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RETURNING FROM SUMMER:

THE NEW 2019-2020 SPE COPENHAGEN SEASON

Dear SPE Copenhagen existing and new members, welcome to the 2019-2020 SPE Copenhagen Season! Feels like summer is long gone and therefore it is time to kick off the new season.

First of all, I would like to thank outgoing Board members for their dedication to the SPE Copenhagen section: Sonat Kaya (Schlumberger), Jose Antonio Perez-Acero (DTI), Duncan Healey (Chevron) and Jacob Odgaard (Maersk Drilling). We warmly welcome a new SPE board member: Natalia Krygier (Maersk Drilling).

Among all the important topics that surround our industry, 3 are right now taking a major stage and will certainly continue during the upcoming years: climate change and the role of oil and gas in the energy transition; innovation and technological disruption and how they will shape our industry; and finally the always present geopolitics with the OPEC and US shale immersed in a battle to influence the oil market.

One topic I would like to expand a bit more is innovation and technological disruption. Some companies are taking the forefront and have started to use big data and artificial intelligence to dramatically change how to operate the oil business, including safety inspections, drilling optimization, preventive maintenance, et... it is an exciting topic to monitor and be part of.

Finally, let me remind you that SPE Copenhagen section membership numbers are

falling as well as number of sponsors. As I mentioned in different SPE events last season, SPE membership provides great benefits such as access to tools and other resources such as technical publications, webinars, online articles and courses, all free and available at spe.org.

On the positive side, we are working on a very attractive line-up of SPE events, including 3 SPE Distinguished Lecturers and Company presentations. The season will start in October at DTU with the topic 'Improving Danish oil and gas production' by Morten Jeppesen, followed by 'Digitalization and optimization in the upstream oil and gas industry' by John Bagterp Jørgensen and for the after-dinner presentation 'A sustainable view of the future energy balance of Denmark' by Ali Eftekhari.

The second event will be hosted by Noreco in November with the first DL of the season, John Pringle (SPE DL) covering the topic 'Marginal Fields; How to Maximize Profit and Minimize Risk' and with an after-dinner topic 'Making a difference' by Atle Sonesen.

This season we will continue to use the LinkedIn account (<https://www.linkedin.com/company/spe-copenhagen-section/>) which will be used as a platform to provide information related to events and other relevant topics for our section. Stay tuned!

Looking forward to seeing all of you at the October SPE Copenhagen event at DTU.

Thanks

Jaime Casassus-Bribian
SPE Copenhagen
Section Chairman



Please follow us on LinkedIn to be up to date on SPE Cph events and other great stories:

<https://www.linkedin.com/company/spe-copenhagen-section>

FUTURE MEETINGS

FOR MORE INFORMATION REGARDING THE PROGRAMME SEE PAGE 6

SPE

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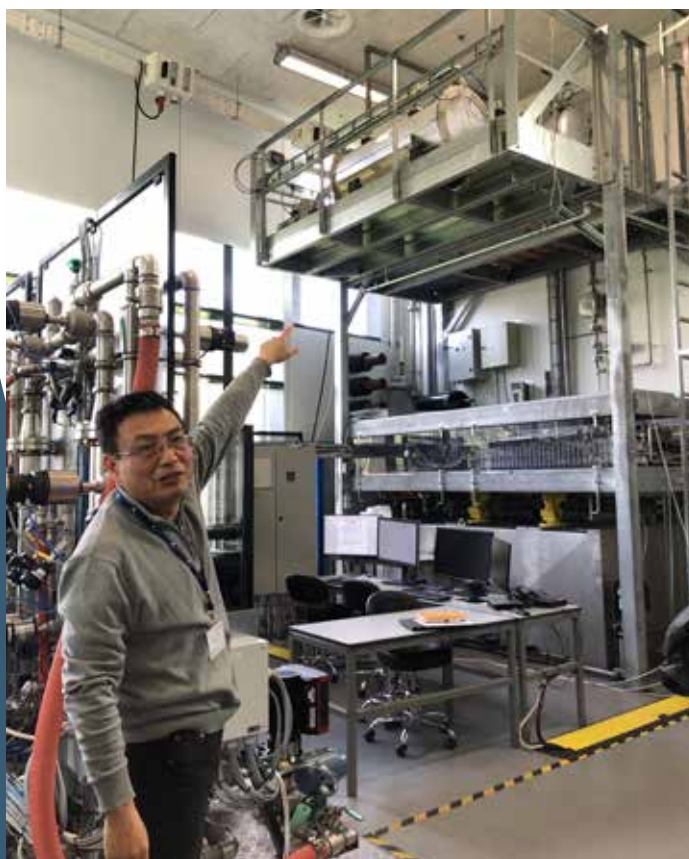
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OIL AND GAS PROSPERS

