



SOCIETY OF PETROLEUM ENGINEERS

SPE NEWS

COPENHAGEN SECTION

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VELKOMMEN, WELKOM, WELCOME AND BIENVENUE

Welcome back to a new SPE season. Perhaps you blinked and missed it but the SPE break we have had these last few months was to enable you all to enjoy the summer without having to attend any SPE events.

I wrote in April 2016 about the seismic shifts that were on the horizon and prophesied that the landscape would not look the same 12 months out. Here we are 16 months on and I don't think any of us can claim not to have seen a dramatic change either on a professional or personal level. Whether it is a new location, new colleagues, new responsibilities, a new employer or having less colleagues and more work the challenge is the same as it always was. Improve our technical competence and deliver valuable and quality work.

The world will continue to change in ways that we cannot foresee. At the time of going to press we see Norway go to the polls and the outcome will directly impact the oil and gas world and on the other side of the globe we have the US shale industry capping oil prices on the one hand and erratic foreign policy and sabre rattling driving prices up on the other.

So I think we can conclude that this next season will provide more of the same, change and instability. To quote a literary sage "This is a new year. A new beginning. And things will change" –Taylor Swift

To keep you all occupied and perhaps distracted we have another packed season in front of us so keep your eyes peeled for details on the webpage. Officially, Shell will kick us off in October, but in September DTU will host an additional event on 28th September (09:00-10:15) where Bal Kunjan (SPE DL) will outline the challenges with exploration chances of success predictions and suggest on how to manage them.

We also say farewell to Miroslav Slapal, Kitt Ravnkilde and Lars Gammelgaard and thank them for their tireless efforts and hard work over the years. And a big welcome to Jaime Casaus-Bribain, Sonat Kaya, Adebowale Solarin and Solvejg Kolbye Jensen who have already been hard at work ensuring this season is better than ever.

We would also like to welcome some new partners for the season INSpec Ethylene Oxide Specialities (INEOS) and eventually Total S.A., we look forward to a productive partnership and a continued commitment in technical knowledge sharing and development of employees.

As I reminisced about in my 2015 summer party speech, Albert Einstein had a profound and deep connection with Copenhagen. So it is only fitting to draw on his philosophical wisdom and conclude that a true measure of intelligence is the ability to change.

Bienvenue, and we look forward to seeing you all at the upcoming events.

Anders Krag
SPE Chairman
Copenhagen Section



SPE

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GETTING FIT FO

Since the oil price downturn Shell Upstream has increased global production by 20 percent with 8 percent lower cost year on year. A new way of thinking and working is changing the way Shell Upstream works in Denmark and across the world.

Are we spending too much time on what next to build and too little on how we operate our existing assets more effectively? The question, raised by Shell Upstream Director Andy Brown in the first months of the industry downturn, would fundamentally change the very fabric of the Shell Upstream organization and has already delivered significant results.

CLOSING THE GAP

In response, Shell developed the 'Fit For the Future' (FFF) program. A new way of thinking and working which prompts every Shell organization to define the gap to potential, understand that gap, and work relentlessly to close it: How good could our business really be? What is the best in the basin and how are we going to be even better?

In the UK, which was one of the first Shell teams to adopt the methodology, the results have been significant. Over the past two years, the UK team has halved the number of leaks, increased availability by 25 percent, and reduced unit operating costs by 70 per cent. A complete transformation in terms of the margins generated for the business.

NEXT STOP: DENMARK

In Denmark the Shell team began implementing the FFF methodology earlier this year, and the VP Upstream for Shell in Denmark, who knows the program from his time in Norway, is a strong proponent:

“Using Fit for the Future instils a culture of discipline, peer challenge, action orientation, accountability and waste elimination. It makes crystal clear that improving the business is the business, and I have no doubt it will make us a better and more focused JV partner in the process,” says Lee Hodder, VP Upstream Denmark.

WORKING THE FUNNEL

So how does it work in practice? Actually, the concept is not too far from the hydrocarbon maturation funnel familiar to most upstream professionals. Only here, it is business improvement opportunities which are matured through the funnel from initial idea to confirmed bottom line value delivered.

Once the team has benchmarked and agreed on the gap to potential, they identify, analyze and quantify the end value of the most valuable opportunities. These are then broken into clear actions, to which the team and its individual members commit. Then comes the hard part: Delivery.

