

# **SPE Nigeria Annual International Conference and Exhibition 2025**

Lagos, Nigeria  
4 - 6 August 2025

Volume 1 of 4

ISBN: 979-8-3313-2547-3

**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 Society of Petroleum Engineers  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

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

# TABLE OF CONTENTS

## VOLUME 1

### **SESSION: TS 1 - PRODUCTION OPTIMIZATION & OPERATIONS - I**

Leveraging Process Simulation for Modular Refinery Optimization: A Case Study on Water-Box Cooler Retrofit and Crude Distillation Unit Performance Enhancement Available.....	1
<i>Franklin Fidelis, Emmanuel Ayodele, Tonye Wokoma</i>	
Embedding Process Safety Practices in Gas Lift Operations – FZ19 Field Experience Available .....	22
<i>Benjamin Obong, Ngozi Adeleke, Soba Osji-Bells, Oginni Abiodun, Sunday Ukenye, Temitope Olawunmi, Theresa Ewuzie</i>	
A Multi-Tool Approach to Predictive Well Integrity Diagnostics and Management in Oil and Gas Wells Available .....	42
<i>M. C. Okeke, S. N. Ndukwe, A. A. Andrew</i>	
Experimental Study of the Combined Effect of Water Salinity and Flow Rate on Fines Migration in Niger Delta Available .....	53
<i>J. O. Kamalo, P. O. Wachuku, B. Mmata, M. O. Onyekonwu</i>	
Molecular Insight into the Inhibitory Effects of Amino Acids on Natural Gas Hydrate Available.....	64
<i>F. O. Olarinoye, J. A. Ajienka, S. S. Ikiensikimama</i>	
Gas-Condensate Reservoir Productivity: A Critical Analysis of Different Reservoir Dips Available .....	70
<i>Uchenna Daniel Elikee, Bright Bariakpoa Kinata, Kingdom Kponanyie Dune</i>	

### **SESSION: TS 2 - WELL DESIGN, DRILLING & COMPLETIONS - I**

Application of Perforate, Wash, and Cement (PWC) Technology for Annular Remediation in Deepwater Well Abandonment Available .....	86
<i>Augustine Okosun, Osehojie Ojeh-Oziegbe, Oluwatobi Ugoh, Oladokun Adubi</i>	
Examining the Effect of Carbon-Based Nanomaterials on the Electrical Resistivity, Rheological Properties, and Cuttings Carrying Index of Bentonite-Based Drilling Fluids Available .....	101
<i>J. O. Oseh, M. N. A. M. Norddin, A. Kerunwa, I. Ismail, U. I. Duru, J. R. Gbonhinbor, E. N. Ngouangna, N. Okoli, I. M. Onyejekwe, A. O. Gbadamosi, K. C. Igwilo, A. Agi</i>	
Formulation and Evaluation of an Ethylenediaminetetraacetic-Enhanced Calcium Carbonate Scale Dissolver for Improved Efficiency in Oil Well Operations Available .....	121
<i>K. Vaiappuri, M. A. Sidek, M. Z. Jaafar, J. R. Gbonhinbor, A. Agi</i>	
Development and Evaluation of Eco-Friendly Drilling Mud Using Potato Peel Powder and Hematite as Additives Available.....	140
<i>Lukman Abdulsalam Opeyemi</i>	
Successful Management of Wellbore Stability to Mitigate Stuck Pipe Incidents in a Brownfield Development Drilling Campaign: A Case Study of a Land Well in the Niger Delta Available .....	147
<i>J. G. George, O. Okonkwo, A. Akinfolarin</i>	

Performance of Bio-Based Graphene Nanoplatelets Enriched Water Based Drilling Fluid Towards Drill Cuttings Transportation in Directional Wellbores Available .....	169
<i>M. N. Yahya, M. N. A. M. Norddin, I. Ismail, A. A. A. Rasol, J. O. Oseh, M. Sirajo, N. Makwashi</i>	

### **SESSION: TS 3 - DEEP WATER DEVELOPMENT & OPERATIONS**

Numerical Simulation of CO <sub>2</sub> -N <sub>2</sub> Gas Injection with Polymer and Low-Salinity Postflush for Enhanced Oil Recovery in a Moderately Pressured Heavy Oil Reservoir Available.....	182
<i>Idahosa Osahon Ehibor, Ajimosun Isaac, Olare Jemini, Sanda Aba, Hassannah Salami, Mustapha Yusufu, Olalekan Olafuyi</i>	

Application of 4D Seismic in an Integrated Approach to Reservoir Characterization and History-Matching to Locate Waterflood Front and Remaining Oil for Optimized Recovery in a Complex Deepwater Oilfield Available .....	202
<i>Kelvin O. Okpako, Joel Musa</i>	

Seismic Attributes Analysis and Prospect Identification of BOL Field Onshore Niger Delta Available.....	213
<i>N. C. Idowu-Anifowoshe, B. T. Ojo</i>	

Evaluating the Potential of Carica Papaya Leaves Extract as a Green Corrosion Inhibitor for Mild Steel in HCl Medium Available.....	225
<i>N. I. Greatness, V. U. Wachikwu-Elechi, S. S. Ikiensikimama</i>	

Modified Eaton’s Sonic Model for Improved Prediction of Pore Pressure in a Shaly Formation Available.....	238
<i>H. E. Idudje, A. I. Taiwo, A. O. Atiri, F. E. Igbneweka</i>	

### **SESSION: TS 4 - PETROLEUM POLICY DEVELOPMENT AND ANALYSIS**

Predicting the Occurrence of Wax Precipitation in Crude Oil Pipelines Using Machine Learning Available.....	250
<i>Y. S. Gamaliel, B. A. Elizabeth, I. Ayuba, I. K. Kingsley</i>	

Revitalizing Nigeria's Petroleum Industry Through the Wholesale Supply Operations Introduced by the Petroleum Industry Act 2021 Available .....	259
<i>O. K. Nwankwo, B. A. Sayyadi, F. A. Kwaku, A. Danmadami</i>	

Assessing the Determinants of Renewable Energy Investments in Nigeria Energy Sector: A VECM Approach Available .....	267
<i>M. O. Oyegbile, J. E. Okeke</i>	

Quantitative Analysis of the Effect of Energy Policy on Growth of Rural Entrepreneurs in Nigeria Available.....	282
<i>O. O. Olagunju, F. K. Laguda</i>	

Enhancing Energy Efficiency in Refining and Petrochemical Processes: A Review of Current Industry Strategies, Initiatives and Case Studies Available .....	290
<i>A. O. Joledo, Q. A. Quyum, D. A. Adu</i>	

Smart Contracts and Secure Chains: Optimizing Oil and Gas Logistics in a Digital Age Available .....	309
<i>C. I. Okoh, V. O. Odorikpe</i>	

