in a Thick Laminated Reservoir: Lessons Learnt in Successful Sequenced Fracturing Evaluation	2324
<i>Adnan Asif, Abdul Muqtadir Khan, Abdulaziz Alaqeel, Rifat Kayumov</i>	

Salvaging Restricted Entry Unconventional Lateral Sections through the Utilization of Multi Stage Diversion Frac	2340
<i>Maram Zakary, Abdulrahman Alowaid, Sohrat Baki, Abdulaziz Alowaid</i>	

Maximizing Productivity Index by Minimizing Fluid, Proppant and Additive Volumes	2348
<i>Jose Rueda, Abdullah Alzamil, Abdulrahman Alowaid, Jose Valbuena, Rashed Alnaimi</i>	

Evaluation of Slickwater Refrac Treatments Utilizing Mechanical and Formation Diversion Techniques to Extend Wells Productivity	2362
<i>Wafaa Alnakhli, Zeyad Habiballah, Sohrat Baki, Abdullah Alzamil, Jose Rueda, Abdulrahman Alowaid, Karim Mechkak</i>	

Using Tracer-Based Technologies for Production Profiling in a Hydraulic Fracture to Optimise the Hydraulic Fracturing Design	2371
<i>Vishwajit Upadhye, Evgeny Malyavko, Denis Kashapov</i>	

Perforation Efficiency Estimation Through Soft Shutdown Results in Multi-Stage Slickwater Stimulated Wells	2389
<i>Halah Alghanim, Abdulrahman Alowaid, Sohrat Baki, Nouf Alsulaiman</i>	

AI AND BIG DATA IN DRILLING

Graph-Based Temporal Process Planning and Scheduling for Well Drilling Operations	2397
<i>Maksimilian Pavlov, Nikita Bukhanov, Sergey Safonov</i>	

Artificial Well Engineering Intelligence (Awel): Is It Drilling Engineer's Dream or Driller's Nightmare?	2408
<i>Robello Samuel, Kiran Kumar</i>	

Viscometer Readings Prediction of Flat Rheology Drilling Fluids Using Adaptive Neuro-Fuzzy Inference System	2418
<i>Ahmed Abdelaal, Salaheldin Elkatatny, Ahmed Ibrahim</i>	

Towards Real-Time Bad Hole Cleaning Problem Detection Through Adaptive Deep Learning Models	2424
<i>Philippe Nivlet, Knut Steinar BJORKEVOLL, Mandar Tabib, Jan Ole Skogestad, Bjornar Lund, Roar Nybo, Adil Rasheed</i>	

Utilizing Drilling Data and Machine Learning in Real-Time Prediction of Poisson's Ratio	2435
<i>Osama Mutrif Siddig, Salaheldin Elkatatny</i>	

Sidetrack Trajectory Success Indicator	2444
<i>Graham Hitchcock, Andrew Watson, Meshari Alshalan</i>	
First Successful 16 X 13.375-in. Casing-While-Drilling Operation in Kuwait Saves 27 Rig Days and Reduces Well Delivery Time.....	2452
<i>Saleh Muqeeem, Mohammed Al-Mulaiifi, Yasser Al-Assil, Anish Sekhri, Mai Yacoub Sulaiman, Chandra Shekhar, Ibrahim Abdelrahman, Talal Abdulkareem, Ayomarz Homi Jokhi, Mahmoud El Kady, Naser Al Saad, Shahad Al Muzaini, Fatemah Mataqi, Saad Al Harbi, Naser Al Kanderi, Delimar Herrera, Jeremy Halma, Sameh Ibrahim, Biju James</i>	
Starter Wellhead: Achieving Mechanical Barrier Isolation in Large Casings Annuli While Countering Wellhead Thermal Growth	2461
<i>Mohammed Eid Mukhlifi, Pandu Wirawan, Mansour Abdullah Alamer</i>	
Transforming a Mechanical Vertical Drilling Tool into a Digitally Controlled Rotary Steerable Tool - The Journey of Design, Development, Testing and Commercialization	2467
<i>Steve Jones, Junichi Sugiura</i>	

HYDRAULIC FRACTURING II

Understanding the Key Factors Affecting Well Integrity in Horizontal Well Multistage Hydraulic Fracturing	2482
<i>Waheed Arshad, Khaqan Khan</i>	
Geomechanical Analyses of Hydraulic Fracturing Efficiency and Challenges in a Tight Clastic Reservoir: Experiences Over Years.....	2497
<i>Johannes Vossen, Wael El Sherbeny, Satya Perumalla, Osman Hamid, Waheed Arshad</i>	
Maintaining Hydraulic Fracture Conductivity Under High Stresses through Consolidation with DAP.....	2511
<i>Mahmoud Desouky, Murtada Al-Jawad, Murtadha El-Tammar, Khalid El-Ruwaili</i>	
Study on Horizontal Well Indirect Fracturing Technology in the Gangue of Broken Soft Coal Seams for CBM Development.....	2520
<i>Xuejiao Li, Haifeng Zhao, Chaowei Wang, Dongchenhao Wang, Wenjie Yao, Huaibin Zhen, Zongfei Wang</i>	
Water Injection Optimization Using Geomechanics and PWRI Fracture Modeling, South of Sultanate of Oman.....	2534
<i>Salim Al-Busaidi, Ruqaiya Al Zadjali, Roger Yuan, Hamid Ghafram, Mohammed Al Amri</i>	