The research within oil and gas does not stand still and recently a number of projects looking at improving the production while reducing the environmental footprint were presented at Aalborg University, Esbjerg, at a DHRTC meeting. More inspirational meetings will be held going forward to inspire for more innovation.

By Marco Maschietti, Associate Professor at Aalborg University and Local Focal Point at DHRTC.

The AAU-DHRTC Meeting 2019, held at AAU-Esbjerg on 18 September, was a 1-day meeting associated to the AAU-DHRTC Conference Support Program 2019 (CSP-2019). During 2019 approximately 10 AAU researchers received funding support from DHRTC to go and present their works related to oil and gas at international conferences. The aim of the AAU-DHRTC Meeting 2019 was to gather AAU researchers who participated in the CSP-2019, DHRTC representatives, as well as other interested researchers from DHRTC partner institutions, to listen about the oil and gas research currently going on at AAU.



The event ended up with a tour of the laboratories at Esbjerg campus. Here, Zhenyu Yang gives the participants an introduction to the pilot plant.

RESEARCH

The focus of CSP-2019 and the AAU-DHRTC Meeting 2019 was on topics currently not included in the main DHRTC research programmes. The aim was therefore to activate AAU researchers not already engaged in DHRTC research programs to focus on Oil and Gas, activate AAU researchers already engaged in DHRTC research programs in developing additional focus areas within Oil and Gas, increase the involvement of Master Thesis students on Oil and Gas topics and inspire new collaborations.

The meeting gathered approximately 40 participants, from Aalborg University (15 from campus Esbjerg and 9 from campus Aalborg), DHRTC (12) and Aarhus University (4), from different disciplines: energy technology, robotics, chemical engineering, chemistry, and civil engineering.

Overall, I am satisfied of the outcome of the CSP-2019 and the AAU-DHRTC Meeting on the basis of the number of participants to both the conference program and the meeting. Many of the participants have also been involved in the RIS Program or want to join the RIS program in the future. To me, this means that this initiative, which I plan to arrange again in 2020, complements well the DHRTC RIS initiatives. ◀



From the top of Aalborg University, a view to Esbjerg Harbour and where the research results can be applied.



One session of the meeting was dedicated a presentation of the new Radical Innovation initiative which is about to be launched by the RIS team at DHRTC.

Photos by Karin Petersen, DHRTC.

ABSTRACT

Improving Danish oil and gas production

How is the Danish Hydrocarbon Research and Technology Centre at DTU continuing to play a meaningful role at a time when media and public debate often argues that oil and gas is part of the problem, and not a welcome part of the transition to sustainable energy production in Denmark? To address this question, the talk by Morten Jeppesen, Director of DHRTC, will give a status of the centre's activities, share examples of results achieved during the first five years of operations, and discuss the centre's strategy for the coming five years. ◀



Photo Joachim Rode.

