SPE Symposium: ESP Journey to the Future

19-20 February 2020  Sheraton Oman Hotel, Muscat, Oman

www.spe.org/go/20mees

Registration Open!
The SPE Symposium is a specialised biannual event on Electrical Submersible Pump (ESP) systems, covering insights of the ESP industry in its technical, operational, and commercial aspects. It offers a unique opportunity for participants to broaden their understanding of current ideas and processes, and for industry practitioners to share and discuss best practices, lessons learnt and technological advances.

Why Attend?

- Hear the latest industry trends and insights from E&P experts from across the globe
- Enrich your ESP technical knowledge by discovering new methodologies, techniques and innovations with a focus on: technical applications, operational excellence, lifecycle cost, and contract management
- Explore the progress digital transformation has made in relation to ESP technology and operations
- Exchange best practice, progressive approaches, and innovative applications with experts and professionals from across the industry.

Who Should Attend?

Artificial Lift Engineers
Production Technologists
Production Professional
Optimisation Professionals

Committee
Co-Chairs

Atika Al-Bimani
Petroleum Development Oman

Fouad Eid
Apergy

Mohammad Ali
Saudi Aramco

Members

Ahmad Al-Arfaj, Saudi Aramco
Amer Al-Hinai, Sultan Qaboos University
Jasim Al Jabri, Occidental Oman
Haitham Al-Maaita, Valiant Artificial Lift Solutions
Nora Hussain Al-Maqssseed, Kuwait Oil Company
Said Al-Riyami, Baker Hughes, a GE company
Mohammed J. Alherz, Alkhorayef Petroleum
Mohamed Alsiemat, Schlumberger
Antonio Andrade Marin, Petroleum Development Oman
Said Dirawi, Halliburton
Basil Elzein, Oman Shell
Alexander Gorlov, Shell Kuwait
Rayyan Mofty, Alkhorayef Petroleum
Ahmed Naabi, Daleel Petroleum
Anton Shakirov, Lex Submersible Pumps
Yanni Wahba, HUATONG Cable Group
Sandy Williams, Artificial Lift Performance Ltd (ALP)
Mondher Yassine, PFT Systems & Connectors
Mohammed Zaharan, ARA Petroleum

Bronze Sponsors:

REGISTRATION OPEN!
Visit: www.spe.org/go/20mees
## Symposium Schedule

### Wednesday, February 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>0800–0840</td>
<td>Welcome Coffee, Collection of Badges and Delegate Packs</td>
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<tr>
<td>0840–0845</td>
<td>Seating and Safety Announcement</td>
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<tr>
<td>0845–0930</td>
<td><strong>Symposium Opening Ceremony</strong></td>
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<td><strong>Keynote Speaker:</strong> His Excellency Salim Al Aufi, Ministry of Oil and Gas, Oman</td>
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<td></td>
<td><strong>Welcome Address:</strong> Shauna Noonan, Occidental Petroleum</td>
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<td><strong>Symposium Chair:</strong> Atika Al-Bimani, PDO</td>
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<tr>
<td>0930–1000</td>
<td>Coffee Break</td>
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<td>1000–1110</td>
<td><strong>Panel 1: Next Big Step Change in ESP</strong></td>
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<td></td>
<td><strong>Moderators:</strong> Basil Elzein, Oman Shell; Abdullah Al Saygh, Ministry of Oil and Gas, Oman</td>
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<td>The last few decades have seen a spike in the number of ESPs deployed globally making ESPs the preferred artificial lift mechanism for most operators. The technology has evolved to meet the demand by expanding its operating envelope whilst increasing reliability. The industry is now expecting the next big step change which will take ESPs to new frontiers. Panelists are asked to present on the latest technological advancement in ESPs with a focus on successful deployments with reliabilities matching or exceeding what has been reached to date. New technologies are often challenged economically and so any recommendations on how to reach a win-win for both suppliers and operators throughout the life cycle of the well are welcomed.</td>
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<tr>
<td>1110–1130</td>
<td>Coffee and Poster Presentation</td>
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<tr>
<td>1130–1230</td>
<td><strong>Session 1: Technology and R&amp;D</strong></td>
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<td><strong>Session Chairs:</strong> Alexander Gorlov, Shell Kuwait; Hilal Al-Mamari, Petroleum Development Oman</td>
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<td>Research and development plays a critical role in the innovation process. It’s a necessary investment in technology and future capabilities which is transformed into new products, processes, and services. ESP particularly needs to develop new technologies addressing the constant challenges from end users in improving the reliability of equipment and in solving problems related to the optimization of oil production. Faster, more reliable and cheaper, that’s what becomes the main requirement in our time in the development of new technologies, but this balance is unlikely to be achieved in full without R&amp;D. Rigless and slim ESPs, ultra-high-speed pumps are just a few examples of these technologies.</td>
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<tr>
<td>1230–1330</td>
<td>Lunch</td>
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<tr>
<td>1330–1510</td>
<td><strong>Session 2: Big Data and AI in ESP – Breakout session</strong></td>
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<td></td>
<td><strong>Session Chairs:</strong> Basil Elzein, Oman Shell; Nora Hussain Al-Maqsseed, Kuwait Oil Company</td>
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<td>While the industry is seeing a healthy increase in the number of ESPs deployed, the same cannot be said for the capability of engineers to manage the increased workload. The lower for longer oil prices that we have experienced over the last decade has hurt our ability to retain and recruit technically competent people. This has created the need for change in how our technical professionals do their work. Presentations will focus on how big data and artificial intelligence has enabled better surveillance and failure prediction. Additionally, latest advancements in remote monitoring of continuously flowing and intermittent flowing wells will be discussed.</td>
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<tr>
<td>1510–1530</td>
<td>Coffee and Poster Presentation</td>
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**1530–1630**

