

# Forums Continue to Look into the Future

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SPE continues to bridge contemporary technology to future industry needs with SPE Forums, the high-level, idea-generating seminars. This year marks the 30th anniversary of the first Forum Series. These meetings continue to feature discussions on what the industry will be like and what technology will be needed over the next 5 to 10 years.

Forums are designed to bring people from across the industry who know the most about a specific technology together in one place for 5 days to discuss the future development of the technology—the potential of the technology, the challenges and barriers, and possible directions and solutions. Forum participants are industry innovators who have the job of leading technology development within their organizations.

“Forums are designed to be forward looking and to address technologies that are emerging or that may not currently exist,” said Bill O’Brien, Chief Reservoir Engineer for Occidental of Elk Hills. He has been involved in the Forum Series programs since 1999 and is currently Chairperson of the Forum Series Coordinating Committee. “Forums attract experts within our industry and academia to focus on the future challenges. From each forum I have attended, I have taken away ideas ranging from real-time production optimization to enhanced oil recovery of naturally fractured reservoirs. These topics also tend to cover areas of higher risk with the potential of higher returns.”

The Forum Series has brought industry experts together to shape the future of technology development. Past forum topics such as horizontal drilling, smart wells, real-time optimization, and produced water management contributed

to new developments and innovations that are used today.

“More than 25 years ago, forums were looking at in-situ combustion, directional drilling, and measurement while drilling. Each of these technologies is in use today,” said O’Brien. “Some topics are recurring themes because technologies continue to improve and evolve. These have included such topics as reservoir management, naturally fractured reservoirs, and reservoir conformance. As our industry evolves, so has the need to optimize our operations with advanced technology. For example, this year a forum will be held to discuss the benefits of artificial intelligence. This kind of technology is not common today, but I’m hopeful it will be in 10 or 15 years.”

Ahmed Abou-Sayed, President and founder of Advantek International and Informatiks International, recalls an SPE Forum in Europe on produced water management (PWM) held in the early 1990s. “The attendees formed, in co-operation with SPE, a technical interest group on that subject. The group formed a working taskforce to develop guidelines and best practices for produced water injection. The taskforce combined operators, service companies, regulators, and others. The developed document, adopted by the European Economic Community Convention for the Protection of the Marine Environment of the Northeast Atlantic, became an industry standard. BP, my employer at that time, took advantage of the compiled knowhow to set an overall strategy on PWM in BP. Later we started a joint industry funding of an R&D project inside BP to further develop that technology,” he said. Abou-Sayed is now a consultant for a company that works with operators and

regulators to optimize PWM processes and waterflood injection.

## Forum Series Format

Forums are different from Applied Technology Workshops in that they focus on tomorrow’s problems and the technologies that will be needed in the future rather than on technology that is being applied today. The structure and format of forums allow participants to maximize discussion and the exchange of new ideas. Forums are:

- Limited to 75–85 people to allow opportunities for discussion.
- Applications to attend are reviewed by the Forum Steering Committee, which selects the attendees based on who will contribute the most to the discussion and on having a balance of viewpoints among service companies, operators, consultants, and academics.
- Confidential to encourage open discussion. Extensive note-taking is not allowed, and nothing is published except possibly a short summary if all attendees agree to one.
- Heavy on discussion and interaction. Formal presentations are discouraged. Break-out groups are often used to discuss a topic in a smaller group and then report back to the full group.
- Relaxed and informal with time for networking.
- Not for everyone. Forums are about idea generation, and are the place for companies to send their key technologists and brightest people.

“I enjoy the opportunity to discuss a forum topic with the best technical people our industry has to offer,” said O’Brien. “Although other SPE conferences may cover a broad range of

### 2009 SPE Forum Series Topics

Forums were held exclusively in North America until 1988, when two forums were held in Europe. The first forum in the Asia Pacific was held in 1992, in the Middle East in 1994, and in South America in 1996. SPE holds forums in North America, South America, Europe, the Middle East, and the Asia Pacific. Each forum draws international attendance, though the majority of attendees may be from the local region. Listed below are the 2009 forums.