GREEN TECHNOLOGIES

Sulfate Ion Removal from Seawater for Hydraulic Fracturing by Barium Sulfate Precipitation	2547
<i>Jian Hou, Fahd AlGhunaimi, Ming Han, Norah Aljuryyed</i>	
Unleashing the Full Geothermal Potential of Türkiye Through Collaboration and Learning from the Oil & Gas Industry	2559
<i>Selin Pedrosa, Oscar Nicolas Ochoa, Sila Erdurmus, Hatem Oueslati, Muzaffer Siyako, Emre Damci</i>	
Geothermal Pre-Drilling Decision Optimization: Methodologies and Case Histories	2571
<i>Wael ElSherbeny, Kevin McCarthy, Taylor Mattie, Rakan Al-Murshed, Mohammad Alshamry</i>	

Sustainable Ion-Exchange Resins for Produced Water Treatment	2585
<i>Madina Baltaeva, Maxim Orlov, Dong Kyu Cha, Subhash Ayirala</i>	

CEMENTING AND ZONAL ISOLATION I

Multifunctional Cementing Additives, A Way to Improve Rig Time Saving and Annulus Fluid/Gas Migration During Cement Placement.....	2595
<i>Francesco Frittella, Auribel Dos Santos, Hussam Jallad, Stephanie Hartanti, Andreas Sundblom</i>	
Cementing Methods When Encountering Wells with High Background Gases.....	2604
<i>Asim Al Khuwayr, Mahdy Jezany, Joe Shine, Eliud Kagongo</i>	
Chemical Admixture for Right-Angle Set Wellbore Cements	2610
<i>Elizabeth Q. Contreras</i>	
Tailored Dependable Barrier Enables Operator to Flawlessly Complete True One Trip Ultra Slender Deepwater Well.....	2619
<i>Flávia Koch Ferreira, João Fiorotti, Leonardo Brunherotto, Marcelo Cunha, Jose Luis Paredes, Thiago Piedade, Rafael Peralta, Geraldo Filho</i>	
The Effect of Graphite on the Properties of Class G Oil Well Cement	2633
<i>Muhammad Andiva Pratama, Ahmed Abdulhamid Mahmoud, Salaheldin Elkatatny</i>	
Successful Deployment of Metal Expandable Annular Sealing Systems in High Extended Reach Wells.....	2642
<i>Syed Muhammad Ali, Emmanuel Onyema Nwosu, Nasser Farsi, Kevin Wood</i>	

COMPLETION TECHNOLOGIES

Successful Deployment of First One Trip Integrated Full-Bore Off-Bottom Cemented Closed System ICD Screens Completion	2652
<i>Qadir D. Looni, Malik M. Humood, Syed Abu Faizal, Abdullah Al-Muzayen</i>	
Setting ESP Packer at High Inclination Intervals Using a Creative Completion Design Achieving 30% Completion Time Savings in a Middle East Oil Field.....	2663
<i>Mustafa Almuallim, Rohit Kumar Agarwal, Paul Silva, Jaffar Al Shaikh, Mohammad Al-Herz</i>	
Improved Reservoir Management with Multi Positioning Interval Control Valves in Multilateral Wells.....	2674
<i>Noman Shahreyar, Ben Butler, Muzzammil Shakeel</i>	
Achieving Higher Productivity from Mishrif Reservoir with Multistage Completion Technology: Challenges, Solutions and Performance	2684
<i>Salem Al-Sabea, Milan Patra, Abdullah AbuEida, Sulaiman Mohammad Ali, Saurabh Athana, Ahmed Hadi, Saleh Mahdi Gholoum, Abhishek Singh</i>	

PROCESS SAFETY, RISK MANAGEMENT AND CULTURE

An Engineer's Systematic Approach to Achieving Superior Safety Performances on Drilling Rigs	2694
<i>Basma El-Shamouty, Samuel Osisanya, Md Motiur Rahman, Bisweswar Ghosh, Mark De Athe, Bekheet Al Jasmí</i>	

RTPD Safety Management System Toward Safety Excellence	2713
<i>Muatasem Al Hakami, Majed Al Hamzah</i>	
Promoting a Culture of Behavior-Based Safety (BBS)	2724
<i>Ali Altawal, Mohammed Arakzeh, Rami El-Ashi</i>	
The Niger Delta Process Safety Dilemma: Restoring & Maintaining Well Integrity in the Face of Perennial Asset Vandalization.....	2730
<i>Arthur Bougha, Temitope Alalade, Ugoh Oluwatobi, Nnadozie Eze</i>	