**Session 3: Electrical Challenges and Solutions/Mitigation**  
**Session Chairs:** Amer Al-Hinai, Sultan Qaboos University; Sandy Williams, Artificial Lift Performance

Electrical Submersible Pumps (ESP) are one of the most reliable and efficient ways among artificial lift techniques for oil production. There are major challenges facing ESP operation that limit the optimal utilisation of such equipment. Among these challenges are ESP failures associated with electrical and mechanical components. Such failures might be related to equipment design, while others could be due to power quality problems, surface equipment, or downhole electrical components. In order to closely understand ESP electrical failures and to come up with proper mitigations, there is a need to have access to downhole measurements of the electrical parameters, such as downhole voltage and current, using downhole sensors. In addition, energy consumption and ESP efficiency are one of the tracks to be discussed in this session. Similarly, utilising renewable energy to power ESP, including solar energy, could be another venue for discussion.

**1630–1730**

**Session 4: ESP Run Life Enhancement Case Studies**  
**Session Chairs:** Ahmed Naabi, Daleel Petroleum; Mohammed Jaber Al-Herz, Alkhorayef Petroleum

While the population of ESPs in the industry has been increasing day by day, their reliability to continue operating smoothly in different reservoir environment is very important. Longer running time for ESPs with controlled failure rate is an ultimate goal for both operators and service providers, especially with lease type of contracts. There are many technical challenges for ESPs that may lead to short run life including but not limited to: gas, corrosion, solids & scale build up, high temperature etc. Being able to overcome these issues can lead to better ESP run life.

Areas for possible RL improvement may include proper ESP candidate selection, good ESP design, adequate and cost effective material selection, improved installation practices, close eye monitoring and optimisation throughout ESP operating period and perform detailed failure analysis.

This session is meant to go through some case studies on ESP run life enhancement and presenters to share experience to others on how successfully managed to improve their ESP run life and reduce failure rate, thus produce oil at lower cost and controlled oil deferment.

**1730–1740**

Wrap-Up and Summary of Day 1

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**Thursday, February 20**

**0815–0850** Coffee and Poster Presentation

**0850–0900** Day 2 Introduction by Symposium Chairperson

**0900–1010** Panel 2: ESP Contract Models  
**Moderators:** Atika Al-Bimani, Petroleum Development Oman; Fouad Eid, Apergy

There are many ESP contract models in use around the world today between Operating Companies and Services Providers. These include but are not limited to the following:

- Product sale for both surface and downhole equipment
- Product sale for surface equipment and lease for downhole equipment
- Lease of surface and downhole equipment
- Product sale of surface equipment and of downhole equipment only after pulling out
- Multi AL type contract for the life of the well

Each type of contract model will undoubtedly have its advantages and disadvantages depending on the operating conditions, field, and well location. These contract models include differing KPI’s, ESP run life management procedures, economic selection of ESP’s, inventory management procedures, and well life cycle cost considerations.

Taking into account the above contract models, their respective considerations, and the oil price scenario that exist today, how do Services Companies continue to find profit in order to re-invest in new technologies and enhanced run life capabilities, so that Operators can continue to improve ROI and NPV throughout their fields?

**1010–1100** Coffee and Poster Presentation
Unconventional reserves such as the Bakken and Permian basins are employing a variety of new artificial lift technologies at their well sites. These reservoir developments have employed artificial lift technologies at different intervals throughout the life of the reservoir. Most often, lifting liquids from the well to allow the gas to flow using its own energy, but today some methods are also aiding in lifting the gas. Artificial lift approaches fall into two categories: “energy-added methods and reservoir energy methods.”

Energy-added methods: use external energy to lift fluids to the surface, and include electrical submersible pumps (ESPs), gas-lift, jet-pumps and rod/beam-pumps intermitters, plunger-lift, foam-lift and velocity strings.

Reservoir energy methods: use the pressure in the reservoir to lift fluids to the surface, reservoir energy methods include Operating companies that are successful in unconventionals are the ones that get artificial lift right. Artificial lift needs to be considered upfront for any development and not as an after-thought.

This session will explore the different types of artificial lift that can be employed throughout the life of an unconventional reservoir and the emerging artificial lift technologies that are changing the way we produce and maximise gain from these reservoirs.
**Registration**

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**Registration is now open**

Visit [www.spe.org/events/20mees](http://www.spe.org/events/20mees) to register for the SPE Symposium: ESP Journey to the Future.

<table>
<thead>
<tr>
<th>Full Conference Registration</th>
<th>Fee Per Person</th>
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<tbody>
<tr>
<td></td>
<td>By 5 January</td>
</tr>
<tr>
<td>SPE Member</td>
<td>USD 1000</td>
</tr>
<tr>
<td>Non Member</td>
<td>USD 1200</td>
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Symposium fee includes Technical Sessions, Coffee Breaks and Luncheon. Accommodation is not included in the Symposium registration.

**Cancellation Policy**

A processing fee of USD 100 will be charged for cancellations received before the registration deadline 20 January 2020. For cancellations received after the registration deadline, a 25 percent refund will be made to the registrant. No refund will be issued for cancellations received within seven days prior to the Symposium date (12 February 2020). No refund will be issued if a registrant fails to attend the Symposium.

**VAT Information**

With VAT already introduced in some parts of the GCC, should Oman decide to follow suit, we will issue a VAT invoice once regulations have been finalised.