## **SESSION: TS 5 - RECOVERY MECHANISM & PROCESSES - I**

Experimental Assessment of the Rheological Behaviours and Enhanced Oil Recovery Potentials of Pectin Available .....	344
<i>M. S. M. Musa, R. Damin, N. Yekeen, P. I. Nwaichi, C. Umunnawuike, F. Nyah, D. Abutu, B. Money, J. Gbonhinbor, E. O. Nwaichi, A. Agi</i>	
An Innovative Workflow for Predicting Residual Oil Saturation and Displacement Efficiencies for Subsurface Models from SCAL Data Available .....	363
<i>David Alaigba, Tolulope Amsata-Awani, E. C. Kalu, David Anomneze, Onyekachi Ihebuzor</i>	
Characterization of Synthesized Carbon Nanomaterials from Coal Available .....	377
<i>A. Ozigi, A. Gimba, A. Salihu</i>	
Synthesis, Characterization and Oil Recovery Mechanisms of a Novel Polymeric Nanofluid for High Temperature and High Salinity Oil Reservoirs Available .....	390
<i>M. Al Ani, M. A. Sidek, M. Z. Jaafar, J. R. Gbonhinbor, D. Abutu, B. Money, A. Agi</i>	
An Analysis of the Effects of In-Situ Functionalized Nanoparticles on Oil Recovery Via Interfacial Tension Reduction and Wettability Modification Available .....	422
<i>E. N. Ngouangna, I. B. Dzulkarnain, M. Z. Jaafar, J. O. Oseh, F. A. Afolabi, F. Yakasai, A. O Gbadamosi, P. I. Nwaichi, E. P. N. Ntone, D. Abutu, J. R. Gbonhinbor, A. Agi</i>	
Numerical Simulation of Steam Assisted Gravity Drainage Recovery Utilizing CO2 Alternating N2 in a Niger Delta Reservoir Available .....	436
<i>Idahosa Osahon Ehibor, Gbenga Maku, Magnus Amaefuna, Suraju Oyekade, Johnson Agbo, Eresinkumo Goodhead, Onaiwu Oduwa, Emeka Okoro, Olalekan Olafuyi</i>	

## **SESSION: TS 6 - RESERVOIR DESCRIPTION, ENGINEERING & MANAGEMENT - I**

Utilizing Advanced Stratigraphic Quantification Technique to Assess the Spatial Variability of A-03 Reservoir, Case Study – Onshore Niger Delta Available .....	455
<i>J. A. Onyeji, F. J. Laugier, C. Chukwuka, V. N. Okorie, O. Fagbowore</i>	
History-Matching of Early Gas Breakout in a Saturated Oil Reservoir to Unlock Value and Optimise Further Field Development Available .....	471
<i>M. P. U. John, E. C. Kalu, D. O. Anomneze, O. Meshioye</i>	
Impact of Well-To-Fault Distance and Two-Phase Fluids on the Detection of Faults for CO2 Storage Purposes Using Pressure Transient Analysis Available .....	484
<i>Jude Uchenna Igweajah, Mahmoud Jamiolahmady, Faisal Al-Thawad, Onne Ambrose Okpu</i>	
Comparative Oil Recovery Study Between AICD and ICD Available .....	497
<i>Akujuobi David, Chukwunonso Uche, Olamigoke Olugbenga</i>	
Predictive Analytics for Sand Production: A Machine Learning Study from the Niger Delta Available .....	509
<i>G. T. Omoare, S. O. Isehunwa, A. E. Olaoye, E. Momodu</i>	
Underground Storage of Associated Gas in the Niger Delta: Initial Results and Learnings from a Case Study Available .....	521
<i>Barikorndum Needam, Kazeem A. Lawal, Chimezie Uduba, Adedotun Olalere, Temim Yusuf, Rasak Sunmonu, Cathy Cliff-Ekubo, Segun Owolabi</i>	

## **SESSION: TS 7 - PRODUCTION OPTIMIZATION & OPERATIONS - II**

Petroleum Emulsion Stability Predictions: Performance Evaluation of ANN, GEP and RSM Models Available.....	532
<i>A. A. Umar, A. U. Ibrahim, H. Ahmed, A. A. Sulaimon, I. M. Saaid</i>	
Cutting-Edge Strategies for Flow Assurance and Multiphase Flow Management in Modern Oil and Gas Operations Available .....	550
<i>F. Nyah, N. Ridzuan, M. A. B. Aziz, J. Gbonhinbor, B. Money, P. I. Nwaichi, C. Ummuawuike, A. David, A. Agi</i>	
Removal of Toxic Metals from Petroleum Refinery Wastewater Using a Simultaneous Mixture of Local Materials Available .....	583
<i>T. Eseimieghan, S. G. Udeagbara, M. G. Omofoyewa</i>	
Restoring Value in Gas Production Through Successful Deployment of Foam Assisted Lift Technology for Gas Well Deliquification Available .....	593
<i>Nnamdi Louis Abuah, Tamunotonye Biambo, Imowo Marcus, Patrick Ekeu-Wei</i>	
Data-Driven Approach in Reservoir Production Forecast: Comparison of Machine Learning and Deep Learning Available .....	604
<i>S. I. Muhammad, N. Makwashi, A. Abdulsalam, I. I. Tijjani</i>	
Well Stimulation Using a Microemulsion to Increase Oil Production Available.....	618
<i>C. I. Miete-Ileberi, S. S. Mofunlewi, S. B. Micah, F. E. Nwaru, C. E. Okoye</i>	
Numerical Analysis of Corrosion Rate Induced by Slugging in a Pipeline Available .....	627
<i>Bright Bariakpoa Kinate, Ikechi Igwe, Uchenna Daniel Elikee, Mohammed Othman</i>	
A Comparative Study of the Effectiveness of Selected Chemical Inhibitors for Wax Control Available.....	635
<i>A. Daniel, G. A. Isaac, M. S. Kolawole, O. A. Adesina, S. G. Udegbara</i>	

## **SESSION: TS 8 - RENEWABLES AND UNCONVENTIONAL ENERGIES**

Application of Gamazyme for Enzymatic Enhancement of Cow Dung Anaerobic Digestion for Biogas Production Available .....	649
<i>O. O. Ajaero, A. A. Adeyi, I. I. Olateju, M. G. Omofoyewa, J. O. Ajayi, A. Giwa</i>	
Comparative Analysis of Machine Learning Algorithms for Geothermal Gradient Prediction in Columbia Available .....	660
<i>M. J. Olaoba, T. J. Omotosho</i>	
Comparison on Tribological Responsiveness of Jatropha Lubricant Modified with H-BN on AISI E-52100 Steel and 6061 Aluminum Alloy Materials Available .....	673
<i>Anthony Chukwunonso Opia, Mohd Fadzli Bin Abdollah, Stanley C. Mamah, Mohd Abdul Hamid, Samion Syahrullail, Hilmi Amiruddin</i>	
Optimization of Ethanol Fermentation in a Bubble Column Bioreactor Using Response Surface Methodology with Ferric Oxide Nanoparticle-Modified Supports Available.....	686
<i>D. Abutu, B. O Aderemi, A. O. Ameh, H. W. Yussof, J. Gbonhinbor, B. Money, F. Nyah, C. Umunnawuike, P. I. Nwaichi, A. Agi</i>	

From Abandonment to Renewal: Repurposing Nigeria's Abandoned Oil and Gas Wells for Geothermal Energy Security Available.....	706
<i>Ajimoko Tayo</i>	
Holistic Green Transition for Sustainable Development in Nigeria: Challenges and Prospect of Research and Human Metamorphism Available.....	723
<i>D. I. Egu, A. J. Ilozobhie, A. Akintade, E. G. Antigha</i>	
Enhancing Energy Output in Geo-Pressured Reservoirs: A Metaheuristic Approach to Optimize Enthalpy Production Available .....	731
<i>P. K. Lartey, F. Bonah--Okyere</i>	
Integrating Indigenous Knowledge in Modern Wind Prediction Models Along Coastal Areas: A Nigerian Perspective with Global Significance Available .....	740
<i>K. E. Ajayi, I. L. Nwaogazie, E. Ugwoha, V. D. Ola, A. H. Amadi, C. V. Oluigbo</i>	