#### Africa

17–22 May

The Heavy Oil Challenge: Completion Design and Production Management  
Hammamet, Tunisia

#### Americas

31 May–5 June

Artificial Intelligence in the E&P Industry: Exploring Opportunities for Better Decision Making  
Colorado Springs, Colorado

31 May–5 June

Maximizing Oil Recovery in the 21st Century  
Colorado Springs, Colorado

16–21 August

The Future of Stimulation in Tight Gas and Gas Shale  
Kananaskis, Alberta, Canada

25–30 October

Operational Innovation for Field Rejuvenation—Lift No Water  
Dorado del Mar, Puerto Rico

#### Asia Pacific

19–24 April

Overcoming Barriers to Deliver ERD Wells Beyond 15 km  
Kota Kinabalu, Sabah, East Malaysia

#### Europe

13–18 September

CO<sub>2</sub> Capture and Storage: Can the Oil and Gas Industry Support its Development and Deployment?  
Cadiz, Spain

20–25 September

The Battle to Reduce Drilling NPT: Technology, Processes, and People  
Cadiz, Spain

11–16 October

Getting to Robust Production Forecasts  
Cadiz, Spain

topics, forums are focused, intense, and deliberate. Over a 5-day period, forum attendees cover specific topics in great detail with informal discussions and exchange of ideas.”

O'Brien says that all attendees are encouraged to actively participate and should not feel intimidated or do not have to worry about being quoted for what they say in a forum. “This has been a long-standing guideline that I believe adds great value

to the quality of the Forum Series,” he said.

### A New Type of Meeting

The Forum Series grew out of the society's 1976 Long-Range Plan, which said SPE should “consider and test other meeting formats, including limited- or controlled-attendance meetings that have a primary purpose, the stimulation of thoughts and the acceleration of results in selected

operations and research areas, and where no formal record of discussions would be made.” The Board appointed an Ad-Hoc Committee on Controlled-Attendance Meetings in 1977 with Michael Prats as Chairperson. That group recommended the establishment of the SPE Forum Series at the October 1977 SPE Board of Directors meeting. The committee's original recommendation to the Board contains the elements that still define SPE Forums:

- Each forum seeks to stimulate thoughts and accelerate results in a selected operations/research area.

- The Forum Series covers the total range of subjects embodied in the Society's scope of technical coverage.

- Forums promote a maximum of discussion and minimum of prepared presentation; a maximum of information on new advances and a minimum of review.

- Reporting of new, unpublished, and incomplete results encouraged.

- Participants are selected on the basis of information provided on an application form that indicates the applicant can contribute to the forum through discussion, ideas, and experience.

- To protect individual rights and promote the desired levels of discussions and innovation, and the presentation of incomplete and partial results, SPE Forums are conducted strictly off-the-record. Written papers are not required, and extensive note-taking is discouraged. Publication of information disclosed at an SPE Forum is prohibited without written approval of the originator.

- Forums are held in quiet surroundings conducive to meeting its objectives.

Although the Forum Series was approved in 1977, the first forums were not held until 1979 at Colorado Mountain College near Glenwood Spring, Colorado. The first two were “Properties of Saturated Rocks of Interest to Petrophysicists and Geophysicists,” chaired by Turk Timur, which drew attendance of 95, and “The Physical Control of Solids in Drilling Fluids,” chaired by George Ormsby and Tom Kennedy, with attendance of 44.

“The forums started as a venue for highly specialized group of experts in

one technology who were looking at the next research topics, said Abou-Sayed. "More and more the forum has turned into a venue for multidisciplinary professionals who are meeting to discuss collaborative efforts to bring new technology implementation to the field quicker. The regional forum has become a meeting to educate and alert the local staff from the regions on already advanced technical products and processes that are fit for the region but not yet widely used or recognized in that region."

### Tangible Advantages

Forums are intended to be idea generators that will help the participants go back to their companies with a new energy focused on moving toward future needs. O'Brien feels that one of the advantages of the Forum Series is developing working relationships with other attendees that last beyond the end of the forum.