BIOGRAPHY



Morten Jeppesen, DHRTC

Morten Jeppesen has been working for DHRTC since 2017, the past year as director for the centre. Prior to joining DTU, Morten worked for more than 25 years for Maersk Oil in Denmark, Norway, Angola and Qatar. He holds a M.Sc. in geology from KU and a MBA degree from DTU. ◀

ABSTRACT

Digitalization and optimization in the upstream oil and gas industry

Digitalization provides new opportunities for automation in the oil and gas industry that are available by technologies such as big data and analytics, sensors, and control systems. Combining digitalization with reservoir modeling using real-time feedback to optimize production, oil companies can improve the productivity of their assets and help prevent health, safety, and environmental incidents. High economic impact opportunities are available in combining reservoir modeling, production optimization, and process control automation to support real-time decisions and actions. We outline these digitalization technologies for the upstream oil and gas industry and relate them to the research at DTU Compute. ◀

BIOGRAPHY



John Bagterp Jørgensen, Technical University of Denmark

John Bagterp Jørgensen is the Technical University of Denmark's professor in model-based control. He has been involved in several projects developing model predictive control and digitalization technologies into commercial industrial applications. He is a faculty member of Center for Energy Resources Engineering and has since 2007 led research and development activities related to automation, machine learning, simulation, economic model predictive control, and artificial intelligence for upstream oil and gas processes. These technologies are now at a stage where they are ready for commercialization as part of digitalization of the upstream oil and gas industry. ◀



ABSTRACT

Does it make sense for a Danish environmentalist to date a petroleum engineer?

A SUSTAINABLE VIEW OF THE FUTURE ENERGY BALANCE OF DENMARK

Denmark is a pioneer and a front-runner in the large-scale extraction of the sustainable energy of the wind, especially in the electricity sector, which supplies most of the Danish electricity consumption. A combination of these recent Danish successes, and the increased demand for the reduction of carbon dioxide emission in light of the recent IPCC report, has created the expectation of a fast transition from fossil fuel to sustainable energy resources in all energy sectors. Although this transition is inevitable due to the unsustainable nature of fossil fuels and the declining oil and gas production from the Danish sector of the North Sea, there is still an ongoing discussion, sometimes supported by qualitative evidence, on its possibility, extent, and urgency.

Based on a true story of an unsuccessful date between a petroleum engineer and an environmentalist, this talk tries to apply the ideas of the late David MacKay in his well-known priceless book "Sustainable Energy: without the hot air" to have a quantitative look at the future energy balance of Denmark and the scenarios for a self-sufficient Denmark with 100% renewable energy. ◀

BIOGRAPHY



Ali A. Eftekhari
Researcher,
Technical University of Denmark.

Dr. Ali A. Eftekhari holds BSc and MSc degrees in Chemical Engineering from Shiraz University and Sharif University of Technology, and a PhD in geo-environmental engineering from Delft University of Technology, where he studied energy analysis of low-carbon-emission conversion of fossil fuels. He has several years of experience in downstream and upstream oil and gas industry as a researcher, industrial trainer, and freelance process engineer. He has also more than 10 years of experience in the thermodynamic analysis of energy conversion and extraction processes. He is currently a Researcher, investigating reactive flow in the North Sea chalk reservoirs, at the Danish Hydrocarbon Research and Technology Centre, Technical University of Denmark. ◀



C O P E N H A G E N
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5

OCTOBER

PROGRAMME

17:00 - 18:00
DRINKS

18:00 - 19:00
PRESENTATION AND SPE NEWS

19:00 - 21:00
DINNER (building 101)

LOCATION

Bygningstorvet,
Building 116
2800 Lyngby

SPEAKER

Morten Jeppesen
John Bagterp Jørgensen

TOPIC

Improving Danish oil and gas production.
Digitalization and optimization in the upstream oil and gas industry.

AFTER DINNER SPEAKER

Ali Eftekhari:
A sustainable view of the future energy balance of Denmark

ENTRANCE FEE

None

REGISTRATION

Advanced registration is required due to access restrictions at the venue. Please sign up by Tuesday 15 October at www.spe-cph.dk.