R THE FUTURE

STAND FIRM AGAINST THE WHIRLWIND

“It sounds easy, but standing firm against the whirlwind of everyday distractions, keeping a clear focus on the actions that actually deliver bottom line value - that can be a real challenge. FFF takes that challenge seriously and provides a framework for consistent delivery across the entire team. And it works. Just look at the numbers,” says Allan Søndergaard, Senior Commercial Advisor and Shell Denmark’s designated Transformation Lead for the FFF program.

The FFF program involves weekly ‘cadence’ meetings, where the team rigorously reviews all initiatives and corresponding actions in the funnel, zooming in on any area where progress is less than expected.

” In the beginning, it can be uncomfortable to be so directly confronted on a weekly basis with progress against targets. But you soon realize it is not a shaming exercise. Rather, it keeps your eyes on the prize enables an open and constructive conversation about the blockers to delivery. With the entire team at the ready to support you, says Allan Søndergaard.

PARTNERING FOR PERFORMANCE

While the FFF program was initially developed for Shell operated assets, it is now being adopted by Shell non-operated asset teams. And the Shell Denmark team believes the methodology could potentially provide a platform for even stronger collaboration between the JV partners.

“Imagine how powerful it would be if we spent more time together to define the gap to potential, and work a shared funnel of initiatives to close that gap. That would truly be partnering for performance,” says VP Upstream Lee Hodder from Shell Denmark. ◀



●● ABSTRACT

DEVELOPING A PROACTIVE LATE LIFE ASSET MINDSET & DECISION-BASED ROADMAP

Across the oil & gas industry, there is an increasing number of mature assets which are typically off plateau production, close to original design life, but still have the potential to deliver value. This in turn requires a change in mind-set from the organization towards continuous improvement for both production- and cost optimization to manage the following challenges:

- Life time extension of facility vs original design life
- Value generating activities vs. integrity activities
- Removal of optionality
- Affordability
- Organisational adaption

In Norway, Shell has worked hard in the past few years to proactively develop high quality Asset Reference Plans and longer-term decision-based roadmaps for its mature assets in support of clear Late Life Strategy. This work is underpinned by a detailed “value proposition” study and external benchmarking to provide the team with a more robust view of value potential. The decision-based roadmap has helped both Shell and license partners gain a more integrated understanding of the key decision points, risks & opportunities facing the asset. The work has involved pulling together information across operations, maintenance, projects, 3rd party tie-back opportunities and even offshore fuel requirements. The Late Life Strategy has also been a key enabler for a change in mindset in the day-to-day running of the business – retaining focus on core principles, including HSSE & asset integrity while at the same time providing a mechanism for staff to challenge established truths.

Shell’s Asset Manager in Norway, Odin Estensen, will share the experiences and key learnings from Draugen. ◀