### **SESSION: TS 9 - ARTIFICIAL INTELLIGENCE AND DATA SCIENCE I**

Machine Learning for Predicting and Optimizing Well Rates in Gas-Lifted Wells with Web Application Integration Available.....	753
<i>Shedrach Igemhokhai, Kelani Bello, Uzemefeta Okeligho, Adejumoke Ajayi, Abayomi Adejumo</i>	

### **VOLUME 2**

Real-Time Reservoir Modelling and Optimization Frameworks for Enhanced Hydrocarbon Recovery in the Niger Delta Basin Available .....	767
<i>C. K. Duru, F. C. Ogbonna</i>	
An Explicit Machine Learning Model for Predicting Sandface Pressure in Complex Shale Reservoirs Available.....	779
<i>E. F. Igbo, O. E. Agwu, B. O. Kayode, J. A. Iorkyaa, G. T. Umoh</i>	
Using Convolutional Neural Network for the Detection of Offshore and Onshore Oil Spills Available.....	818
<i>A. O. Bakare, K. T. Seriki, F. O. Emmanuel, S. T. Osunba, S. E. Ayoigbala, K. J. Oshile</i>	
Integrated AI Approach to Crude Oil Evacuation for Shallow Water Assets: Field X Case Study Available.....	831
<i>V. I. Ajilo, P. Oluwatayo, M. A. Jimoh</i>	
Investigating the Impact of Feature Engineering Techniques on the Predictions of Well Log Attributes Available .....	846
<i>Zainab Iyiola, Tafadzwa Guzha, Chinedu Nwosu, Deepak Devegowda, Michal Ezeh, Stephen Obeng</i>	
Deep Learning Approaches for Facies Prediction in Subsurface Seismic Data Available.....	858
<i>J J Areola, V Akpan, P Akagbosu</i>	
Enhanced Workplace Safety Through Digital Monitoring and Sensors Around Oil Facilities Available.....	869
<i>I. V. Ngonadi, S. Ajiroghene, O. M. Orji</i>	

## **SESSION: TS 10 - GAS UTILIZATION & OPERATIONS - I**

Remote Real-Time Gas Data Monitoring with Predictive Maintenance of Turbine Flow Meters Available.....	879
<i>A. I. Quadri, O. Olamigoke</i>	
Analysis of Gas Fuel Use in Nigeria's Transport Sector, Risks and Safety Considerations Available .....	889
<i>D. O. Obafemi, I. A. Shittu, Chukwu Emeke, O. Y. Obafemi</i>	
Method for Real-Time Estimation of the Emission Characteristics of Natural Gas Flaring Available.....	912
<i>Christopher Oko, Gabriel Umoh, Ntietemi Etim</i>	
A Numerical Investigation of the Effect of Throttle Plate Angle Variation in CNG Carburetors on Emissions and Power Efficiency of Small-Scaled CNG Engines: A Parametric Study for Design Optimization Available .....	925
<i>V. A. Adeleke, O. Kolade, S. D. Ojo</i>	
Mitigating Gas Flaring in Nigeria Through Enhanced Gas Processing: Evaluating the Potential of Fischer-Tropsch Gas-To-Liquids Technology Available .....	937
<i>O. J. Adesida, I. A. Shittu</i>	
SWOT Analysis of the Nigerian Condensate Market Available .....	954
<i>D. V. Kalu, A. E. George, D. O. Obaze</i>	
Systematic Review of Critical Factors Influencing the Price of Natural Gas: Lessons for Compressed Natural Gas (CNG) Adoption in Nigeria Available .....	968
<i>Ndubuisi Shammah, Nwankwo Emeka, Nwagrade Precious, Ikobee Kenneth, Amadi Nancy</i>	
CNG Production in Nigeria: The Market and the Growth Outlay Available .....	986
<i>M. O. Abdulsalam, R. A. Akinbola</i>	

## **SESSION: TS 11 - ENERGY TRANSITION AND DECARBONIZATION**

Smart City Geo-Digital Transformation and Sustainability Assessment Initiative Nigeria (SMARTGAIN): Mapping Deep Geothermal Energy Potential to the Sustainable Digital Transformation of Niger Delta Region, Nigeria into a Smart Region Available .....	1001
<i>Tosin Olaolu Oyenyi, Ayodeji Ololade Hansen-Ayoola, Abayomi Oladosu Olatunji, Kehinde Nathaniel Alao, Emmanuel Oluwadamilare Adeniyi</i>	
Comparative Analysis of Gas Injection and Chemical Enhanced Oil Recovery Techniques for a Moderately Pressure Heavy Oil Reservoir: A Performance Efficiency Study Available .....	1018
<i>Idahosa Osahon Ehibor, Ajimosun Isaac, Sanda Aba, Hassannah Salami, Mustapha Yusufu, Olalekan Olafuyi</i>	
Rig Optimisation for Energy Efficiency and Emissions Reduction for Well Plug and Abandonment Available.....	1040
<i>A. Olaitan, I. Iyalla, R. Mahon</i>	
Geomechanical Failure of Underground Hydrogen Storage (UHS) Systems Available .....	1050
<i>Kennedy Antwi, Ityona Amber, Gbenga Oluyemi</i>	
Digital Rock Core Simulation of CO <sub>2</sub> Storage, Showing the Impact of Heterogeneity on Fluid Flow and Residual Trapping Available .....	1064
<i>Oluwatobi Raymond Olugbade</i>	

Towards a Low-Carbon Energy Industry: Financial and Reputational Resilience Strategies of Integrated Energy Companies Available.....	1081
<i>Ndubuisi Shammah, Chijioke Favour, Nwagrade Precious, Nwankwo Emeka</i>	
Decarbonising Offshore Production Platforms Using Hybrid Renewable Energy Systems Available .....	1105
<i>F. Udom, I. Iyalla, I. Amber</i>	
Development of Adsorbents for Carbon IV Oxide and Methane Capturing from Carbonaceous Materials Available .....	1118
<i>Ejiroghene Omiunu, Emmanuel Ayodele, David Kalu</i>	