FLOW ASSURANCE & METERING II

Exploration of Novel Sacrificial Fluids for Asphaltene Adsorption Remediation	2743
<i>Isah Mohammed, Dhafer AlShehri, Mahmoud Mohamed, Shahzad Mohammed Kamal, Alade Olalekan Saheed, Sultan Abdullah, Shirish Patil</i>	
Advances in Virtual Flow Metering Using Deep Composite Lstm-Autoencoder Network for Gas-Condensate Wells	2755
<i>James Omeke, Albertus Retnanto</i>	
Asphaltene Testing for Inhibitor Evaluation	2774
<i>David Jennings, Abhishek Golchha, Justin Breitigam, Andrew Yen, Kui Xu</i>	
The Application of Scale Inhibitors for Downhole Capillary Injection Under Ultra High Temperature.....	2790
<i>Dong Shen, Jonathan Stewart, Kung-Po Chao, Stuart Cook</i>	
Selection and Optimization of Demulsifier Based on Physio-Chemical Characteristics of Emulsion	2803
<i>Ali Altowilib, Rahul Gajbhiye, Mohamed Mahmoud, Theis Solling</i>	

VOLUME 5

Synergistic Hydrate Inhibition by Iota-Carrageenan with Kinetic Hydrate Inhibitors	2820
<i>Ajay Suri, Ankur Singh</i>	
Modeling Two-Phase Intermittent/Annular Flow Pattern Transition in High Liquid Viscosity Upward Vertical Wells	2838
<i>Eissa Al-Safran, Mohammad Ghasemi</i>	

NEW DEVELOPMENT IN FORMATION

Anisotropic Poroelastodynamics Solution and Elastic Moduli Dispersion of a Naturally Fractured Rock	2854
<i>Chao Liu</i>	
De-Risking Upper Cretaceous A Formation Production by Joining Multiple Technologies in 3D Space	2862
<i>Eduardo Adrian Cazeneuve, Yasmina Bouzida, Vladimir Smirnov, Maniesh Singh, Jahan Zeb Ahmed, Nepal Singh, Rafael Celma, Sami Sheikh Alawi Shehab</i>	
Efficient Through-Casing Surveillance of Steam Chamber and Reservoir Oil Using a New Pulsed Neutron Technology and an Advanced Interpretation Algorithm	2879
<i>Yonghwee Kim, Alexandr Kotov, David Chace, Peng Yuan, Toyli Anniyev, Feyzi Inanc, Ian McGlynn</i>	

Understanding Lateral Permeability Variations Using Integrated Logging-While-Drilling Azimuthally Oriented Formation Testing and High-Resolution Imaging in Heterogeneous Carbonate Reservoirs.....	2892
<i>Ashok Kumar, Ahmed Fateh, Ahmed Taher, Mohamed Fouda</i>	

APPLICATIONS OF AI IN UNCONVENTIONAL RESERVOIRS

Production Forecasting in Tight Gas Reservoirs Using Long Short-Term Memory Methods (LSTM).....	2913
<i>Afrah Qoqandi, Omar Alfaleh, Moemen Ramadan, Uchenna Odi</i>	
Unsupervised Machine Learning for Sweet-Spot Identification Within an Unconventional Carbonate Mudstone.....	2932
<i>Septriandi Chan, Abduljamiu Amao, John Humphrey, Yaser Alzayer</i>	
Identifying and Ranking Multiple Source Models for Transfer Learning in Unconventional Reservoirs.....	2937
<i>Jodel Cornelio, Syamil Mohd Razak, Young Cho, Hui-Hai Liu, Ravimadhav Vaidya, Behnam Jafarpour</i>	
Development of a Deterministic Total Organic Carbon (TOC) Predictor For Shale Reservoirs.....	2952
<i>Mohammad Rasheed Khan, Shams Kalam, Abdul Asad, Sidqi A. Abu-khamsin</i>	
A Dynamic Residual Learning Approach to Improve Physics-Constrained Neural Network Predictions in Unconventional Reservoirs.....	2961
<i>Syamil Mohd Razak, Jodel Cornelio, Young Cho, Hui-Hai Liu, Ravimadhav Vaidya, Behnam Jafarpour</i>	
Optimizing the Hydraulic Fracturing Fluid Systems Using the Completion and Production Data in Bakken Shale.....	2973
<i>Najd Alotaibi, Serkan Dursun</i>	
An Innovative Machine Learning Method for Predicting Well Performance in Unconventional Reservoirs with a Relatively Small Data Set.....	2986
<i>Hui-Hai Liu, Jilin Zhang, Cenk Temizel, Moemen Abdelrahman</i>	

