

ICE 2024

AAPG International Conference & Exhibition



AAPG

30 September - 2 October

OCEC

Muscat, Oman

CALL FOR ABSTRACTS

Hosted by



The Role of Geosciences in Shaping our Energy Future

**SUBMISSIONS DEADLINE
18 JANUARY 2024**

The ICE 2024 Committee invites industry professionals, academics and students to submit abstracts relating to the themes below

Theme 1: Alternative Energies Beyond Hydrocarbons, Towards Achieving Carbon Neutrality

The global commitment by many to achieving net zero emissions (NZE) in 2050 has led to initiatives that are a combination of reducing our current activities footprint (hence reducing GHG), and diversification of the portfolio by prospecting for new cleaner energy sources. Geology plays a key role in both activities and offers the opportunity to expand into exploring alternative resources. Academia and industry experts are encouraged to participate to share their innovative ideas and ongoing projects for these new topics. The submitted abstracts related to the future of energy cover, but are not limited to, topics such as prospecting for geologically sourced hydrogen, geothermal energy resources, exploration and assessment of earth / mineral resources, hydrogeology, CSS and CCUS, subsurface energy storage, enhanced oil recovery (EOR) methods, geohazard uncertainty analysis, technical and commercial challenges, and managing non-technical risks.

Theme 2: Digital Transformation, AI and Advanced Material Technologies in Geoscience

Digital advances in data modeling and rapidly evolving AI and ML learning tools are transforming the way we solve our energy challenges, resulting in transforming the ways we work. Quantum and cloud computing technologies have enabled large amounts of data capture, faster and complex computations, and analysis. Moreover, new technology development is enhancing all aspects of exploring and developing energies through increasing speed, efficiency, and contribution to reducing uncertainties. Topics in this theme cover, but are not limited to, subjects such as, advances in digital fieldwork, geospatial and remote sensing data integration, automated and ML workflows, generative AI, robotics and LLMs, quantum computing, nano-technology applications in reservoir enhancement and recovery, and technologies for efficient drilling and exploration and development.

Technical Themes

Theme 3: Discoveries in New Frontier Basins

This theme aims to share knowledge of recently identified global basins and the efforts to unlock resources through creative geological thinking and application of new technologies. Hydrocarbons continue to be part of the future energy mix and the hunt for new affordable hydrocarbon provinces can lead to offsets in development with intense GHG emissions. Abstract topics can cover, but not limited to, basin scale studies, advances in paleogeographic reconstructions and implications for traps, reservoir, seal and source rock distribution in new basins, strategies for future exploration and technologies to help unlock these provinces.

Theme 5: Advances in the Geophysical World

Geophysical methods are leading the way in utilization of advances in digital solutions and technologies. New trends in data acquisition and processing workflows to decipher the subsurface, pushing boundaries in imaging resolutions and to support opportunities for multiple disciplines in hydrocarbon recovery as well as for future energies are rising in the industry. AI applications in geophysical methods are helping to accelerate interpretations and improve predictions to enable speed of execution in an energy transition era. This theme invites abstracts from academia and industry experts to share, but not limited to, their knowledge in areas related to advanced geophysical methods for reservoir characterization, challenges and opportunities in subsurface imaging, developing novel methods for faster seismic acquisition and imaging techniques, applications of seismic attributes, inversion, multi-component and pre-stack data processing, non-seismic methods, reservoir surveillance and monitoring.

Theme 7: Petroleum Systems Analysis and Future Optimization in the Quest for New Energy

Undertaking geochemistry and basin modeling studies is integral to defining the quality and quantity of hydrocarbons generated in a sedimentary basin. Integrated and with multiple inputs and assumptions, modeling usually carries several uncertainties and scenario building is best practice. This allows better quantification, especially in complex geologic settings. Advances in petroleum systems analysis through data collection, analytical techniques and computing capabilities constantly improve predictions. Abstracts from petroleum systems experts on topics covering, but not limited to, the distribution of source rocks, generation and migration history, seal capacity, uncertainty analysis, and basin evolution through geological time for both mature and frontier basins.

Theme 4: New Insights to Unconventional Resource Development

Unconventional resources (shale play, tight reservoirs, CBM, tar sands, gas hydrates) are a target resource globally and many have successfully commercialized developments through innovative solutions for both subsurface and surface challenges. This theme invites abstracts to share knowledge in innovation and technology applications to discover unconventional hydrocarbons with subjects around reservoir characterization, trapping mechanisms, maturation, and assessment of their prospective resources, modeling of unconventional reservoirs and insights in resource developments and production enhancement and performance.

Theme 6: Advancement in Mature Basins through Integration

Growth activities in conventional oil and gas provinces with proven petroleum systems is continuously realizing value despite the maturity of these basins. New ideas driven by multi-disciplinary data integration is opening new discoveries in subtle and stratigraphic play concepts, extending core plays as well as opening emerging plays. Industry professionals and academia are invited to submit abstracts to cover, but not limited to, their knowledge in identification of missed pay opportunities, novel petrophysical workflows, expanding ideas in near field and intra-field exploration, new source rock identification through basin scale data integrated studies, new seismic workflows, and optimization of recovery and productivity in existing fields.

Theme 8: Geomechanics: Fracture Modeling Applications and Fluid Flow Simulation Application

This theme will focus on the understanding of fractures at different scales to support developing of geomechanical modeling for reservoir compartmentalization, characterization fracture networks and improving understanding for optimization in production and enhanced recovery methods. Abstracts are invited from geomechanics experts in industry and academia to cover, but not limited to, case studies of fractured reservoirs, modeling fracture networks, geomechanics workflows, fluid flow simulations, induced seismicity and pore pressures effects.

Technical Themes

Theme 9: Structural Styles and Hydrocarbon Trapping Mechanisms

At the core of any play evaluation the definition of the trap defines the prospect. Traps form either from structuration, can be purely stratigraphic or more commonly be a combination of both. Formation of different trap types from extensional, compressional, strike slip and salt tectonic regimes produce diverse trap geometries of varying column heights. In addition, the effectiveness of the seals is also crucial in defining the columns and is crucial for risk assessment and impact on the volumes. Industry experts and academia are encouraged to submit abstracts to showcase, but not limited to, exploration and field studies of structural geometries, kinematics models, resulting traps styles and the impact on seals in different sedimentary basins.

Theme 10: Stratigraphy and Sedimentology

The understanding of stratigraphic analysis and sedimentological processes is another essential component of any play evaluation. This forms the backbone for any regional evaluation and the drive to explore for new concepts in resource identification, appraisal, and for optimized development. Novel techniques for stratigraphic correlation and the use of analogues are constantly progressing and are powerful tools for enabling the hunt for new trap styles, seals, and reservoirs. The theme invites experts from industry and academia to share, but not limited to, their latest developments on topics related to advances in regional stratigraphic analyses, proterozoic stratigraphic analysis, seismic and sequence stratigraphy, outcrop to subsurface correlations, reservoir provenance, facies and depositional models and modern analogs, reservoir heterogeneity and distribution of flow units, clastic and carbonate diagenesis, and related reservoir quality distribution.



Submit at: Muscat2024.iceevent.org

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Submissions accepted for the program determine the topics included in ICE conference technical sessions