## **SESSION: TS 12 - WELL DESIGN, DRILLING & COMPLETIONS - II**

Comparison of Transformer and Long Short-Term Memory-Based Nonlinear Model Predictive Control for Automatic Managed Pressure Drilling Available .....	1136
<i>O. O. Ogunsola, A. Bamimore</i>	
Drilling Optimization for Step-Change Drilling Performance Using Artificial Intelligence Available .....	1151
<i>Tayo Ajimoko</i>	
A Machine Learning Approach to Predicting Wellbore Instability in the Niger Delta Available .....	1161
<i>K. Ikobee, C. Nwamaioha, S. Wadike, F. Agbora</i>	
Evaluation of Oil-Based Drilling Mud OBM and Spacer Contamination on API Class G Cement: Wellbore Challenges and Recommendations Available.....	1173
<i>O. G. Golagha, K. J. Eke, A. O. Okechukwu, C. Obi, D. R. Armand, C. E. Dibia</i>	
Evaluation of the Rheological Properties of Ire-Ekiti Clay as an Alternative Viscosifier to Bentonite Available.....	1183
<i>J. O. Ajayi, A. T. Adeniyi, A. Giwa</i>	
Optimizing Drilling Fluid Performance with Green Inhibitors Available .....	1198
<i>S. Q. A. Mahat, P. I. Nwaichi, C. Umunnawuike, F. Nyah, D. Abutu, B. Money, J. R. Gbonhinbor, E. O. Nwaichi, A. Agi</i>	
Development and Evaluation of a Sustainable Oil-Based Mud from Raphia Palm Seeds Available .....	1215
<i>A. T. Ogunyemi, O. C. Olasoji, M. G. Omofoyewa, A. A. Adeyi, A. I. Igbafe, A. Giwa</i>	
Strategic Planning for Complex Well Abandonment- Lessons Learned from Deepwater Field Available.....	1226
<i>Augustine Okosun, Osehojie Ojeh-Oziegbe, Oladokun Adubi, Oluwatobi Ugoh</i>	

## **EPOSTER MORNING SESSION - I**

A Deep Learning Framework for Accurate Liquid Rate Prediction & Back Allocation in Oil Production Available .....	1239
<i>K. E. Vahyalajah, A. Micheal, O. C Franklin, N. Petrus, I. Chijioke</i>	
Application of Machine Learning for Permeability Prediction from Well Logs in Sandstone Reservoir: A Comparative Study of Model Performance Available .....	1251
<i>V. M. Chinyereugo, E. Nnaemeka</i>	
Real-Time Temperature Distribution Estimation in Permanent Magnet Synchronous Motors (PMSMs) Using Machine Learning: A Path Toward Energy Efficiency and Sustainability Available.....	1263
<i>O. C. Williams, A. O. Bakare, T. M. Rufai, O. L. Owolabani, A. T. Oyekan, K. J. Oshile</i>	

Obsolescence Management of Rotating Equipment in the Oil and Gas Industry: A Strategic Approach to Minimizing Loss and Downtime Available .....	1291
<i>U. K. Kolo, A. M. Nuhu, D. A. Rahman</i>	
Techno-Economic Assessment of Midstream Propane as a Petrochemical Feedstock in Nigeria Available.....	1303
<i>S. Kanshio, C. Ibrahim</i>	
Enhancing Asset Integrity Management Using AI in the Yoga Gas Plant, Niger Delta Region of Nigeria Available .....	1309
<i>Ayodeji Aribisala, F. M. Kelechi</i>	
Continuous Improvement Mindset as a Panacea for Excellence in Project Delivery – a Case Study of Shell Nigeria Deep Water Projects Available .....	1323
<i>A. O. Mustapha, M. A. Mohammed, A. O. Olaleke, O. S. Osolu, G. O. Osumah, O. A. Ajayi, O. A. Odusami</i>	
Enhancing Green Hydrogen Production: Efficient and Cost Effective Electrolysis Technologies with Nickel Based Catalysts Available .....	1329
<i>R. D Otubu, U. D. Kenekukwu, A. Y. Abel</i>	
Electric Vehicles Vs. Biofuels: A Review of Decarbonization in Transportation Available .....	1339
<i>O. Kolade, V. A. Adeleke, S. D. Ojo, S. Osunba, O. Anifowose, K. Abdul</i>	
Evaluating the Thermophysical Behaviours of H <sub>2</sub> –CH <sub>4</sub> Mixtures for Underground Hydrogen Storage: Implications for Nigerian Gas Reservoirs Available .....	1350
<i>S. D. Abubakar, N. S. Muhammed, O. A. Okpu</i>	

### **EPOSTER EARLY AFTERNOON SESSION - I**

Analysis and Optimization of Carbon Dioxide in a Propane Precooled Mixed Refrigerant Liquefaction Plant Available .....	1361
<i>M. A. Oyelade, S. S. Ikiensikimama, V. U. Wachikwu-Elechi</i>	
Advanced Strategies for Optimizing Recoveries from Retrograde Gas Reservoir Development Available.....	1378
<i>David Alaigba, E. C. Kalu, Ebere Benard</i>	
Domestic Utilization of Methane and Liquefied Petroleum Gas (LPG) in Nigeria's Decade of Gas: How Much Progress Has Been Made? Available .....	1398
<i>O. T. Olugbeje, O. V. Adeyemi, K. A. Obakhume</i>	
Feasibility of Compressed Natural Gas (CNG) Adoption for Automobiles in Nigeria Available.....	1412
<i>V. A. Usiayo, L. P. Ido, E. P. Obene, D. V. Kalu, E. J. Omiunu</i>	
Repositioning Nigeria's Gas Market in a Dynamic LNG Landscape: Challenges, Opportunities, and Strategic Solutions Available.....	1420
<i>Medlyne Oragwuncha Oluchukwu, Amala Muoghalu, Bilal Ibrahim, Wekere Chimzia Thelma</i>	
Development of Gas Leak Detection Model for Gas Facilities and Pipelines Available.....	1434
<i>Solomon Adenubi, Dulu Appah</i>	
Capacity Expansion of Gas Dehydration and Processing System Via S-Turbo Train Debottlenecking Technology- A G-Field Success Story Available .....	1446
<i>Bayo Balogun, Idaresit Udoaka, Igbigioyibo Memberr</i>	

From Untapped Potentials to Global Leader: 35 Years of NLNG's Contribution to Nigeria and Africa Available.....	1462
<i>E. G. Udomeh, Chukwu Emeke, B. E. Mepaiyeda</i>	
Integrating Carbon Capture Utilization and Storage (CCUS) Concept into the Petroleum Industry Operations in Nigeria, Benefits and Challenges Available .....	1475
<i>Olanike Ibukunoluwa Olajide, Esther Adedeji, Emeke Chukwu, Salako Olarinre</i>	
The Role of Natural Gas in Nigeria's Energy Transition and Economic Growth - An Econometric Approach Available .....	1495
<i>Evro Evans. O., Obiwale Fortune. O., Mepaiyeda E. B., Emeke Chukwu</i>	

### **EPOSTER LATE AFTERNOON SESSION - I**

Challenges Among Offshore Oil Workers in Nigeria: Implications and Solutions for Industry and Individual Well-Being Available .....	1510
<i>N. Emenike, I. Iyalla</i>	
Proactively Managing Hazards to Enhance SSoW in Well Intervention Operations – a Case Study Available.....	1516
<i>S. I. Ikirodah, S. P. Gondo</i>	

### **VOLUME 3**

A Comprehensive Approach to Health, Safety, and Environmental Sustainability in Drilling: Balancing Operational Efficiency with Safety Standards Available .....	1524
<i>B. Money, S. Q. A. B. Mahat, N. Ismail, M. A. B. A. Aziz, G. J. Randy, R. H. Modather, C. Umunnawuike, P. I. Nwaichi, F. Nyah, A. David, A. Agi</i>	
Addressing Safety Risks Associated with Confined Space Activities: A Case Study of Water Ballast Tank-FSO Unity Available .....	1546
<i>D. Abia, D. V. kalu, D. D. Onyiri</i>	
Fast-Track to First Oil: The Marginal Field Accelerator Solution Available .....	1557
<i>Elizabeth Obode, Chris Opuba, Pere Alex Tiemo</i>	
Brown Field Excellence: Leveraging Technology, Supply Chain and Human Resources in Transforming Asset Value Available.....	1563
<i>L. A. Nwoke, V. O. Okonkwo, E. O. Eta, E. N. Onuigbo, U. C. Ananaba, T. C. Okoro, M. U. Nwabuoku</i>	
Aradel Holdings' Wells, Reservoir, and Facility Management (WRFM) Journey to Maximizing Asset Value Available .....	1577
<i>Stephen Nwala, Adeola Asamu, Collins Alaka</i>	