BIOGRAPHY



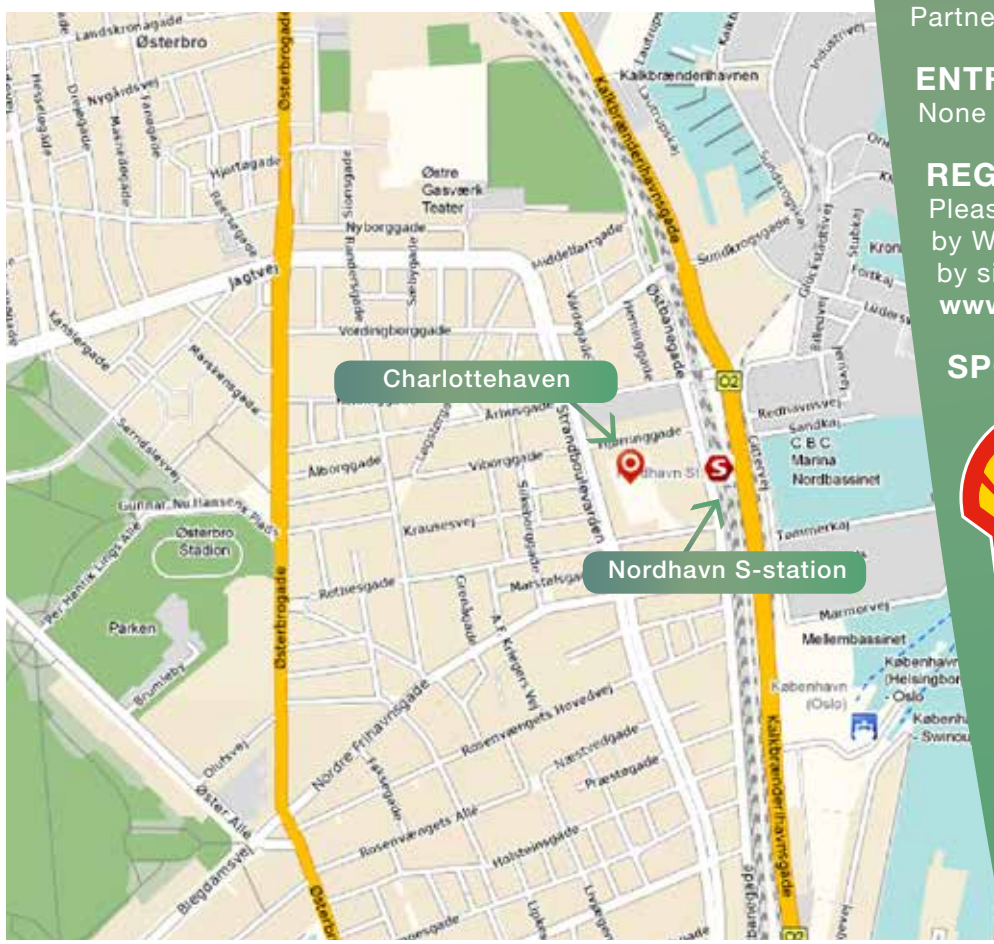
Odin Estensen,
Shell International

Odin Estensen joined Shell International in 1990 after graduating from NTH (The Norwegian School of Technology) with a MSc in Petroleum Technology. He was initially developed as a Shell and EP professional by being trained and working as a well engineer. A development path that gave him early frontline and back-office responsibility for challenging and high-cost operations.

Thereafter he has held several different positions within contract management, operations, hse and asset management, both non-operated and operated. These positions have further exposed him to all aspects of the EP business at a steadily increasing level of leadership complexity.

He has since 2013 been the Asset Manager for Shell's operated operation in Norway with the accountability for the Ormen Lange, Draugen, Knarr and Gaupe fields.

Odin also holds an executive MBA from NHH (The Norwegian School of Economics). ◀



PROGRAMME

17:30 - 18:30
DRINKS

18:30 - 19:30
PRESENTATION AND SPE NEWS

19:30 - 21:00
DINNER

LOCATION

Charlottehaven
Hjørringgade 12C
2100 Copenhagen

SPEAKER

Odin Estensen, Shell

TOPIC

Developing a Proactive Late Life Asset Mindset & Decision-Based Roadmap

DINNER SPEAKER

Lee Hodder
VP Denmark Shell

TOPIC

Partnering for performance

ENTRANCE FEE

None

REGISTRATION

Please indicate your attendance by Wednesday 4 October by signing up on the internet www.spe-cph.dk

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OCTOBER



 SPE MEETING SCHEDULE
2017-2018

October 9	MAIN SPEAKER	AFTER DINNER
TOPIC	Developing a Proactive Late Life Asset Mindset & Decision-Based Roadmap	Partnering for performance <i>Lee Hodder,</i> <i>VP Demark Shell</i>
SPEAKER	Odin Estensen, Shell	
LOCATION	Charlottehaven	
SPONSOR	Shell	
November 21	MAIN SPEAKER	AFTER DINNER
TOPIC	Fluid flow simulation in fractured reservoirs Influence of Porous Media on fluid PVT	Industry-academia research collaboration – how can we make this work for the benefit of all parties? <i>Nicolas von Solms,</i> <i>DHRTC-CERE</i>
SPEAKER	Hamid Nick, DHRTC, Wei Yan, CERE	
LOCATION	DTU	
SPONSOR	DTU	
December 5	MAIN SPEAKER	AFTER DINNER
TOPIC	Essential Pre-Requisites for Maximizing Success from Big Data	
SPEAKER	Muhammad Khakwani (SPE DL)	
LOCATION	GEUS	
SPONSOR	GEUS	
January 24	MAIN SPEAKER	AFTER DINNER
TOPIC		
SPEAKER		
LOCATION	Moltke's Palæ	
SPONSOR	HESS	
February	MAIN SPEAKER	AFTER DINNER
TOPIC		
SPEAKER	Peter Hepburn, Maersk	
LOCATION	Maersk (Amerika Plads)	
SPONSOR	Maersk	
March 22	MAIN SPEAKER	AFTER DINNER
TOPIC	Integrated Historical Data Workflow: Maximizing the Value of a Mature Asset	
SPEAKER	Anne Valentine (SPE DL)	
LOCATION	Welltec	
SPONSOR	Welltec	
April	MAIN SPEAKER	AFTER DINNER
TOPIC		
SPEAKER		
LOCATION	DONG	
SPONSOR	DONG	
May	MAIN SPEAKER	AFTER DINNER
TOPIC		AGM
SPEAKER		
LOCATION	TBD	
SPONSOR	Chevron	
June	MAIN SPEAKER	AFTER DINNER
TOPIC	SPE Summer party	
SPEAKER		
LOCATION		
SPONSOR	Schlumberger	


