THE AAPG EXPERIENCE

WHAT TO EXPECT FROM THE AAPG EXPERIENCE

The American Association of Petroleum Geologists (AAPG) and our suppliers, venues and services partners are committed to providing a clean and safe environment and experience for all our event participants. We remain alert to COVID-19 risks and are closely following and adapting to all applicable health and safety guidelines. While conditions vary between countries, cities, municipalities, and facilities, safeguarding measures you may encounter at AAPG events include physical distancing and masking, readily available hand sanitizer, enhanced cleaning and disinfecting protocols, temperature health checks and screenings, minimized touchpoints and cashless payment options.

As personal safety is a shared responsibility, we ask that all participants ensure that they are feeling well and in good health, with no fever or other symptoms related to COVID-19, before showing up at an AAPG event. Any specific delegate obligations will be published in pre-event communications and clearly displayed on signage throughout our venues.

Given the ever-changing nature of the pandemic recovery, registrants will receive regular updates and instructions concerning the latest health and safety requirements.

WORKSHOP OUTLINE

With the recent shale oil boom in North America, source rocks became a subject of great interest and importance to oil and gas companies worldwide. There is a wealth of data available in the public domain to describe and characterise these prolific source rocks in the different American basins. In the Middle East, the unconventional resources are yet to prosper, hence the need to properly understand the hydrocarbon generators of this region.

The AAPG Geosciences Technology Workshop titled “Source Rocks of the Middle East: A World Class Resource for Unconventional?” will focus on the geological aspects of the unconventional revolution which is vital to ensure successful exploration, appraisal and subsequently development of the basins in the region. The technical program of the workshop will cover a wide range of topics, specifically relevant to the Middle East Region, from the basinal scale down to the cores level. The titles of the sessions are as follows:

Session 1: Stratigraphy and Sedimentology of Source Rocks in the Middle East Region
Session 2: Existing Practices and Advances in Basin Modeling
Session 3: Source Rocks Geochemistry
Session 4: Petrophysics and Geomechanics Evaluation of Source Rocks

In addition to the technical sessions, the event will offer an interactive core display. This session will link the ideas and concepts discussed during the oral presentations throughout the workshop to the core specimens on display, thus enhancing the knowledge and experience of the attendees.

One of the main distinguishers of this workshop is that it is based and focused on the geological aspects of the unconventional revolution rather than hydraulic fracturing. Another key distinguisher is that it is dedicated to improving the understanding of regional source rocks rather than sharing the North American experience.

Workshop objectives

The workshop aims to provide a comprehensive understanding of the source rocks in the Middle East. The technical program is developed in a way that covers the depositional environments and transport processes, basin modeling and detailed rock characterisation including geochemistry, geomechanics and petrophysics. The sessions are focused on the existing best practices and the recent advances in each domain.

WORKSHOP GUIDELINES

FORMAT
The workshop will be 3 days, consisting of oral presentations, poster presentations and breakout sessions where participants can discuss and investigate a specific theme that is of mutual interest. The first day will feature an inaugural keynote speech by a high-profile professional from the industry.

ATTENDANCE
Registrations are invited from all relevant disciplines with experience and/or knowledge of the subject areas being addressed in the workshop. Registrations will be accepted on a first-come, first-served basis.

CALL FOR POSTERS
You are invited to prepare a poster for presentation at the workshop. If you are interested in participating, please send a short abstract to cnavarro@aapg.org by 25 August 2022. All posters will be produced as pull-up banners and delivered by AAPG. There will not be any other format available for poster display.

REGISTRATION TYPES & FEES
Fees are inclusive of onsite documentation, coffee breaks and luncheons.

$1,550 AAPG Member
$1,750 AAPG Non-Member
$1,750 Join & Save
$850 Young Professional
$500 Academic
$350 Student (Masters)

*To avail a member rate you must be an active member of AAPG.
**To register as a young professional you must be under the age of 35 with less than 10 years of work experience.

REGISTRATION DEADLINE
To guarantee your seat, please make sure to register by 19 September 2022.