### **SESSION: TS 13 - FACILITY DESIGN, CONSTRUCTION AND MAINTENANCE**

Epoxy Based Self Healing Coatings: A Breakthrough in Pipeline Protection and Longevity Available.....	1586
<i>F. C. Akandu-Adinma, L. Ikeh, D. L. Briggs</i>	
A New Modification to the Hagedorn-Brown Correlation for Prediction of Two-Phase Pressure Gradient in Horizontal Wells Available .....	1595
<i>E. O. Ughulu, I. O. Soremukun, T. A. Farotimi</i>	

Design and Engineering of an Early Production and Mini-Gas Processing Facility for 1000 BOPD and 15 MMSCFD Natural Gas: An XYZ Marginal Field Strategy Available.....	1615
<i>T. O. Folorunso, O. O. Ojo, H. M. Gajibo, A. O. Salawu, K. C. Nwagbo, I. F. Adesokan</i>	
Optimizing Oil/Gas Production in Facilities Design Considerations: Case of CO2 Removal and Utilization Available.....	1627
<i>Emmanuel O. Agiaye, Emmanuella Agbo</i>	
Combining Layout Requirements, Consequence Modeling & Quantitative Risk Assessment in Safe Buildings Siting in Process Facilities Available .....	1658
<i>A. E. Obi, C. E. Onyia, O. A. Ojeyinka</i>	
Nanotechnology-Enabled Coatings for Mitigating Scale and Corrosion in Oilfield Pipelines Available.....	1669
<i>H. O. Ezeoke, J. E. Okeke, S. O. Ogboro</i>	

### **SESSION: TS 14 - WELL DESIGN, DRILLING & COMPLETIONS - III**

Novel Viscometer Design for Investigation of the Rheological Properties of Drilling Fluid at Low and High Shear Rate Conditions Available.....	1685
<i>Biltayib Misbah Biltayib, Rida Elgaddafi, Kingsley Amadi, Rana N. Malhas, Sadeq Damrah, Saad A. Balhasan</i>	
Programmable Nanoparticles for Smart Drilling Mud Systems in Over-Pressured Shale Formations Available.....	1696
<i>J. E. Okeke, B. T. Ganiyu, M. O. Oyegbile</i>	
Investigating the Effect of Avocado Seed in Water Based Drilling Mud Formulation Available .....	1717
<i>A. Salihu, Z. Dahiru</i>	
Oil-Well Production Forecasting: A Machine Learning Approach Available .....	1734
<i>Humphrey Nwenenda Dike, David Enejo Adams, Olatunde Olu Mosobalaje, Olabode Oluwasanmi, Damilola Deborah Olaniyan, Ipinsokan Sunday Bolu</i>	
Appraising the Impact of Activated Clay Geopolymer as a Sustainable Geopolymer Cement for Oilwell Applications Available .....	1748
<i>B. Money, S. Q. A. B. Mahat, A. Melia, A. Gbadamosi, J. Oseh, R. Junin, R. H. Modather, C. Umunnawuike, F. Nyah, A. David, P. I. Nwaichi, A. Agi</i>	
Fiberglass-Enhanced Cement Slurry: Achieving Peak Compressive Strength and Loss Circulation Mitigation Available .....	1761
<i>Briggs Daye Lolo, Eke Kalu, Igwe Uzoma Justus</i>	

### **SESSION: TS 15 - ASSET MANAGEMENT AND INFORMATION**

The Future of Asset Integrity: Balancing Innovation with Operational Excellence Available .....	1777
<i>C. Umunnawuike, S. Q. A. Mahat, M. A. B. A. Aziz, J. R. Gbonhinbor, B. Money, P. I. Nwaichi, F. Nyah, D. Abutu, C. I. E. Umunnawuike, F. O. Nwanosike, A. Agi</i>	
Production Allocation in Biodegraded Hydrocarbon Reservoirs: Overcoming Challenges with Incremental Linkage Hierarchical Cluster Analysis and Geochemical Fingerprinting Available.....	1810
<i>E. L. Bestmann, J. Joshua, C. J. Ibekwe, H. C. Okeke, B. Mmata, M. O. Onyekonwu</i>	

Digital Application for Mechanical Integrity Assessment of Pressure Systems Subject to Pitting Corrosion Available .....	1820
<i>J. Unwene, I. Iyalla, F. G. Author</i>	
Pulsed Neutron Application in Monitoring Formation Gas Movement and Reservoir Depletion Surveillance in a Mature Niger Delta Field Available .....	1829
<i>U. C. Mobo, I. P. Akagbosu, R. Nardiello, A. Ofi</i>	
Development of Marginal Hydrocarbon Resources with Innovative Completion Strategy Available.....	1839
<i>Ibekwe Isaac, Samuel Stephen, Maxson Okogbule, Collins Alaka, Kene Madubulum, Stanley Akunne, Igattah Nnaemeka</i>	
Technical and Economic Viability of Using Early Production Facility in Marginal Oil Fields in the Niger Delta Available .....	1850
<i>P. Oluwatayo, C. T. Alakija</i>	

### **SESSION: TS 16 - LOCAL HUMAN RESOURCES DEVELOPMENT**

Addressing Career Development Challenges Faced by Young Female Engineers and Technologists in Nigeria Available .....	1860
<i>I. U. Koffi, E. T. Ukpohor</i>	
PyPE_CoP: Enhancing Digital Literacy in Python for Petroleum Engineering Educators, Through a Community of Practice Available .....	1870
<i>O. O. Mosobalaje, M. A. Aku, P. O. Ojebile, F. E. Adali, A. Salihu, G. I. Aghaulor, F. C. Egede</i>	
Leveraging NCDMB-CypherCrescent-University Synergy for Curriculum Innovation: Integrating SEPAL Enterprise into Petroleum Engineering Education in Nigeria Available .....	1882
<i>I. S. Okafor, E. E. Okoro, T. I. Egbe, O. S. Ajimijaye, T. Emeka-Duruzor</i>	
Understanding Gender Imbalance Among Drilling Engineers in the Nigerian Oil and Gas Industry Available.....	1904
<i>Hannah Kpone-Tonwe</i>	