Abou-Sayed believes that the most beneficial aspect of the forums is the ability to openly report and discuss the results of new and/or recent work in progress and test out-of-the-box ideas. "A forum provides venues to speak unimpeded and discuss lessons learned, mistakes, and how to mitigate future risks with newly minted technologies," he said.

"The lessons I learned and the directions I got from my colleagues and participants in these forums that I attended have substantially improved my thought process and my awareness of the need for bold proposals and work integration," said Abou-Sayed, who spent the first 25 years of his career in R&D.

During economic downturns, operators and service providers might be able to leverage their efforts and minimize the financial cost of R&D by focusing on the direction of technology development identified in the forums, says Abou-Sayed.

O'Brien agrees. "Our industry is feeling the effect of this downturn and though this year will be difficult, I am optimistic about 2010 and beyond. I am hopeful that both E&P and service companies will take a long-term view toward technological development that coincides with forum participation," said O'Brien. **JPT**

Improved cementing technologies were next reviewed by Salim Taoutaou of Schlumberger, who explained that the main purpose of cementing is to mitigate external corrosion of casing. To ensure that well integrity is maintained, a cementing job should be properly designed, the mechanism of potential downhole failure should be understood, and an awareness of cement cracking possibilities should be developed. Understanding these parameters will help the designer get the job done right the first time and reduce the consequences of loss of well integrity. He said that the design of a cementing job takes 90% of the engineering time, and that most failures are in the construction and implementation of procedures.

### Downhole Corrosion Monitoring

The final session addressed recent technology advances for downhole corrosion monitoring and highlighted the limitations and concerns in deploying these techniques.

Keynote speaker Liane Smith of Intetech explained the main cause of tubing corrosion and described the pros and cons of different monitoring techniques such as downhole corrosion coupons, multifinger imaging tools, and basic-saturated-water analysis. She said that the main task of corrosion monitoring is to identify high-risk wells and recommended that continuous monitoring is required. She also recommended calibrating digital data to physical pipe measurements and improving data presentation and interpretation.

Smith mentioned calipers as an important option for evaluating downhole corrosion rates. She also highlighted the role of corrosion modeling to identify high-priority wells for logging. However, calipers and models are indicative of condition only. Calipers may not accurately measure the shape of some pits, and measuring the wall thickness baseline can be misleading, as the wall thickness throughout the tube may not be homogeneous.

Colin Hardisty of Schlumberger next discussed the value of logging and highlighted the problem areas in monitoring tools. For instance, if caliper techniques are unable to detect an external defect then one assumes that

the outer wall is within manufacturing tolerance and no unquantified distortion has occurred during manufacturing and installation. He emphasized ultrasonic testing (UT) techniques as being superior to calipers, but also stated that more must be done to develop this technique.

A presentation by Mohammad Salman Raheem of AFIC on CP for well casings expanded on Wroe's earlier presentation and emphasized redesign considerations for well casing based on casing geometry, subsurface geology, the availability of a power source, and the identification of the groundbed's location. Among the guidelines that Raheem identified as important for evaluating CP performance was real-time collection of data, which can confirm the program's effectiveness while the tool is in the well bore. He also showed statistics justifying CP's benefit, particularly that the number of leaks tend to be remarkably reduced after the implementation of CP.

Intertek's Winning returned to discuss the value of corrosion inspection and monitoring in gas wells and the current tools available. The value of inspection can be measured against the high impact of corrosion, which causes loss of production and unplanned replacement. The main objectives in using a downhole tool are to have a rapid response time and to distinguish between localized and general corrosion.

Winning classified current monitoring techniques into three categories: surface monitoring options including linear polarization resistance (LPR) and electrical resistance (ER); downhole inspection options including calipers, flux-leakage tools, and UT tools; and new technology including piezoelectric transducers, slickline-recoverable electrical-resistance probes, and wireline deployed electrochemical noise and polarization resistance. These techniques have drawbacks, such as the possibility of misleading results from LPR and ER, and corrosion coupons only providing cumulative results.

Finally, Winning said that areas for further examination include gaining a fuller understanding of where these techniques can be useful and investigating if future development might result in more advanced tools for subsea monitoring. **JPT**