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RADICAL IDEAS

Have you ever wondered why some things are not solved differently within the oil and gas industry? A great number of people did that just before summer and now 13 of these ideas are being explored over the next three months.

To find the potential of an idea, exploring its possibilities is necessary. Therefore, Danish Hydrocarbon Research and Technology Centre (DHRTC) offered everybody with a radical idea, which could lead to more oil, and gas recovered, constructions that are more viable or further improved production technology to submit their ideas in order to discover the idea's potential.

53 suggestions to what a radical idea could look like in the oil and gas industry were proposed. 13 of these ideas have just begun their maturation process at the start of September. For the next three months, the researchers will investigate their ideas in an effort to figure out whether they still have potential or not.

"We are pleased to have received a great number of good and creative suggestions as to how to initiate a radical development within oil and gas production. The visions in the projects are all very exciting and we hope that the results in

time will lead to improved ways of recovering oil and gas. We follow the projects closely from the centre in an effort to support the researchers with the industry perspective to provide the projects with optimal settings," says Lars Simonsen, R&D Director, DHRTC.

The ideas are versatile and range from new approaches to enhanced oil recovery, well simulation, monitoring of the subsurface, data collection from equipment and processes as well as inspection and flow regimes.

"A lot of research areas come into play in this sprint and a lot of these ideas are pretty wild. This makes the innovation and maturation process very challenging. We don't expect all of the visions of new technologies to be equally successful, but that it is equally a success as we learn and improve from testing different options. Naturally, we encourage the projects that show potential to put forward more in-depth and time consuming research ideas within our research programmes," says Lene Hjelm Poulsen, Programme Manager, DHRTC.



