



SPE Virtual Workshop:

EOR for More Sustainable Future: The Role of Chemical and Hybrid EOR

Host Organisation



15-16 June 2021 | Virtual [GST, UTC+4] | www.spe.org/go/21aab2

Who We Are

SPE is the largest individual member organisation serving managers, engineers, scientists and other professionals worldwide in the upstream segment of the oil and gas industry.

Who Should Attend?

- › Reservoir Engineers
- › Production Engineers
- › Surveillance Engineers
- › Facilities Engineers
- › Geologists
- › Geophysicists
- › Project Managers
- › Research and Development Professionals
- › Geoscientists
- › Technical Managers
- › Chemical Engineers

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Oil and gas resources remain the world's major contributor to energy supply even with the recent energy generation from renewable sources. With more than 70% of world's reserves remaining in mature fields, it becomes critical to accelerate their production through new cost-effective technologies. Chemical EOR activities have shown rapid growth world-wide during the last decade; yet fewer amount of work has been done on complex reservoirs (carbonat, HT/HS, low permeability, fractured, heterogeneous).

This workshop is intended to address the main cEOR challenges that hinder its implementations at large scales in complex reservoirs, and also propose novel techniques, including hybrid mechanisms, to mature field developments economically. The two-day workshop will be highly interactive where the sessions are designed to capture a comprehensive assessment of innovative technologies, case studies, monitoring and surveillance, reservoir conformance, and surface facilities.

Attendees will have ample opportunity to interact with industry professionals, experts, and scientists who have been extensively involved in cEOR projects. Moreover, they will be able to share knowledge, experiences, and gain insight about recent projects on best practices and obstacles.



Society of Petroleum Engineers

Committee



Budoor Al Shehhi
Chairperson
ADNOC



Waleed Alameri
Khalifa University



Ali Al Habsi
Occidental of Oman



Torsten Clemens
OMV



Nikolay Glavnov
Gazprom Neft



Cai Hongyan
PetroChina



Stephane Jouenne
Total



Carolina Romero
ADNOC Onshore



Yingcheng Li
SINOPEC



Franco Masserano
Eni



Jesús Montes
CEPSA



Mikel Morvan
SOLVAY



Soujatya Mukherjee
Wintershall DEA



Neeraj Rohilla
DOW



Garud Sridhar
Schlumberger



David Rousseau
IFPEN

Tuesday, 15 June 2021

1000-1030

Welcome by Chairperson and Keynote Address



Keynote Speaker:
Mohamed Al Marzouqi
Senior Vice President
Development Function
ADNOC

1030-1200

Session 1: What's New in Chemical EOR?

Session Chairs: Ali AlSumaiti, ADNOC;
Torsten Clemens, OMV

cEOR has been around since the 1960s. Thousands of papers were published, many field tests of cEOR were performed, and cEOR was implemented in a number of fields. Despite all of these activities, cEOR only contributes less than 1% to the total world oil production. However, in the last couple of years, a growing number of cEOR projects were sanctioned on almost all continents. What is new in cEOR that leads to the increasing interest in the application of the technology? This session will shed some light on the latest advances, the development of new chemicals for EOR, new applications of cEOR, the use of cEOR in different rock lithologies, the application of digital technologies, Artificial Intelligence (AI) and Machine Learning (ML) to reduced uncertainty and risk of cEOR applications.

1200-1230

Break

1230-1400

Session 2: Learnings from Field Experience in Chemical EOR—Case Studies

Session Chairs: Ali Hassan Al Mesmari, ADNOC;
Neeraj Rohilla, DOW

Lessons learnt from the field case studies will help bridge the gap between theory and practice in a range of real-world cEOR techniques. The key to an effective EOR project is to anticipate the differences between the plans and the realities on the field. The case studies cover practical problems, underlying theoretical and modelling methods, operational parameters, solutions and sensitivity studies, and performance optimisation strategies.

This session intends to bring about the key lessons learnt by the experts, the main technical and operational challenges in designing and implementation of cEOR pilots, modelling and simulation of cEOR projects. Other topics covered in this session are the key aspects for EOR scalability from pilot to full field implementation, the challenges in monitoring and surveillances, and the parameters

of flow assurance, and conformation of well treatment.

1400-1420

Break

1420-1550

Session 3: Innovation on EOR Conformance

Session Chairs: Soujatya Mukherjee, Wintershall DEA;
Garud Sridhar, Schlumberger

Proper reservoir conformance implementation results in better volumetric sweep, reduction of excess water production, and accelerated oil and gas production in most cases. Growing challenges of curbing water production and stricter environmental enforcement on water disposals worldwide are pushing companies for identifying environment friendly conformance solutions to reduce project OPEX, carbon footprint, and deliver sustainable solutions. To realise this goal, advancements in AI/ML techniques could contribute as one of the more novel options to develop screening algorithms to aid the implementation of relevant conformance strategies. This session aims to bring together topics and advances in reservoir conformance applications involving but not limited to the mitigation of water highways for clastics and carbonates, 'green' solutions for reservoir conformance, development in chemical systems (e.g. polymers, gels, foams, etc.), gas conformance, role of AI/ML in conformance applications.