POLYMER FLOODING

Preparation and Properties Investigation on Sand-Polyacrylamide Composites with Engineered Interfaces for Water Shutoff Applications.....	3003
<i>Ayman Almohsin, Mohan Raj Krishnan, Edreese Alsharaeh, Bader Harbi</i>	
Laboratory Assessment of Rock Wettability Effect on Polymer Retention in Carbonates	3012
<i>Álvaro Hernández-Morales, Muhammad Mushtaq, Anoo Sebastian, Emad W. Al-Shalabi, Waleed AlAmeri</i>	
Transforming Challenges into Opportunities to Design Fit for Purpose Long Term Polymer Injectivity (LTPI) Pilots in Umm Gudair Minagish Oolite Reservoir, West Kuwait	3028
<i>Mohammad Yunus Khan, Dawood Kamal, Haya Ebrahim Ali Al-Mayyan, Akshaya Kumar Pradhan, Satish Kumar Eadulapally, Mohammed Taha Al-Murayri</i>	

4TH INDUSTRIAL REVOLUTION III

3D Printed Rocks - An Emerging Technology for Systematic Petrophysical Studies.....	3051
<i>Shouxiang Ma, Guodong Jin, Ryan Antle, Brian Wieneke</i>	
Digital Twin of Degradable Fluid Loss Additive Supported by Advanced Slurry Flow Model	3062
<i>Vadim Isaev, Abdul Muqtadir Khan</i>	
Efficient Implementation of Reverse Time Migration Seismic Imaging on FPGAs	3071
<i>Alhussain Ibrahim, Abdullah Alsultan, Muhammad Elrabaa, Aiman El-Maleh, Thierry Tonellot</i>	
Magnetic Sensors for Navigation of Untethered Downhole Robots.....	3082
<i>Huseyin Seren, Max Deffenbaugh, Mohamed Larbi Zeglache, Ahmed Bukhamseen</i>	
Maintaining Wellbore Safety: Closed-Loop Limit Control of Tripping Operations	3091
<i>Pedro Arevalo, Gerald Becker, Roland May, Alaa Alalawi, Matthew Forshaw, Sergiy Grymalyuk, Yazeed Qahtani</i>	
Optimization Model of Fracture Parameters of Shale Gas Fracturing Horizontal Well Based on Genetic Algorithm.....	3105
<i>Xurong Zhao, Tian Lan, Zekai Tang, Lingyu Mu, Lianbo Hu, Zhigang Song, Zhiming Chen, Yicheng Zhou</i>	
NGL Operation Strategy Using Predictive Analytics.....	3117
<i>Abdulaziz Qurashi</i>	

EXTERME DRILLING ENVIRONMENTS

Technical Challenges and Strategic Solutions for a New Historical Milestone: The Success of Delivering the First Two 10 K ft Lateral Wells in an Unconventional Drilling Operation	3132
<i>Guoqiang Yin, Salahaldeen Almasmoom, Mohammad Ali, Nawaf Almalki</i>	
Technical Limit Pursuit - Unconventional Engineering Toward Maximizing Performance While Overcoming Drilling and Tripping Challenges	3151
<i>Salahaldeen S Almasmoom, Faris A Al-Qahtani, Nadhir Rahmani, Ayman Ghazzawi</i>	
Coiled Tubing Drilling Advancement with Smallest Shaped Diamond Cutting Element	3173
<i>Syed M. Siddik, Pablo Rojas, Jonathan Lee Quintero Barrera, Mahmoud Alraheb</i>	
Managing High Bottom-Hole Circulating Temperature Challenges in Slim Long Horizontal Wells: A Case Study from a Giant Gas Field in the Middle East	3186
<i>Efe Mulumba Ovwigho, Mohammed Sami Almomen, Mauricio Corona, Jose Terrez</i>	
Hydraulic Casing Reamer Shoe Lands Casing in Problematic Wellbores	3198
<i>Allan Pearson, Mark Luchak, Robert Curle</i>	
Comparison of Zirconia Nanoparticles with Conventionally Used Silica Nanoparticles for HTHP Drilling Applications	3206
<i>Hafiz Mudaser Ahmad, Tanveer Iqbal, Saima Yaseen, Yousif Yagoob AlNabbat, Mobeen Murtaza, Mohamed Mahmoud, Shirish Patil, Muhammad Shahzad Kamal</i>	