### **SESSION: TS 17 - FORMATION EVALUATION**

Balancing Capacity and Containment: A Technical Evaluation of CO2 Storage in Saline and Depleted Reservoirs of the Talpha Field Available.....	1913
<i>O. V. Adeyemi, A. V. Adeniyi, E. M. Ubituogwale, C. D. Ifeanacho</i>	
Maximizing Production from Mature Asset Through Wells and Reservoir Reviews: Case Study of a Complex Reservoir Available.....	1928
<i>Sunday Maxwell-Amgbaduba, Dulu Appah, Waazor Korubo, Monday Nanpan Monday, Olugbenga Daodu, Godman Udoekpo, Chima Ezugwu</i>	
Borehole Instability Investigation, Challenges and Learning from Experience – a Case Study of Appraisal/Development Well X Available.....	1946
<i>Imonitie Imorame, Victor Longe, Dike Ahunanya, Joel Musa, Ayodele Akinfolarin</i>	
Reservoir Performance Assessment of Well D4 from Niger Delta Using Kappa Saphir Software Available.....	1958
<i>I. R. Isah, I. U. Adamu, J. I. Tahir, N. Makwashi</i>	

An Approach to Inflow Control Device (ICD) Modelling to Delay Early Water Breakthrough in Heavy Oil Reservoirs in the Niger Delta Available ..... 1973  
*Muhammad Abdullahi, David Alaigba, Obinna Ezeaneche, Uchenna Orekyeh, Precious Isaac, Alexey Andreev*

Producibility of Oil Re-Saturated in Initial Gas Gap - Proof of Theory Available ..... 1988  
*Odudu Umoren, Oluwafemi Olominu, Agu Joseph Agu, Adedolapo Ayomide Ogunsade*

### **SESSION: TS 18 - RESERVOIR DESCRIPTION, ENGINEERING & MANAGEMENT II**

Model for Determining Average Reservoir Pressure for Gas Reservoirs from Variable Rate Drawdown Test Data Using Direct Synthesis Method Available ..... 1994  
*Ndubuisi Shammah, Ikechi Igwe, Wadike Seth*

Petrophysical Characterization of Rock Properties Through Pressure Clustering: A Machine Learning Approach Available ..... 2012  
*E. O. Ughulu, T. Oluwaseun, I. O. Soremekun, I. C. Ojukwu*

The Effect of Fluid Saturation on the Geo-Mechanical Properties of Reservoir Rock Available..... 2026  
*P. B. Whyte, I. Igwe, k. k. Dune, B. B. Kinate*

Mathematical Basis for the Occurrence of Derivative Time-Shift During Numerical Well Test Simulation Using Large Grid Blocks Available..... 2036  
*B. O. Kayode, E. F. Igbo*

A Hybrid Physics-Informed and Data-Driven Approach for Predicting Water Volume in Oil Reservoirs with Explainable AI Available ..... 2049  
*T. J. Omotosho, M. J. Olaoba*

Enhancing Water Influx Prediction: A New Machine Learning-Based Model for Accurate Water Cut Forecasting Available ..... 2063  
*S. A. Uko, M. O. Oyegbile, J. E. Okeke*

### **SESSION: TS 19 - PRODUCTION OPTIMIZATION & OPERATIONS - III**

Assessing the Biodegradability and Efficacy of Musa Paradisiaca Extract (MPE) as a Green Hydrate Inhibitor Available ..... 2075  
*A. F. Bob-ogunga, V. U. Wachikwu-ElechI, S. S. Ikiensikimama*

Emerging Advances in Hydrocarbon Accounting for Production Optimization and Revenue Maximization in Marginal Fields: A Case Study of Aradel Holdings Plc Ogbele Integrated Production Facility Available ..... 2091  
*Patrick Akuagwu, Emmanuel Ayodele, Stephen Nwala, Adefolaju Adewumi*

Prediction of Sanding Potential in Unconsolidated Sandstones Using Selected Machine-Learning Techniques Available ..... 2101  
*Chiamaka R. Nwarueze, Sunday O. Isehunwa*

Innovative Approach for Highly Deviated Well Interventions: A Game-Changing Gravity-Fed Conveyance Tool Redefines the Application Envelope for Niger-Delta Case Histories Available .....2114  
*C. Uchendu, Y. Angelis, A. Oguike*

A Comparative Assessment of Gas Lift Vs ESP Performance in Heavy Oil Development – a Niger Delta Experience Available ..... 2129  
*David Alaigba, E. C. Kalu, Uchenna Orekyeh, Muhammad Abdullahi, Obinna Ezeaneche, Onyekachi Ihebuzor, Zaid Oyeleke, Samuel Anikoh, Oluwafisayo Meshioye*

Optimizing Polymer Flooding Techniques Using Eclipse Simulation Software in a Model Reservoir Available..... 2145  
*D. J. Udosen, J. O. Etim*

Prediction of Permeability Impairment Due to Scale Deposition in Waterflooding Using Machine Learning Algorithm Available ..... 2155  
*Alayande S. B., Alawode A. J.*

Extraction and Evaluation of Rare Earth Metals from Kogi Coal for Petroleum and Gas Industry Application Available ..... 2165  
*A. Gimba, F. Ladan, A. Salihu, H. Oruwari*

### **SESSION: TS 20 - HEALTH, SAFETY AND ENVIRONMENT**

Compliance as a Foundation, Vigilance as a Mindset: Cultivating a Sense of Vulnerability for an Enhanced Safety Culture in the Oil and Gas Industry Available ..... 2184  
*Victor Joseph, Muhammad Oladapo, Mildred Nkemjika*

An Autonomous Oil Skimming Robot for Crude Oil Spills Available ..... 2199  
*K. J. Chukwuorji, C. I. Opara, A. A. Galadima*

Treatment of Clinical Wastewater from Oil and Gas Industry Using Egg Shell-Titanium Oxide Composites as a Photocatalyst Available..... 2213  
*I. O. Pinnick, A. A. Adeyi, I. I. Olateju, M. G. Omofoyewa, J. O. Ajayi, A. Giwa*

Preparing for the Worst – Expounding on Worst-Case Discharge (WCD) Evaluations for Niger-Delta Reservoirs Available ..... 2224  
*Eelah Muzan, Michael Edih, Oluchi Ekanem-Attah*

Petroleum Industry Wastewater Treatment for Phenolic Compound Removal Using Modified Date Seed-Based Biochar Available..... 2241  
*M. G. Akomolede, O. M. Omuvwie, A. A. Adeyi, I. I. Olateju, M. G. Omofoyewa, J. O. Ajayi, A. Giwa*

Assessment of Dioxin Concentration in Soil and Edible Plants Around Industrial Sites in Koko Town, Southern Nigeria Available..... 2255  
*Amaka Michael, Abraham O. Ekperusi, Peter N. Okeke, Chinedu E. Ihejirika, Christopher C. Ejiogu*

Evaluation of Microplastic Pollution in Aquatic Habitats: An In-Depth Study with Emphasis on Petroleum and Gas Industry Activities Available ..... 2263  
*A. Yelwa, A. Gimba, A. salihu, H. Oruwari*

Synthesis of Dodecyl Acrylate Via Thermal Methanolysis of Gmelina Arborea Leaf Biomass Available..... 2272  
*H. Ibrahim, A. M. Ali, M. D. Jibrin*

## **SESSION: TS 21 - RESERVOIR GEOLOGY & GEOPHYSICS**

- De-Risking Deep Cluster of Gas Prospects in a Complex Horst Structure: A Near Field – Near Infrastructure Exploration Case Study, Onshore Niger Delta Available ..... 2280  
*Obobi Onwuka, Ovwigho Irifeta, Ejiroghene Akpofure, Edafe Edivri, Fatunmbi Afolabi, Stella Ogbodu, Kelvin Okpako, Debo Enilolobo, Olusegun Obilaja, Johnbosco Uche, Adelola Adesida, Bart Tichelaar, Colin Grant, Herve Farran, Manuel Poupon, Rob Staples*

