

Basic Information :

Name : Omar Mahmoud
Title : Associate Professor



Omar Saad Ahmed Mahmoud: is currently working as faculty member at the Department of Petroleum Engineering, Faculty of Engineering and Technology, Future University in Egypt (FUE). Previously, he was working as petroleum reservoir engineer with the North American Unconventional Resources (NAUR) Team at Apache Corporation, San Antonio Region, USA. Before joining Apache Corporation, he worked as graduate research assistant/PhD Candidate for 4 years at the Harold Vance Department of Petroleum Engineering, Texas A&M University, USA. Previously, he worked for 8 years as assistant lecturer and teaching/research assistant at the Faculty of Petroleum and Mining Engineering, Suez University, Egypt. He also served as petroleum engineering intern at Apache Corporation (USA) during the summer of 2017. Mahmoud has a demonstrated history of working in the higher education and research industry in addition to a good industrial experience. His research interests include drilling fluids, rheology, filter cake characterization, nanoparticle applications, oilfield chemistry, formation damage and well stimulation, unconventional resources, reservoir simulation, and pressure transient/production data analysis. Mahmoud has authored/coauthored 21 technical articles and conference proceedings and serves as technical reviewer/editor for the SPE Drilling & Completion, SPE Production & Operations, and ASME Journal of Energy Resources Technology. He received PhD-degree from Texas A&M University, BSc and MSc degrees from Suez University, Egypt, all in petroleum engineering.

Education:

Certificate	Major	University	Year
PhD	Petroleum Engineering	Texas A&M University - U.S.A	2017
Masters	Petroleum Engineering	Suez University - Faculty of Petroleum and Mining Engineering	2009
Bachelor	.	Suez University - Faculty of Petroleum and Mining Engineering	2004

Teaching Experience:

Name Of Organization	Position	From Date	To Date
FUE	Acting As Head of Dept	09/06/2019	Current
Apache Corporation, USA	Petroleum Engineer	01/01/2018	01/01/2018
Apache Corporation, USA	Engineering Intern	01/01/2017	01/01/2017
Texas A&M University, USA	Graduate Research Assistant (PhD Candidate)	01/01/2013	01/01/2017
Faculty of Petroleum and Mining Engineering, Suez, Egypt	Assistant Lecturer	01/01/2009	01/01/2013
Faculty of Petroleum and Mining Engineering, Suez, Egypt	Demonstrator (Teaching/Research Assistant)	01/01/2005	01/01/2009

Researches / Publications :

Learning based prediction of cuttings concentration for enhancing hole cleaning efficiency in eccentric and deviated wells

Can Artificial Intelligence and Machine Learning Predict the Performance of Nano-based Drilling Fluids? A Review

Mud Loss Analysis Through Predictive Modeling of Pore Pressure and Fracture Gradients in Tin Fouye Tabankort Field, Western Illizi Basin, Algeria

Nanoparticles in enhanced oil recovery: state-of-the-art review

Innovative Role of Magnesium Oxide Nanoparticles and Surfactant in Optimizing Interfacial Tension for Enhanced Oil Recovery

Investigating curve smoothing techniques for enhanced shale gas production data analysis