IN RESEARCH

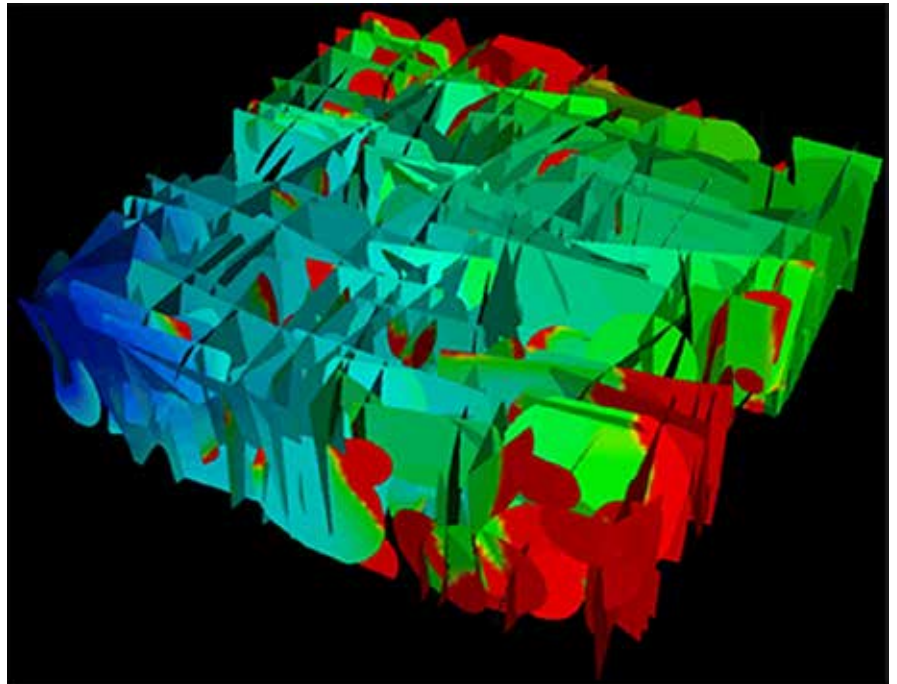


Photo: Joachim Rode

FLUID FLOW SIMULATION IN FRACTURED RESERVOIRS

Hamid Nick

While fluid flow in naturally fractured reservoirs is often controlled by subseismic-scale fracture networks coarse-scale models are commonly utilised for history matching and prediction employing different up-scaling schemes for the simulation of large-scale fluid flow. The main difficulty appears when fine-scale processes have a major impact on the large-scale patterns of flow. It is essential to understand the emergent behaviour of small-scale features that need to be considered on the field-scale. Here we develop numerical simulation methods for this purpose and demonstrate how different processes influence the flow properties at the large-scale. ◀



INFLUENCE OF POROUS MEDIA ON FLUID PVT

Wei Yan

The influence of porous media on fluid PVT or phase behavior has been an issue argued for decades. The topic is of interest to many disciplines and of particularly relevance to tight formation. The recent interest in the topic is largely caused by the shale gas boom. Various methods have been employed to investigate the porous media effects but the findings are often controversial. In a recent modeling and simulation project sponsored by ConocoPhillips, it is attempted to include both capillarity and adsorption in the phase equilibrium modeling in shale, with the purpose of accounting for both effects in compositional simulation. The new findings shed light on the role of capillarity and adsorption. In connection with the existing studies, it will also be discussed how future research can be carried out. ◀

INDUSTRY-ACADEMIA RESEARCH COLLABORATION – HOW CAN WE MAKE THIS WORK FOR THE BENEFIT OF ALL PARTIES?

Nicolas von Solms

The oil industry presents unique challenges in terms of R&D both due to the high degree of interdisciplinary expertise required, as well as the scale of operations. Mature and aging fields may also require that more radical ideas are necessary – incremental improvement may not be good enough anymore. Collaborative research between industry and academia has the potential to provide a fertile research environment, but barriers need to be overcome and the needs of all the partners need to be met.

In this talk I will discuss how we think we can make this kind of collaboration work, with reference to several case stories of collaboration both with industry and with the newly formed Danish Hydrocarbon Research and Technology Center (DHRTC). ◀



Hamid Nick
Senior research scientist, DHRTC

Hamid Nick is a senior research scientist in reservoir engineering at the Technical University of Denmark. He was a lecturer of geothermal and petroleum engineering at the Technical University of Delft. Before that, he was a postdoctoral researcher at Utrecht University. His Ph.D. is from the petroleum engineering research group of Imperial College London. ◀



Wei Yan
Associate Professor, CERE

Wei Yan is Associate Professor at CERE – Center for Energy Resources Engineering, Department of Chemistry, DTU. His research interests cover experimental measurement and modeling of phase equilibrium and thermophysical properties at high pressure and development of efficient phase equilibrium calculation algorithms for compositional simulations. His recent projects include CO2 EOR, HPHT fluids, and compositional reservoir simulation involving complex phase behavior. ◀



Nicolas von Solms
Associate Professor, DTU

Nicolas von Solms is Associate Professor at the Department of Chemical Engineering, DTU and Local Focal Point at DTU for the Danish Hydrocarbon Research Center (DHRTC), DTU. His task is organization of the collaboration between the University and the petroleum industry as represented at the DTU by the DHRTC. ◀



PROGRAMME

17:00 - 18:00
DRINKS AND POSTER SESSION

18:00 - 19:00
PRESENTATION AND
SPE NEWS

19:00 - 21:00
DINNER

LOCATION

DTU, Auditorium 101 B and
DTU Faculty Club (dinner)
Anker Engeltundsvej 1
2800 Kgs. Lyngby

SPEAKERS

Hamid Nick, DHRTC and
Wei Yan, CERE

TOPIC

Fluid flow simulation in fractured
reservoirs Influence of Porous Media on
fluid PVT

DINNER SPEAKER

Nicolas von Solms, DHRTC - CERE

TOPIC

Industry-academia research
collaboration – how can
we make this work for the
benefit of all parties?

ENTRANCE FEE

None

REGISTRATION

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