CEMENTING AND ZONAL ISOLATION II

- Delivering Zonal Isolation Assurance in Challenging Long Horizontal Dual Lateral 8- ½-in Hole Reservoir Section—A Case Study in UAE Offshore Field 3217
Azza El Hassan, Mohamed Samir Abdellatif, Ahmedagha Hamidzada, Kerron Andrews, Takahiro Toki, Thein Zaw Phyo, Jose Salazar, Mohd Waheed Orfali, Erika Mozes
- Complex Micro-Containers (CMC) Transporting Compartmentalized Reaction Mixture for Self-Healing Cement 3233
Madina Baltaeva, Katerina Stamer, Maxim Orlov
- Zero Losses Implementing a Heavyweight Engineered Spacer While Cementing a Rotatable V0 Expandable LinerHanger 3247
Adriana Contreras Nino, Mahmoud Alabbad, Alejandro De La Cruz, Kory Hugentobler
- A Novel Approach for Tailored Cement Job Design and Placement to Mitigate Losses 3256
Siva Rama Krishna Jandhyala, Krishna Yerubandi, John Paul Bir Singh, Ronnie G Morgan, Walmy Cuello Jimenez
- A Geopolymer System for High Pressure Oil and Gas Well Cementing 3267
Ahmed Abdelaal, Salaheldin Elkatatny, Ahmed Abdel Fattah
- Extending the Range of Cement Evaluation 3273
Sarah AlArfaj, M. Aiman Fituri, Mukesh Shastri, Nitin Rane, Jassim Al-Kanderi, Muhanad AlMohailain, Sanjeev Baijal, Fahad Al-Qadhi, Joseph Ekpe, Saleh Al Farai

ENVIRONMENT STEWARDSHIP AND PRODUCED WATER

- Towards Sustainable Excellence & Biodiversity Protection in Upstream O & G Facility 3292
Ali Alsinan, Khalilur Rehman, Ahmad Bakodah
- Corporate Sustainability Culture in Oil and Gas Industry – Enablers and Challenges 3302
Alicja Fryc, Caroline Marshall Brown

SCALE & CORROSION MANAGEMENT

- Reviving Production From Over 100 Deep Gas Wells Suffering From Halite Deposition In Oman Thru Velocity String 3318
Ahmed Al Rashdi, Babak Ghaempanah, Amira Al Hijri, Wouter Koot, Panteha Bolourinejad, Thabit Al Daraai, Ibrahim Al Battashi, Kamran Awan
- New Horizon for Downhole Scale Management Towards Sustained Well Production 3330
Hussain Almajid, Ibrahim Thwaiqib, Carlos Ribeiro, Khuloud Alghamdi
- Chelating Chemicals: A Solution to End the Battle with Calcium Sulfate Scale 3341
Fares Alotaibi, Tariq Almubarak, Luai Alhamad, Abdullah Al Moajil

ROCK MECHANICS TESTING

- Rock Mechanical Characterization of Shale-Drilling Fluid Interactions to Mitigate Borehole Instability Problems 3355
Mohammad Alqam, Md Amanullah, Salem Algarni, Adnan Almakrami

Strengthening of Carbonate-Based Formation Rocks Natural, Sustainable Materials	3372
<i>Abeer A. Alarawi, Murtadha J. AlTammar, Khalid M. Alruwaili, Jasim A. Alrubeih</i>	

UNCONVENTIONAL RESERVOIRS ASSESSMENT AND ECONOMICS

Geological Risks and Resources-Based Portfolio Ranking and Completion Optimization by Areas: An Eagle Ford Case Study	3380
<i>Sahyun Hong, Ahmed Fataierge, Abdulkarim Zahrani</i>	
Stochastic Economic Ranking – A Prudent Way to Address Risk and Uncertainty for Decision Makers	3387
<i>Mahesh Narayanan, Mehaboob Abdulazeez, Khadija Bukhamsin, Nawaf Alshehri</i>	
A Method for EUR Forecasting in Unconventional Reservoirs Using Early Flowback Data	3399
<i>Ihab Mahmoud, Nouf Alsulaiman</i>	

HYDROGEN TECHNOLOGIES

Effect of Grid Resolution on Underground Hydrogen Storage Compositional Reservoir Simulation	3406
<i>Muhammad Alhotan, Mojdeh Delshad, Kamy Sepehrnoori</i>	
Impact of Permeability Heterogeneity Coupled with Well Placement Strategy on Underground Hydrogen Storage Reservoir Simulation	3418
<i>Muhammad Alhotan, Cunqi Jia, Abdulhamid Alsousy, Mojdeh Delshad, Kamy Sepehrnoori</i>	
Advancement and Prospective of Hydrogen Generation from Hydrogen Sulfide Via Electrolysis Decomposition Approaches.....	3430
<i>Ming Han, Xuan Zhang, Saleh Hassan, Ali Al-Yousef</i>	

DRILLING AND COMPLETION FLUIDS

Innovative Solid Lubricant Solution to Reduce Friction in Challenging ERD wells	3446
<i>Tulio Olivares, Zach Turi, Brandon Hayes</i>	
Optimization of Rheological Models for Invert Emulsion Drilling Fluids using Novel Algorithms	3455
<i>Ismail Hakki Gucuyener, Onur Kazim Gurcay, Abdiussamed Yanik, Ahmet Ay, Elif Alyamaç Seydibeyoglu</i>	
Development of a New Inhibitive Fluid to Mitigate Shale Drilling Problems	3475
<i>Mohammad AlArfaj, Hassan Alqahtani, Turki Alsubaie, Mohammad alotaibi</i>	
Expandable Resin for Countering Severe Loss Circulation	3482
<i>Vikrant Wagle, Jothibas Ramasamy, Khawlah Alanqari, Abdullah AlYami</i>	
High-Density High-Strength Phase Transforming Lost Circulation Material to Cure Severe to Total Losses in Reservoir and Non Reservoir Sections	3489
<i>Pranjal Sarmah</i>	
Polymeric Water Based DIF (Drill-in Fluid) Improved Design to Stabilize Complex Wellbores	3497
<i>Gonzalo Chinaea, Luigi Moroni, Syed Shujath Ali, Nils Kaageson-Loe</i>	