CANCELLATION POLICY
AAPG will refund the tuition, less a $100 processing fee, if the request is received no later than 30 days prior to the workshop. Cancellations must be made in writing. The registrant will accept cancellation notices by telephone, but all such notices must be followed up by fax or e-mail. No refund will be made for cancellations received less than 30 days prior to a workshop being given. Management of various class enrollment constitutes automatic cancellation. If cancellation notice is received by 30 days prior to a workshop, participants are liable for full tuition. AAPG reserves the right to cancel a workshop if enrollment is insufficient to ensure proper effectiveness. Substitutions for individuals can be made at any time. A paid enrollment may be transferred once to a future workshop if the request is received prior to the 30-day cut-off date.
DAY 1 MONDAY 26 SEPTEMBER

07:00-08:30 Workshop Registration
08:30-08:40 Workshop Chair’s Welcome and Introduction
08:40-08:55 INAUGURAL KEYNOTE
Omar Kharouf, Chief Explorationist, Saudi Aramco
08:55-09:25 TECHNICAL KEYNOTE
Andrew Pepper, This is Petroleum Systems LLC

SESSION 1: STRATIGRAPHY AND SEDIMENTOLOGY OF SOURCE ROCKS IN THE MIDDLE EAST REGION

Session Chairs: Afnul Abedeen, Halliburton & Saad Al Shehi, Saudi Aramco

09:25-09:50 Sephiardi Chan, KFUPM
Sedimentology, Chemostratigraphy, and Sequence Stratigraphy of Kimmeridgian Organic-Rich carbonate Mudstone, Western Neo-Tethys

09:50-10:15 Mohammed Alrowaie, Saudi Aramco
Stable Carbon Isotope Geochemistry of Natural Gas and its Application for the Assessment of Organic-Rich Source Rocks

10:15-10:40 Samer Bou Daher, Beicip-Franlab
Upper Cretaceous Source Rocks of the Offshore Levant Basin: Insights from Forward Stratigraphic Modeling

10:40-10:55 Coffee Break & Posters

10:55-12:00 Different core sections from various stratigraphic locations of the Diyab Formation in Kuwait

12:00-13:00 Lunch

13:00-14:00 SESSION 3: SOURCE ROCKS GEOCHEMISTRY

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Session Chairs: Mubarak Al-Hajeri, KOC & Safdar Ali, WVDO

14:00-14:25 Muhammad Usman, KAUST
Source Rock Characterization of Late Jurassic (Early Kimmeridgian) Carbonate Mudrocks in the Western Neo-Tethys: A Potential Resource or a Dilemma

14:25-14:50 Mubarak Al-Hajeri, KOC
Raman-Based Thermal Maturity for Type II-S KEROGEN – Developed and Validated on the Jurassic Najmah and Cretaceous Makhil Formations in Kuwait

14:50-15:15 Norka Marcano Balliache, Schlumberger
Source Rocks and Asphaltenes: What can we Learn?

15:15-15:30 Coffee Break & Posters

15:30-15:55 Francois Gelin, TotalEnergies
Evidence of TSR-Enhanced Petroleum Fluid Alteration in the Diyar Unconventional Formation

15:55-16:20 Tatiana Milena Juliao Lemus, Ecopetrol
Potential Generation of Cretaceous Source Rock in the Middle Magdalena Valley Basin of Colombia: A Case of Study

16:20-16:45 Mohamed Al Ghammari, Shell
Q Source Rocks in Oman: Their Geochemistry, Age and Stratigraphic Position

16:45-17:45 Breakout Session

DAY 2 TUESDAY 27 SEPTEMBER

08:00-09:00 TECHNICAL KEYNOTE
Creties Jenkins, Rose & Associates
Transforming Source Rocks into Reservoirs: A Paradigm Shift for the Middle East

SESSION 2: EXISTING PRACTICES AND ADVANCES IN BASIN MODELING

Session Chairs: Ahmad Jahani, Saudi Aramco & Johannes Wendeboe, TotalEnergies

09:00-09:25 Harald Karg, Saudi Aramco
Aspects of Modern Basin Modeling in Unconventional Play Assessments

09:25-09:50 Thomas Levy, InRange Geology
Using Petroleum System 1D Modeling to “Pre-Drill” Wells in an Unconventional Setting

09:50-10:15 Bandar Ghassai, Saudi Aramco

10:15-10:30 Coffee Break & Posters

10:30-10:55 Pierre van Laer, ADNOC
Challenges in the Use of Basin Models for Unconventional “Shale Oil and Gas” in the UAE

10:55-12:20 Samer Bou Daher, Beicip-Franlab
Estimating the Unconventional Potential with Petroleum System Modelling Approach: Example of a Deformed Basin

12:10-13:00 Core Viewing Session

13:00-14:00 Lunch

UNCONVENTIONAL CORE WORKSHOP

26th September • 13.00-17.00

Workshop Leaders:
Ahmad Nahwi, Saudi Aramco
Saeed Tofail, Saudi Aramco
Anindyia Ghosh, Tatweer Petroleum
Saeed Tofail, Saudi Aramco
Ahmad Nahwi, Saudi Aramco

Description:
The core description session will allow participants to examine organic-rich mudrocks and synchronous conventional rocks.