1550-1600

Day 1 Closing Session

Wednesday, 16 June 2021

1000-1030

Day 2 Welcome and Keynote Address



Keynote Speaker:
Ken Sorbie
Professor
Institute of Petroleum
GeoEnergy Engineering
Heriot-Watt University

1030-1200

Session 4: EOR Facilities and Design: Challenges, Strategies, and Mitigation Plans

Session Chairs: Mikel Morvan, SOLVAY;
Carolina Romero, ADNOC Onshore

Bringing EOR from small scale pilots to full field implementation still raises many challenges in the oil and gas industry. Designing and conceiving fit-for-purpose facilities at accessible costs and delivering them with a clear de-risking and operational strategy will be key for the industry to move towards large scale EOR

implementation. This session will cover EOR development strategies from polymer deployment, low salinity implementation to hybrid methods including low salinity and polymer, polymer and CO₂, WAG and (A)SP. EOR pilots to full field developments will be addressed with the intent of sharing successful technological and operational concepts and advancements. What are the main operational challenges for cEOR and hybrid methods? How will back produced EOR fluids impact facilities? How to mitigate and safeguard asset integrity? What can we optimise to lower costs?

1200-1230

Break

1230-1400

Session 5: Moving to Zero Emissions/Sustainability and Carbon Footprint of cEOR and Hybrid Methods

Session Chairs: Nikolay Glavnov, Gazprom Neft;
Stephane Jouenne, Total

In the context of decreasing greenhouse gas emissions for limiting global warming, the energy intensity and the CO₂ emissions of oil and gas production schemes is now part of the decision-making process. The energy consumption and the CO₂ footprint of the different recovery techniques can be quantified by exergy balance and life cycle assessment of the chemicals used. By accelerating and increasing the oil recovery, cEOR techniques can lead to better economics and a more sustainable recovery. Reservoir management and development would be highly influenced by CO₂ emission price. This session is dedicated to the potential benefits of EOR as low carbon footprint recovery technique.

1400-1420

Break

1420-1550

Session 6: Hybrid EOR Methods

Session Chairs: Waleed Alameri, Khalifa University;
Franco Masserano, Eni

The session covers laboratory and field studies on hybrid EOR methods where two or more EOR processes are combined to optimise their effectiveness in terms of oil recovery and cost. Hybrid methods include combinations of chemicals (surfactants, polymers, and alkali), gases (CO₂, N₂, CH₄, lean and rich hydrocarbons), low salinity waterflooding, and nanoparticles. The term hybrid could be also considered in a broader sense including other novel applications. The session is a great opportunity to learn from experts in the industry and academia along with the latest breakthroughs in this hybrid EOR domain based on both laboratory results and field trials.

1550-1600

Workshop Closing Session

1600-1630

ePoster Q&A Session (MS Teams)

General Information

Format

Two days of informal discussions prompted by selected keynote presentations and discussions. Focused topics and issues critical to advancing both technology and best practices. Majority of the presentations are in the form of case studies, highlighting engineering achievements, and lessons learnt. In order to stimulate frank discussion, no proceedings are published and the press is not invited to attend.

Documentation

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speaker
- Work in progress, new ideas, and interesting projects are sought.

Attendance

Registrations will be accepted on a first-come, first-serve basis. The Steering Committee encourages attendance from those who can contribute to the workshop most effectively either in discussions or with posters. A mix of attendees in terms of geographic origin, companies, and disciplines will be encouraged.

Commercialism

In keeping with workshop objectives and the SPE mission, commercialism in posters or presentations will not be permitted. Company logos must be limited to the title slide and used only to indicate the affiliation of the presenter and others involved in the work.

Attendance Certificate

All attendees will receive an attendance certificate attesting to their participation in the workshop.

Continuing Education Units

Attendees at this workshop qualify for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the workshop.

Sponsorship Information

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REGISTRATION FORM

IMPORTANT:

Registration Fee **MUST** be paid in advance for attending the workshop.

WORKSHOP FEE:

SPE Members:

- After 16 May 2021 = USD 480
- Speaker/Author/Committee/
Session Chair = USD 420
- Faculty = USD 210

Nonmembers:

- After 16 May 2021 = USD 500
- Speaker/Author/Committee/
Session Chair = USD 440
- Faculty = USD 210

*Prices are subject to 5% VAT as per U.A.E.
Federal Decree Law no. (8) of 2017.*

3 EASY WAYS TO REGISTER:

Online: www.spe.org/go/21aab2

Email: registrationdubai@spe.org

Telephone: +971.4.457.5800

Questions:

Contact Yousuff Dadapeer at ydadapeer@spe.org

CANCELLATION AND REFUND POLICY

- For cancellations received after the registration deadline, 16 May 2021, 25% refund will be made to the registrant.
- No refund on cancellations received within seven days prior to the workshop date, i.e. on or after 8 June 2021.

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Alternatively, you can email registrationdubai@spe.org.