Society of Petroleum Engineers

Under the patronage of
His Excellency Salim Al Aufi,
Undersecretary,
Ministry of Oil and Gas, Oman

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

REGISTRATION OPEN!

Visit: **www.spe.org/go/20mees**

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-Maqsseed, **Kuwait Oil Company**
Said Al-Riyami, **Baker Hughes, a GE company**
Mohammed J. Alherz, **Alkhorayef Petroleum**
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Alexander Gorlov, **Shell Kuwait**
Rayyan Mofty, **Alkhorayef Petroleum**
Ahmed Naabi, **Daleel Petroleum**
Anton Shakirov, **Lex Submersible Pumps**
Yanni Wahba, **HUATONG Cable Group**
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Symposium Schedule

Wednesday, February 19	
0800–0840	Welcome Coffee, Collection of Badges and Delegate Packs
0840–0845	Seating and Safety Announcement
0845–0930	**Symposium Opening Ceremony** **Keynote Speaker:**  **His Excellency Salim Al Aufi** Ministry of Oil and Gas, Oman **Welcome Address:**  **Shauna Noonan** Occidental Petroleum **Symposium Chair:**  **Atika Al-Bimani** PDO
0930–1000	Coffee Break
1000–1110	**Panel 1: Next Big Step Change in ESP** **Moderators: Basil Elzein, Oman Shell; Abdullah Al Saygh, Ministry of Oil and Gas, Oman** 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.
1110–1130	Coffee and Poster Presentation
1130–1230	**Session 1: Technology and R&D** **Session Chairs: Alexander Gorlov, Shell Kuwait; Hilal Al-Mamari, Petroleum Development Oman** 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&D. Rigless and slim ESPs, ultra-high-speed pumps are just a few examples of these technologies.
1230–1330	Lunch
1330–1510	**Session 2: Big Data and AI in ESP – Breakout session** **Session Chairs: Basil Elzein, Oman Shell; Nora Hussain Al-Maqsseed, Kuwait Oil Company** 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.
1510–1530	Coffee and Poster Presentation

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

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

1100–1200	**Session 5: Unconventional Reservoir Applications and Smart Completions** **Session Chairs: Fouad Eid, Apergy; Jasim Al Jabri, Occidental Oman** 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.
1200-1300	Lunch
1300–1440	**Session 6: ESP Standards and Quality Assurance – Breakout Session** **Session Chairs: Cyril Girad, Artificial Lift Excellence; Muhammad Z. Ali, Alkhorayef Petroleum** Artificial lift equipment quality assurance and the related international standards and recommended practices are key elements to deliver the expected reliability of selected artificial lift equipment for the intended application and to maximize the value creation of the lift method. The aim of this break out session is to have an awareness discussion on available ESP standards and quality assurance, from manufacturers to the operation. The expectation of this break out session is that the participants will take away the availability of key standards and quality assurance and their benefits to maximise ESP run life.
1440–1500	Coffee and Poster Presentation
1500-1600	**Session 7: Business Models** **Session Chairs: Said Dirawi, Halliburton; Mondher Yassine, PFT Systems & Connectors** Various business models are currently developed to provide the most economical approach when compared to different artificial lift method for multiple application. This session will discuss both customer and service provider's business models. It will also describe the selection process of the most applicable method (direct sale, rental, lease, lease to own, installments, etc) and highlight the challenges and solutions implemented to overcome these challenges during project development. Several technical and operational challenges are encountered during the contract implementation, change in scope, requirements, etc. In addition to, other lesson learned during ESP contract execution. Commercial modeling of tenders and projects will take into consideration economic value added analysis, pricing justification and defense, evaluation of alternative business models (sales vs lease vs rental, risk/reward, performance based contracts).
1600–1700	**Session 8: Surveillance and Optimisation** **Session Chair: Antonio Andrade Marin, Petroleum Development Oman** Production Surveillance and Optimisation aim to ensure the best performance and optimum operating conditions of Electrical Submersible Pump (ESP). Enabling state-of-the art real-time monitoring of well performance, within the dynamic and changing operating environments, requires perfect orchestration between real time surveillance and optimisation tools, infrastructure, data management, monitoring factors, real time data requirements and basic and advanced diagnostic features. End-to-end processes need to work seamlessly to ensure the automatic creation and update of the physics based well models, evaluated with real-time to automate the ESP well performance analysis, well test validation and optimisation, amongst others. In the last 3½ years, through focused teams, Petroleum Development Oman has successfully embraced state-of-the art real-time monitoring of wells with tangible results.
1700–1715	Closing Ceremony

Registration

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Registration is now open

Visit **www.spe.org/events/20mees** to register for the SPE Symposium: ESP Journey to the Future.

Full Conference Registration	Fee Per Person	
	By 5 January	After 5 January
SPE Member	USD 1000	USD 1200
Non Member	USD 1200	USD 1400

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

www.spe.org/events/en/2020/symposium/20mees/register.html

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Middle East, North Africa, and South Asia
Office 3101/02, 31st Floor, Fortune Tower,
JLT, PO Box 215959, Dubai, UAE

F: +971.4.457.3164

T: +971.4.457.5800

E: kdunn@spe.org

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