DRILLING AND WELL DESIGN OPTIMISATION

- Initiate Best Practice through Brilliant Planning and Executing of Drilling Level I Multilateral Horizontal Well in Kuwait to Accomplish Cost Optimization & Land Space Utilization 3506
Nasser AL-Hajri, Ali Al-Khaldy, Jassim Hassan, Ali Boukhamseen, Reham Dashti, Fahad Alotaibi, Satya Gupta, Deepanshu Chawla
- New Well Design and Drilling Practices Changes Ensured Well Integrity Across Highly Fractured Carbonate Formations in Total Losses Area 3517
Mohamed AlMahroos, Nata Franco, Jesus Levario, Mauricio Corona

VOLUME 6

- Executing the Digital Well Plan - Enhancing Process Automation..... 3527
Olof Hummes, John D. Macpherson, Kimberley Bone, Gaurav Marwah, Pedro Arévalo, Matthew Forshaw
- Mechanical Shock Response Analysis of Rilling Microchips for Optimal Performance Evaluation 3546
Sherif Adekunle Tella, Bondong Li, Sanguo Li, Guodong David Zhan
- The Evolution of Hard Rock Drilling in Norway: How New Technology Solved an Old Challenge 3555
Paul Pasquale Baruffati, Marcel Emile Ngueguim
- New Engineering Approach to Avoid Twist Off Using High Frequency Drilling Dynamic Data 3570
Jose Rojas, Tariq Bilal, Nestor Campos, Ahmed Osman

ADVANCES IN WELL STIMULATION & FRACKING

- New Insights for the Use of Lactic Acid in Carbonate Acidizing 3584
Luai Alhamad, Sinan Caliskan, Basil Alfakher, Hussain Ibrahim
- Integrated Workflow of Acid Stimulation Evaluation and Selection for Productivity Enhancement in Carbonate Rocks..... 3593
Arlen Sarsekov, Abdalla Abed, Mohamed El Gohari, Abraham Ryan, Bulat Kamaletdinov, Wael Mahmoud, Vaishak Arali, Philippe Enkababian
- Re-Defining Successful Use of Multiple Stage Fracturing Technology in Tight Gas Wells..... 3608
Waheed Arshad, Zuhair Hassan
- The Impact of Salt Ions on the Rheology of a Crosslinked Polymer Containing a Chelating Agent 3615
Amro Othman, Mobeen Murtaza, Murtada Aljawad, Muhammad Kamal, Mohamed Mahmoud, Rajendra Kalgaonkar
- Unique Solution to a Challenging Multilateral Well Intervention Using an Electric Multilateral Tool and Distributed Temperature Diagnostics on Coiled Tubing in a West Kuwait Field 3628
Salem Hamad Al Sebea, Abdullah Ibrahim Abu-Eidah, Milan Patra, Malak Yousef ALKhayouti, Mohammed Mousa Bumijdad, Abdulaziz Al-Hamdan, Nakul Khandelwal, Sapna Chawla, Abdulatif AlWazzan, Mohammad Alkreebani, Joshua Travesso
- New Formulation for High Temperature Acidizing Treatment Using Sustainably Sourced Additives..... 3646
Jiang Li, Stewart Suzanne, Abbott Jonathan

CONVENTIONAL AND UNCONVENTIONAL RESERVOIRS

Assessing Geological Deformation Using Distributed Fiber Optic Sensing	3655
<i>Seth Buseti, Vladimir Kazei, Harold Merry</i>	
Innovative Workflow for Wellbore Stability Evaluation Using Logging-While-Drilling Technologies	3668
<i>Mohamed Fouda, Ahmed Taher, Mohammed Al-Hassan</i>	
Integrated Geo-Mechanical and Bedding Plane Analyses to Optimize Horizontal Well Drilling Performance in Shale Oil Reservoirs.....	3689
<i>Heqiang Wang, Haitao Guo, Bing Guo, Yongsheng Zhou, Shanshan Wang, Seehong Ong, Dong Wang</i>	
Critically Stressed Faults and Fractures Analysis.....	3702
<i>Abdullah Alhasan, Yahya Qahtani</i>	
Real-Time Borehole Breakout Identification Utilizing Ultrasonic Amplitude Images in a Slim Borehole	3709
<i>Mohammed Al Zayer, Ali Solial, Ahmed Taher, Ali Al Maimani</i>	
A Breakdown Pressure Prediction Model with Borehole Geometry Effect Considered	3728
<i>Yanhui Han, Mustafa Almutawa, Shengli Chen</i>	