Different core sections from various stratigraphic locations of the basin will be available to conduct this rock-based workshop.

Core examination will provide data for stratigraphic correlation and environmental interpretation based on depositional, and sedimentological observations.

The core description is expected to cover Manifa, Tuwaig and possibly a small section of Dhoura formation. It will include different carbonate facies in this stratigraphy and would have some supporting thin section petrography.

Learning Outcomes:

- Characterize mudrocks and their age-equivalent conventional rocks
- Identify sedimentary structures, porosity, grain types, etc.
- Conduct stratigraphic correlation and environmental interpretation
- Summarize finding and outline a simplified gross depositional environment map
- Exercise Details:
- Examine the various cored sections
- Make your own observations
- Assess the depositional environment for each cored section
- Use your interpretations to place the various cores on the provided map and name the different zones
- Sedimentological Aspects to Consider:
  - Grain size and type
  - Color
  - Visual porosity
  - Cyclic and heterogeneity

POSTER PRESENTATIONS

Abir Alabbad, Saudi Aramco
Digital Rock Physics Workflow for Unconventional Rock Samples

Pan Luo, Saudi Aramco
Source Rock Kinetics: Uncertainty in Basin Modeling and Unconventional Resource Assessment

Pan Luo, Saudi Aramco
A Novel Method to Assess Thermal Reactivities of Source Rocks

Hakim Saibi, UAE University
Inhibition of Asphaltene Precipitation by Al2O3 - Fe2O3 Nanocomposites
Alberto Ortiz is a geologist graduated from the Universidad Nacional de Córdoba, Argentina in 1999. He worked in large oil and oil services companies (Schlumberger, Total, YPF). He started as a petrophysicist after finishing the Schlumberger’s Log Analyst Training School in 2000 (LAT). At the beginning of his career, his activity was concentrated in Argentina and Brazil in the latter, providing support to the petrophysical characterization of both clastic and pre-salt carbonates offshore reservoirs. He was temporarily assigned in Qatar in 2004. In 2011 he joined YPF and two years later he was part of the team dedicated to the unconventional reservoir development project of Vaca Muerta.

During 8 years he actively participated in the evaluation and development of this type of reservoir in a multidisciplinary team, providing technical support & training, publishing technical articles and interacting with the different disciplines involved such as engineering, geomechanics and geophysics between others. He also coordinated research projects with the YPF research center and laboratories outside of Argentina. He was a distinguished speaker for 3 consecutive years for the SPWLA related to the petrophysical evaluation of the Vaca Muerta formation and is the first author of the AAPG Vaca Muerta memoirs. He has recently formed the Net Zero Carbon Solutions company. He is a teacher at universities in Argentina and Colombia and coordinator of the formation evaluation team at Argentinian Congress CONEXPLO 2022.

The petrophysical characterization of unconventional shale-type reservoirs has been one of the most approached and relevant issues in the oil and gas industry in the last 8 years. This is because after several years, the operating companies comprehended the impact that an appropriate characterization of the reservoir has on their project economics.

Another reason for this were the technical obstacles encountered in the measurement of petrophysical properties such as porosity, saturation and permeability due to the complexity of this type of reservoir. Obstacles and limitations not only relate to laboratory measurements but also to electrical logging tools.

As a consequence of this, nowadays, petrophysical evaluations in this type of reservoir do not have standardized workflows established and accepted worldwide as is the case for conventional reservoirs. This motivates the professionals involved in the study of this type of rocks to dedicate a lot of effort in the validation of the technologies used, and sometimes it is difficult for them to understand the results, the evaluation of uncertainties and the construction of petrophysical models with results and representative parameters of the subsurface conditions.

The proposed course focuses on providing key knowledge for a better characterization of the rock both in the aspects related to the matrix and permeability due to the complexity of this type of reservoir. Obstacles sometimes it is difficult for them to understand the results, the evaluation of uncertainties and the construction of petrophysical models with results and representative parameters of the subsurface conditions.

The approach will be based on the convergence of different technologies that support and give robustness to the results.

The contents that will be provided will include laboratory testing techniques and petrophysical evaluation of electrical well logs for unconventional shale-type reservoirs. The contents provided will cover a variety of studies based on the most diverse physical principles that will include the latest advances and techniques used in the industry such as Nuclear Magnetic Resonance, Spectroscopy, Dielectric, Computed axial tomography and SEM images, among others.

As a result of this, attendees will have tools that allow a more comprehensive understanding of this type of rocks, a better assessment of the uncertainty of the model used and the necessary steps to improve its precision, accelerating the learning curve. The contents provided will also allow knowing the critical parameters that must be taken into account for the definition of areas to be drilled.