Cuttings Removal in Eccentric Geometries: A Comprehensive Review of Hole Cleaning Mechanism, Affecting Parameters, and Assessment
A supervised machine learning model to select a cost-effective directional drilling tool
An Automated Approach for Discriminating Hole Cleaning Efficiency While Predicting Penetration Rate in Egyptian Western Desert Wells
Prediction of Filter Cake / Hole Wash-Out for Oil-Based Mud Wells Using Three Different Machine Learning Models
Dimensionless Data-Driven Model for Cuttings Concentration Prediction in Eccentric Annuli: Statistical and Parametric Approach
Preliminary hydraulic fracturing campaign strategies for unconventional and tight reservoirs of UAE: Case studies and lessons learned
Influence of Nanoparticle-Based Drilling Fluids on Egyptian Shale Swelling . An Experimental Investigation
Removing Ilmenite-Based Filter Cakes Using Hydrochloric Acid and Chelating Agent . Experimental Study
Effect of drilling and wellbore geometry parameters on wellbore temperature profile: Implications for geothermal production
Probabilistic Decline Curve Analysis: State-of-the-Art Review
A comprehensive review of deterministic decline curve analysis for oil and gas reservoirs
Reliable Machine Learning for the Shear Strength of Beams Strengthened Using Externally Bonded FRP Jackets
Measuring Maturity of Well Integrity Management - Analysis of Well Integrity in Brownfield Using Maturity Models for Prolonged Well Lifecycle
Artificial Neural Network Model to Predict Filtrate Invasion of Nanoparticle-Based Drilling Fluids
Suitability of Different Machine Learning Outlier Detection Algorithms to Improve Shale Gas Production Data for Effective Decline Curve Analysis
Experimental Study on the Cold Flow Behaviour of Azadirachta Indica (NEEM) Biodiesel Blended with Petroleum-based Fuels and Natural Organic Solvents
MHD Flow of Time-Fractional Casson Nanofluid using Generalized Fourier and Fick's Laws over an Inclined Channel with Applications of Gold Nanoparticles
New Approach to Predict the Filtrate Invasion of Nanoparticle-Based Drilling Mud Using Artificial Neural Network
Hydrodynamic Analysis of the Magnetic Field Dependent Viscous Fluid Flow and Thermosolutal Convection Between Rotating Channels
Picking the Optimum Directional Drilling Technology (RSS vs PDM): A Machine Learning-Based Model
The Influence of Directional Well Azimuth on Bit Performance: A Statistical Approach
Machine-Learning Model Improves Gas Lift Performance and Well Integrity
Entropy Production Simulation of Second-Grade Magnetic Nanomaterials Flowing Across an Expanding Surface with Viscidness Dissipative Flux
Numerical analysis of hydrothermal flow and heat transfer inside a cavity formed due to faults causing earthquakes
Gasification Characteristics and Kinetics of Lipid-Extracted Nannochloropsis gaditana
Insightful Facts on Peristalsis Flow of Water Conveying Multi-Walled Carbon Nanoparticles Through Elliptical Ducts With Ciliated Walls
Visualization of non-Newtonian convective fluid flow with internal heat transfer across a rotating stretchable surface impact of chemical reaction
Effect of Surface Treatment and Fiber Loading on the Physical, Mechanical, Sliding Wear, and Morphological Characteristics of Tasar Silk Fiber Waste-epoxy Composites for Multifaceted Biomedical and Engineering Applications: Fabrication and Characterizations
An experimental study to measure oil recovery factor by chemical agents and carbon dioxide after waterflooding
Numerical investigation of a squeezing flow between concentric cylinders under the variable magnetic field of intensity
Numerical investigation of heat transfer in the nanofluids under the impact of length and radius of carbon nanotubes
Hybrid Nanofluid Flow Induced by an Oscillating Disk Considering Surface Catalyzed Reaction and Nanoparticles Shape Factor
A Comparison of Performance, Emissions, and Lube Oil Deterioration for Gasoline. Ethanol Fuel