RESERVOIR MANAGEMENT

A New Water Shut-Off Technology Using Sized Calcium Carbonate Particles in Safah Field, Oman	3739
<i>Abdulaziz Ali Al Shuaibi, Khalil Hassan, Khalid Nasser Al Ghammari, Rupam Bora, Wahiba Al Sarkhi, Mohammed Zahir Al Aghbari, Khalid Ali Al Ghammari, Salim Al Salmi</i>	
Fit-For-Purpose Model for Dielectric Data Interpretation for Enhanced Formation Evaluation.....	3749
<i>Wael Abdallah, Ahmed AlZoukani, Mohammed Al Hamad, Shouxiang Ma</i>	
The Drilling and Completion of the First Ever Water Disposal Wells in the Middle Gachsaran Formation of Miocene Age, in Abu Dhabi, UAE, Significantly Reduces the Pilot Project OPEX and Associated HSE Risks	3777
<i>Riaz Khan, Helal Ali Al Dhanhani, Osama Gouda Akl, Atef Abdelaal, Mohamed Sameer Amin Ahmed, Redy Kurniawan, Abdulla Al Ameri</i>	

CCUS III

Dynamic Characteristics of Supercritical CO ₂ Injection in Depleted Carbonate Oil Reservoir for its Sequestration Potential: An Experimental Study.....	3790
<i>Xianmin Zhou, Wei Yu, Yu-shu Wu, Ridha Al-Abdrabalnabi, Sarmad Zafar Khan, Muhammad Shahzad Kamal, Mahmoud Elsayed</i>	
Modeling of Multi-Component and Thermal Flow for Geologic Carbon Sequestration Using Operator-Based Linearization Approach.....	3809
<i>Ajitabh Kumar</i>	

Ranking of Geologic and Dynamic Model Uncertainties for Carbon Dioxide Storage in Saline Aquifers	3819
<i>Harun Ates, Anuj Gupta, Vikram Chandrasekar, Ravimadhav Vaidya, Muhammad AlMajid, Zuhair Yousif</i>	

Enhancing CO ₂ -Foam Stability and Rheology Using Surfactants Mixture	3835
<i>Zuhair AlYousef, Muhammad AlMajid, Amin Alabdulwahab, Othman Swaie</i>	

HUMAN RESOURCE & DIVERSITY

Case Study: People Development and Rapid Organization Building During Challenging External Environment	3849
<i>Robin Gupta</i>	

Automating Industrial Training Development Using Text to Speech	3860
<i>Sarafudheen Tharayil, Mazen Abo Shal</i>	

Upskilling the Next Generation of Petrophysicists.....	3867
<i>Masa Dutta, Nikhil Choudhary, Cyril Edem, Sarah Mohammed Almuslim</i>	

Industrial Training Recommendation Systems.....	3879
<i>Sarafudheen Veetil Tharayil, Abdulaziz Almass, Serkan Dursun, Danah Al Mudaifer, Rahaf Al Qahtani</i>	

PROJECT MANAGEMENT

An Empirical Multi-Disciplinary Workflow to Maximize Brown Field Reservoir Surveillance	3884
<i>Basil Al Silwadi</i>	

Iterative Integrated Planning and Scheduling Model in Project Management	3890
<i>Vinod Savji Bopalia</i>	

Small Scale Projects Planning Best Practices in the Oil and Gas Sector.....	3898
<i>Ahmed I. Al-Hawas, Fahad S. Al-Harbi, Kamarul A. Amminudin</i>	

WELL TESTING

An Analytical Model for Pressure Transient Behavior of Acid-Fractured Well in Fracture-Cave Oil Reservoir: A Field Example from Tarim Basin in China	3911
<i>Shuang Ai, Wei Pang, Juan Du, Mike Liu, Syed Tabish Haider</i>	

Applied Well Testing Analysis Considerations in Channel Reservoir Coupled with Dynamic Simulation Model	3923
<i>Rabah Mesdour, Coulibaly Aboubakar, Faisal Almalki</i>	

Assessment of Condensate Banking Growth Using Advanced Pressure Transient Analysis	3932
<i>Ali Al Khamees, Rodolfo Phillips Guerrero, Meshari Alodah</i>	

Downhole Estimation of Relative Permeability using Dynamic Formation Testers: A Novel Approach to Reduce the Uncertainty in Reservoir Modelling Study	3945
<i>Saket Kumar, Parth Joshi, Prakash Bajpai, Akshay Aggarwal</i>	

A Holistic Study on Performance Evaluation of Horizontal Wells and its Implications on Tight Spacing Drilling Strategy in Mauddud Reservoir.....	3960
<i>Lakshi Konwar, Abdullah Garadah, Ebrahim Alawainati, Ajithkumar Panicker</i>	