### **VOLUME 4**

- Evaluating the Hydrocarbon Prospectivity of the Nova-South Area, Offshore Niger Delta Available ..... 2296  
*E. M. Ubituogwale, O. V. Adeyemi, S. Bello*
- A Comprehensive Outlook for CO2 Sequestration Feasibility Studies with Rock Physics Available ..... 2311  
*N. C Idowu-Anifowoshe, B. T. Ojo*
- The Discovery and Development of a Field Extension 45 Years After First Oil Available ..... 2327  
*P C Burges, U John*
- Dynamic Reservoir Geological Mapping Using Generative AI and Satellite Data Available ..... 2341  
*A. A. Olowookere*
- Structural Interpretation of a Complex Multi-Reservoir Field, NW Niger Delta Available ..... 2353  
*H. C. Thomas, P. R. G. Dunlop, R. J. Lopez*
- Leveraging on Extended Elastic Impedance (EEI) Technology to Find More Hydrocarbon in a Matured Basin Available ..... 2369  
*Jude Osimobi, Ikpolo Ernest, T. Dagogo, Adaobi Stephenie Anwosi-Anele*

## **SESSION: TS 22 - ARTIFICIAL INTELLIGENCE AND DATA SCIENCE II**

- Predicting Oil, Gas and Water Production Using Artificial Neural Network in MATLAB: A Data-Driven Approach Available ..... 2377  
*F. A. Ogah, A. Giwa*
- Leveraging Artificial Intelligence for Efficient Waste Management in Smart Cities Available ..... 2394  
*F. M. Kelechi, A. Aribisala, C. Ukoh, W. M. Longinus, M. Ewverhamre*
- Use of Selected Machine Learning in Detecting Leakage in Piping Systems Available ..... 2409  
*Buraimoh Glory, Chukwunonso Uche*
- Predictive Energy: Harnessing Artificial Intelligence for Sustainable Energy Forecasting and Management Available ..... 2419  
*C. Umannawuike, S. Q. A. Mahat, M. A. B. A. Aziz, J. R. Gbonhinbor, B. Money, P. I. Nwaichi, F. Nyah, D. Abutu, C. I. E. Umannawuike, F. O. Nwanosike, E. O. Nwaichi, A. Agi*
- Predictive Modelling of Flowing Bottom Hole Pressure in Sandstone Reservoir Formations Using Machine Learning Available ..... 2450  
*E. Nnaemeka, V. M. Chinyereugo*

Integrating Machine Learning, Improved Geostatistical Modeling and Experimental Design Techniques for Reservoir Characterization and Probabilistic Reserves Estimation: A Niger Delta Case Study Available .....	2461
<i>T. A. Farotimi, M. E. Amaefuna, H. O. Iyiegbu, O. I. Olowoyeye, J. I. Agbo, S. B. Oyekade, E. K. Akpodae, E. N. Ebeh, A. T. Oyatobo</i>	
Predictive Maintenance of an Hydraulic System Using Spiking Neural Networks Available .....	2471
<i>A. O. Bakare, S. A. Animashaun, K. T. Seriki, M. M. Ogunbiyi</i>	
CO2 Concentration Prediction in Natural Gas: A Machine Learning Approach for Optimizing Operational Efficiency and Production Quality Available .....	2485
<i>D. S. Umobit</i>	

## **SESSION: TS 23 - GAS UTILIZATION & OPERATIONS - II**

Investigating the Effect of Sub-Cooling Temperature on Methanol Requirements for Hydrate Formation Prevention Available .....	2495
<i>I. Igwe, A. Benebo, B. Kinate</i>	
Economic Evaluation of the Integration of Flare Gas Recovery System Using Aspen Hysys Available .....	2511
<i>A. G. Olugbena, A. E. Ochayi, D. George-Adeniyi, S. Ogidi</i>	
New Model for Estimation of Wellbore Gas Injection Pressure for Vertical Wells in Depleted Hydrocarbon Reservoirs Available .....	2522
<i>E. Okposin, A. Livinus, D. Udosen, I. U. Koffi</i>	
Comparative Analysis of Different Carbon Capture Technologies for Blue Hydrogen Production Available .....	2537
<i>G. I. Maduabuchi, C. I. Okoh, C. F. Abah, T. A. Ogulu-Ishola, R. A. Adubazi, P. J. Yougha</i>	
Energy Security for Sustainable Development of Oil and Gas Sector in Nigeria Available .....	2559
<i>Humphrey O. Oruwari, Ollor A. Ejire, Babatunde B. Adetokun, Tologon Karataev, Adekunle Adeleke, Ayuba Salihu</i>	
Carbon Capture and Storage: An Optimal Solution to Nigeria's Energy Transition Available .....	2568
<i>E. D. Solomon-Eseh, M. O. Olubajo</i>	
Evaluating the Effect of CO2-Brine-Rock Interactions on Storage Capacity and Containment in Saline Aquifers in the Niger Delta Using Coupled Wellbore-Reservoir Modelling Available .....	2582
<i>Okoromah Victor, Ndubuisi Shammah, Ikechi Igwe</i>	

## **SESSION: TS 24 - WELL DESIGN, DRILLING & COMPLETIONS - IV**

Nigerian Well Abandonment Landscape: Challenges and Lessons from Global Trends Available .....	2604
<i>Augustine O. Chukwuemeka, Matthew Ibukun, Abdulsalam Abdulkarim, Gbenga Ohuyemi, James Njuguna</i>	
Improvement of Static and Dynamic Sag Performance of Water-Based Drilling Mud Using Combined Nano-Barite and Nano-Ilmenite Particles Available .....	2623
<i>J. O. Oseh, M. N. A. M. Norddin, A. Kerunwa, I. Ismail, H. M. Warsame, J. R. Gbonhinbor, E. N. Ngouangna, S. I. Okwaraku, I. M. Onyejekwe, I. A. Oguamah, M. N. Yahya, A. Agi</i>	

An Analytical Approach to Fracture Gradient Prediction Utilizing Leak off Test Calibration Data: Case Study Application of a Deep Play Niger Delta Well Available .....	2639
<i>F. E. Eriavbe, U. O. Okene</i>	
Foamed Cement Solution for Deepwater Tophole Challenges Offshore West Africa Available .....	2649
<i>Ilyas Abdulsalaam, Roberto Enriquez, Iain Massie, Kemal-Edecan Amanat, Sergio Cabral</i>	
Managing Borehole Instability in High-Angle Wells Available .....	2662
<i>Chibuzo Ogbonna Nwamaioha, Ayodele Akinfolarin, Onyinyechi Onovo, Adeyemi Erinle</i>	
Delivering Consistent Competitive Business Outcomes Through Streamlined Well Delivery Process - A Case Study from an Operator in Nigeria Available.....	2677
<i>J. G. George, A. Okeudo, J. Oluleye, T. Alalade, D. Yaboh</i>	
Analysis of Selected Fiber Rich Agricultural Waste as Oil-Based Drilling Mud Additives Available .....	2687
<i>B. Alade, P. Nzerem, A. Salihu</i>	
Evaluation of Sawdust and Coconut Fibers as Eco-Friendly Additives for Oil-Based Drilling Muds Available.....	2706
<i>A. Salihu, O. Ajiri, A. Gimba, V. Obumeyan</i>	