A New Intelligent Dynamic Control Method for a Class of Stochastic Nonlinear Systems
Optimization of heterogeneous Catalyst-assisted fatty acid methyl esters biodiesel production from Soybean oil with different Machine learning methods
Numerical Assessment of Dipole Interaction with the Single-Phase Nanofluid Flow in an Enclosure: A Pseudo-Transient Approach
Novel Torque and Drag Model for Drilling Two-Dimensional High-Angle Wells
Numerical-Based Model for Calculating the Risk of Well Integrity Failures in Mature Fields Operated by Gas Lift
A novel machine learning model for autonomous analysis and diagnosis of well integrity failures in artificial-lift production systems
Addressing Diverse Petroleum Industry Problems Using Machine Learning Techniques: Literary Methodology Spotlight on Predicting Well Integrity Failures
Machine Learning Application for Gas Lift Performance and Well Integrity
Using Artificial Intelligence Techniques in Modeling and Predicting the Rheological Properties of Nano-Based Drilling Fluids
Application of Machine Learning Algorithms for Managing Well Integrity in Gas Lift Wells
Multi-Class Taxonomy of Well Integrity Anomalies Applying Inductive Learning Algorithms: Analytical Approach for Artificial-Lift Wells
A Comprehensive Review and Analysis of Maturity Model for Well Integrity in Brownfield
Nanoparticles as Promising Additives to Improve the Drilling of Egyptian Oil and Gas Fields
Estimating Ultimate Recoveries of Unconventional Reservoirs: Knowledge Gained from the Developments Worldwide and Egyptian Challenges
Nanoparticle-Based Drilling Fluids as Promising Solutions to Enhance Drilling Performance in Egyptian Oil and Gas Fields
Estimating Ultimate Recoveries of Unconventional Reservoirs: Knowledge Gained from the Developments Worldwide and Egyptian Challenges
Can Nanoparticles Improve the Characteristics of Drilling Fluids?
Can Nanoparticles Improve the Characteristics of Drilling Fluids?
Effect of Ferric Oxide Nanoparticles on the Properties of Filter Cake Formed by Calcium Bentonite-Based Drilling Muds
Study of Cluster Efficiency in Unconventional Reservoirs by Analytical Simulators
Study of Cluster Efficiency in Unconventional Reservoirs by Analytical Simulators
A New Look at Reserves Estimation of Unconventional Gas Reservoirs
Formation Damage Assessment and Filter Cake Characterization of NPs/Ca-Bentonite Fluids for Drilling Harsh Environments Using Computed-Tomography Scan
EUR Prediction for Unconventional Reservoirs: State of the Art and Field Case
Formation Damage Assessment and Filter Cake Characterization of NPs/Ca-Bentonite Fluids for Drilling Harsh Environments Using Computed-Tomography Scan
Using Ferric Oxide and Silica Nanoparticles To Develop Modified Calcium Bentonite Drilling Fluids
New Magnetite Nanoparticles Allow Smart Drilling Fluids with Superior Properties
Characterization of filter cake generated by nanoparticle-based drilling fluid for HP/HT applications
Smart Magnetic Drilling Fluid With In-Situ Rheological Controllability Using Fe ₃ O ₄ Nanoparticles
Use of Fe ₃ O ₄ and SiO ₂ Nanoparticles to Develop Smart Drilling Fluids: A Comparative Study
Development of Novel Drilling-Fluids Nanoparticles for Enhanced Drilling Operations
A comprehensive approach for the development of new magnetite nanoparticles giving smart drilling fluids with superior properties for HP/HT applications
Incorporation of Fe ₃ O ₄ nanoparticles as drilling fluid additives for improved drilling operations
Nanoparticle-based drilling fluids for minimizing formation damage in HP/HT applications
Development and Testing of Novel Drilling Fluids Using Fe ₂ O ₃ and SiO ₂ Nanoparticles for Enhanced Drilling Operations
Development and Testing of Novel Drilling Fluids Utilizing Nanoparticles for Enhanced Drilling Operations

Development of Nano-based Drilling Fluids for Improved Oil & Gas Applications

Dynamic and Static Fluid Loss Characteristics and Rheological Properties of Nano-Based Drilling Fluids

Utilization of iron oxide nanoparticles in drilling fluids improves fluid loss and formation damage characteristics

Studying the Combined Effect of Wellbore Storage and Skin on Well Testing Using Simulation and Analytical Solutions

Chapter :

Fundamental Research and Application of Physical Science

Machine Learning Outlier Detection Algorithms for Enhancing Production Data Analysis of Shale Gas / In Fundamental Research and Application of Physical Science Vol. 4, 20 May 2023 , Page 127-163

New Correlations to Calculate Vertical Sweep Efficiency in Oil Reservoirs Using Nonlinear Multiple Regression and Artificial Neural Network

Al₂O₃ and CuO Nanoparticles as Promising Additives to Improve the Properties of KCl-Polymer Mud: An Experimental Investigation

A Laboratory Investigation on the Way to Remove the Filter Cake Generated by Ilmenite Water-Based Drilling Fluids

Well Integrity Management in Mature Fields: A state-of-the-Art Review on the System Structure and Maturity

Influence of Tailor-Made TiO₂/API Bentonite Nanocomposite on Drilling Mud Performance: Towards Enhanced Drilling Operations

Formation Damage Assessment and Filter Cake Characterization of Ca-Bentonite Fluids Enhanced With Nanoparticles

Nanoparticle-Based Drilling Fluids as Promising Solutions to Enhance Drilling Performance in Egyptian Oil and Gas Fields

Estimating Ultimate Recoveries of Unconventional Reservoirs: Knowledge Gained from the Developments Worldwide and Egyptian Challenges

Effect of Ferric Oxide Nanoparticles on the Properties of Filter Cake Formed by Calcium Bentonite-Based Drilling Muds

Using Ferric Oxide and Silica Nanoparticles To Develop Modified Calcium Bentonite Drilling Fluids

Thesis :

Improving the Characteristics of Water-Based Drilling Fluids Using Nanoparticles

Design of Well Testing Programs for Oil and Gas Wells using Simulation and Analytical Solutions

Other :

Studying the Combined Effect of Wellbore Storage and Skin on Well Testing Using Simulation and Analytical Solutions