ENERGY OPTIMISATION

Investigating Separation Efficiency of Oil-in-Water Emulsions Subjected to an Acoustic Field	3985
<i>Mohammed Dayili, Alwaleed Alghamdi, Hala Sadeg, Amr Abdel-Fattah</i>	
Sustainable Energy for Rotating Equipment: Train Driver Technology Selection and Lifecycle Impact Assessment	3996
<i>Hassan Abu Sanah, Peter Goretzki</i>	
Integrated Approach for Water and Energy Management in a South of Oman Cluster	4013
<i>Arw Jabri, Marwan Sawafi, Rihab Sulaimani, Taher Ghailani, Vincent Hugonet, Moh'd Abri, Suleiman Hinai</i>	
Energy Transition in the Oil & Gas Industry – Emerging Technology Trends in the Upstream Sector.....	4025
<i>Bez Buranaj Hoxha, Aravind Nair</i>	

KNOWLEDGE SHARING EPOSTER SESSION 1

Nanomembranes from Polymeric Waste for Produced Water Treatment	4038
<i>Anton Manakhov, Iaroslav Rybkin, Fahd I. AlGhunaimi, Norah W. Aljurryyed</i>	
Optimizing Directional Drilling by Enhancing Bottom Hole Assembly Design in Complex Well Profiles	4049
<i>Sajid Hussain, Waleed Baghdady, Ahmed Al Khalifah, Zeyad Hussein</i>	
Extracting Continuous Profiles of Archie Parameters from Downhole Measurements.....	4058
<i>Wael Abdallah, Farhan Ali, Andrea Valori, Shouxian Ma</i>	
A Novel Approach for Improving Uptime of Water Supply Wells in Oil Fields by Applying Lean Six Sigma	4078
<i>Aisha Al Shukaili, Nayakam Ram, Adnan Al Ghadani, Younis Al Malki, Yoseph Susatyo</i>	
Numerical Simulations of the Flow Past Crescent Cylinders – Flow Monitoring.....	4096
<i>Mohamed Nabil Noui-Mehidi</i>	
Intelligent Gas Production Avails Planning System.....	4105
<i>Mohammed Sadiq Al Saad, Adel Ali Al Qahtani</i>	
Global First 18.625 and 13.375-in Level-2 Casing-While-Drilling Successful Deployment through Open-Hole and Cased-Hole Sidetracked Wellbores to Isolate Severe Unstable Zones	4114
<i>Salahaldeen S Almasmoom, Ahmed Refai, Faris A Al-Qahtani, David B Stonestreet</i>	
Improving Drilling Efficiency and BHA Reliability Using Hybrid-Mode Telemetry.....	4135
<i>Anh Vu Quach, Talgat Berdigozhin, Ingolf Wassermann</i>	
Research on Long Open Hole Clad Technology Based on High Performance Solid Expandable Tubular in Shale Gas Reservoir.....	4145
<i>Guodong David Zhan, Bodong Li, Abdulwahab Aljohar, Bing Wang, Huijuan Guo</i>	

CO2 Sequestration: Sensitivity Analysis of Storage Mass to Multiphase Parameters	4155
<i>Muhammad Majid Almajid, Markus Zechner, Zuhair A. AlYousif</i>	
Production Analysis on Wells Producing with Flow Thru Plugs to Optimize the Usage of HPCT Milling Operations	4165
<i>Abdullah Alsulaim, Fahad Alajmi, Mudhish Aldawsari, Javier Guzman, Bilal Amjad</i>	
High Power Laser Technology Toward the Downhole Applications: The Effect on Permeability	4173
<i>Abdullah Alharith, Sameeh Batarseh, Damian San Roman Alerigi</i>	
Fracture Sealing Efficiency of an Acid Soluble, Expandable and Cementitious Loss Circulation Materials	4181
<i>Ashok Santra, Arthur Hale, Kenneth Johnson, Nicolas Osorio</i>	
Performance Evaluation of Iron Oxide and Graphite Nanoparticles in Water-Based Drilling Muds at HPHT Conditions	4192
<i>Mobeen Murtaza, Azeem Rana, Hafiz Mudaser Ahmad, Mohamed Mahmoud, Shirish Patil, Muhammad Shahzad Kamal, Dhafer Al Sheri</i>	
Improving the Efficiency of Frequent Team Meetings and Engagements at Petroleum Development of Oman (PDO), the Power of Visual Management Approach	4201
<i>Aisha Al Shukaili, Lubna Al Bahri, Nayakam Ram, Kin Tai, Maram Al Busaidi, Hilal Dughaiishi, Yousuf Zaabi</i>	
A Renewed Focused on Cementing Design Has Improved the Cement Bond Log in Shorter Time Wait on Cement Time	4212
<i>Abdullah Saud Al Ruqaishi, Jamal Al Sulaimi, Ahmed Al Shuely, Qais Al Battashi, Hashem Al Sabti</i>	
A Methodology to Evaluate Video Analytics for Drilling Safety Operation using Machine Learning	4221
<i>Sultan Alkaabi, Ahmed AlAzri, Saud AlZakwani, Fadhil Altamimi</i>	

Author Index