## **EPOSTER MORNING SESSION - II**

Mitigating Corrosion in Oil Pipelines Using Moringa Leaf and Bitter Leaf Extracts as Eco-Friendly Inhibitors Available .....	2717
<i>O. S Ogboro, S. A Uko</i>	
Process Optimization to Increase Gas Handling Capacity by Debottlenecking Surface Equipment Available.....	2730
<i>Valentina Adekanbi, Godwin Woha, Obumneme Uyaemesi</i>	
Philosophy of Inflow Control Devices in Optimizing Heavy Oil Recovery Available .....	2742
<i>David Alaigba, E. C. Kalu</i>	
A Blend of Pineapple Crown Extract and Red Onion Skin Extract as Green Corrosion Inhibitors Available.....	2749
<i>C. R. Emeka, T. O. Odutola, S. P. Ejobona</i>	
Data Driven Approach for Predicting Natural Gas Outputs from Unconventional Oil Fields Using Machine Learning Techniques Available.....	2762
<i>Ismail A. Shittu, Ebenezer Arifalo</i>	
Experimental Investigation of the Suitability of Allanblackia Seed Oil and Moringa Seed Oil Demulsifiers for Emulsion Treatment Available .....	2775
<i>Bright Bariakpoa Kinate, Edet Ita Okon, Inuaeyen Nyauedo Inuaeyen</i>	
Development of Phase Envelop for Condensate Gas Using Dwsim Considering Various Influential Parameters Available .....	2791
<i>P. O. Umunna, P. B. Ubendu</i>	
Production Restoration and Enhancement in Waxy Well Using Energized Fluid Wax Cleanout Technology Available .....	2805
<i>M. N. Amaefuna, H. O. Iyiegbu, B. Njoku</i>	
Breaking Barriers: Gas Lift Valve Change-Out Challenges in a Niger Delta Field Available.....	2812
<i>I. K. Orji, E. Eta, O. Djala, A. Ndukwe, P. Kaite</i>	

## **EPOSTER EARLY AFTERNOON SESSION - II**

- Advancing Renewable Energy: The Potential of Concentrated Solar Power in Nigeria Available ..... 2825  
*I. Amber, I. Iyalla*
- Sustainable Energy and Climate Change Adaption: A Review of Synergies and Trade-Off Available ..... 2833  
*Evelyn Bose Ekeinde, Diepiriye Chenaboso Okujagu, Adewale Dosunmu*
- Production of Base Oil from Used Engine Oil Using Vacuum Distillation and Clay Treatment Method Available..... 2854  
*C. C. Omego, D. V. Kalu*
- Design and Development of a Portable Solar-Powered Mobile Charging System with Enhanced Efficiency and Compact Size Available..... 2862  
*M. A. Adedoyin, T. M. Rufai, A. O. Bakare, E. Oladeinde, T. Oyekan*
- Unlocking the Potential of Bioenergy for a Low-Carbon Future in Nigeria: A Comparative Study of Advanced Biofuel Production Pathways Available ..... 2885  
*L. E. Daniel, M. O. Basse, E. O. Antia*
- Review of Intelligent Well Technology Application in Stacked Niger Delta Reservoirs Available..... 2895  
*Erasmus Nnanna, Courage Erumwunse*
- Performance Evaluation of the Types of Polymers Used as Water-Based Mud Viscosifiers for Drilling Operations in Elevated Temperature Environment Available ..... 2907  
*B. Miikor, S. C. Amadi, B. A. Oriji*
- Sustainable Well Completion Strategies for High-Pressure Reservoirs in Nigeria: Balancing Cost, Technology, and Environmental Impact Available ..... 2924  
*Udeze Obianuju Justina, Oluwabukunmi Popoola*
- Rigless Temporary Well Abandonment – Best Practices Approach to Reduce Environmental Pollution Available ..... 2934  
*Mohammed Inuwa Othman, Emmanuel Emelike, Nkechi Onwuaduegbo*

## **EPOSTER LATE AFTERNOON SESSION - II**

- Industry Academia Partnerships; Models and Strategies Available ..... 2942  
*M. I. Ogu, C. F. Gabriel-Ugwu, S. Franklin, C. N. Onwusi, A. Nwakanma, C. Nwonodi, I. Umeogu, D. C. John, O. T. Aasa-Sadique, A. S. Nwosi-Anaele*
- Evaluating the Impact of Sustainable Management Practices on the Operational Efficiency of Oil and Gas Companies in Nigeria Available ..... 2959  
*Humphrey O. Oruwari, Ollor A. Ejire, Babatunde B. Adetokun, Tologon Karataev, Adekunle Adeleke, Ayuba Salihu*
- Evaluating the Suitability of Soybeans and Wheat Husk for Interfacial Tension Reduction in Crude Oil and Brine Systems Available ..... 2967  
*Idahosa Osahon Ehibor, Alonge Ibe, Gbenga Maku, Magnus Amaefuna, Suraju Oyekade, Abdulwahab Omotoso, Babatunde Adetula, Eresinkumo Goodhead, Olalekan Olafuyi*
- Leveraging Ocean Bottom Node Seismic Data to Mitigate Field Development Uncertainty in a High-Value Offshore Gas Field Available ..... 2979  
*I. Umeogu, N. Okereke, A. Ekpoette, J. George, C. Nwonodi, O. Adenaiye, E. Arochukwu, E. Ubong, S. Ogbodu, J. Uche, U. Ozoemene, I. Sukubo*

Bibliometric Insights into Cellulose Nanoparticles: Advancing Sustainable Enhanced Oil Recovery in HTHP Reservoirs Available.....	2995
<i>F. Nyah, N. Ridzuan, M. A. B. Aziz, J. Gbonhinbor, B. Money, P. I. Nwaichi, C. Ummuawuike, A. David, A. Agi</i>	
Bridging Nigeria's Energy Gap: The Impact of Aradel Holdings' Modular Refinery on Local Energy Supply and Economic Development Available .....	3023
<i>Blessing Olaniyan, Ifeanyi Chiaghanam, Tonye Wokoma, Anthony Aduba, Kene Madubulum, Alkali Alhassan, Timothy Oshievere, Obakore Oloya</i>	
Policy Incentives to Revitalize Investment in Nigeria's Oil and Gas Sector Amidst Divestment of Asset by International Oil Companies: Strategies for Sustainable Growth Available .....	3032
<i>T. A. Ladejo</i>	
Sake Near Field Exploration: An Exploration Strategy to De-Risk Subsurface Uncertainty Available .....	3037
<i>O. Chudi, J. Reginald, D. Enilolobo, S. Sukubo, O. Stella, A. Kelvin, I. Prosper, U. Johnbosco, O. Uchekukwu</i>	
A No-Drill Decision for Beige Deepwater Prospect: An Integrated Subsurface Perspective Available.....	3043
<i>Obinna Chudi, Kumar Gautam, Chima Chikezie, Kolawole Akingbade, Adelola Adesida, Ayodeji Ogunlana, Jude Osimobi, Afolabi Fatunmbi, Austin Anaevune, Somime Oguntola, Francesca Osayande, Oke Okpobia, Arogun Olubunmi, Segun Obilaja, Dipo Falade, Uche Johnbosco</i>	

**Author Index**