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October 22	MAIN SPEAKER	AFTER DINNER
TOPIC	Improving Danish oil and gas production. Digitalization and optimization in the upstream oil and gas industry.	Ali Eftekhari, DTU: A sustainable view of the future energy balance of Denmark
SPEAKER	Morten Jeppesen, DHRTC John Bagterp Jørgensen, DTU	
LOCATION	DTU	
SPONSOR	DTU/DHRTC	
November 19	MAIN SPEAKER	AFTER DINNER
TOPIC	Marginal fields how to maximize profit and minimize risk	Atle Sonesen, Noreco: Making a difference
SPEAKER	John Pringle, SPE DL, Bluefin Petroleum	
LOCATION	Admiral Hotel	
SPONSOR	Noreco	
December 3	MAIN SPEAKER	AFTER DINNER
TOPIC	Engineered Well Design: From Spud to Abandonment	
SPEAKER	Hussain Rabia	
LOCATION	Maersk Drilling	
SPONSOR	Maersk Drilling	
January	MAIN SPEAKER	AFTER DINNER
TOPIC		
SPEAKER		
LOCATION		
SPONSOR	Total	
February 26	MAIN SPEAKER	AFTER DINNER
TOPIC	Jill Exploration Well	Innovative manner to apply existing technology in South Arne: Abrasi jet acid stimulation for long complex horizontal wells.
SPEAKER		
LOCATION		
SPONSOR	Hess	
March	MAIN SPEAKER	AFTER DINNER
TOPIC		
SPEAKER		
LOCATION		
SPONSOR	GEUS	
April 14	MAIN SPEAKER	AFTER DINNER
TOPIC	“Reservoir Engineering While Drilling” in Horizontal Wells	
SPEAKER	Shahid Azizul Haq	
LOCATION		
SPONSOR	Welltec	
May	MAIN SPEAKER	AFTER DINNER
TOPIC		Agm
SPEAKER		
LOCATION		
SPONSOR	TBD	
June	MAIN SPEAKER	AFTER DINNER
TOPIC	Summer Party	
SPEAKER		
LOCATION		
SPONSOR	TBD	

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ENGINEERING THE

– Cooperation and a competent technical consortium in the North Sea

End of summer 2019, the DUC partners Total and Nordsøfonden welcomed the Norwegian oil and gas company Noreco as a new partner in the consortium. It's been a few months since the transfer of Shells oil and gas activities in Denmark to Noreco has been completed, and now the partner is ready to reveal some of their ambitions and visions for an even stronger DUC in the future.

An agile and proactive partner

Noreco are proud to stress that they are an oil and gas company and want to stay focused on oil and gas production and development. The company has built a competent team with technical expertise. It's this expertise which they want to bring to the table at the DUC. Not as a silent partner, but rather as a proactive, agile and forward-thinking team player. When asked what role they want to play in the DUC, Noreco are quick to answer that they want to be the catalyst for more openness and cooperation in the consortium.



“We are entering into this with lots of energy, hope and visions for the future,” says Atle Sonesen, Chief Operating Officer at Noreco. “As a small company, we are more agile and bring competences that compliment those already in the consortium. Our wish is for an open and efficient cooperation, working together for a stronger DUC.”

“We want to contribute and make a difference in helping and supporting the Operator,” adds Sonesen. “Not only in doing what is expected, but also going that extra mile. Bringing our technical skills and expertise into play to maximize the value of the DUC”.

The Danish Underground Consortium (DUC) is a joint venture between Total (43.2 %), Noreco (36.8 %), and Nordsøfonden (20 %) to recover oil and gas from the Sole Concession area of the Danish part of the North Sea. There are 13 producing fields within the DUC, and these are operated by Total on behalf of the partners.

FUTURE OF THE DUC

Technical set-up are key for a stronger

DUC takes top priority at Noreco

As a fairly small company, Noreco could be mistaken for the younger brother who makes a lot of noise, but who is often overlooked. Ask Noreco why they should be considered an important partner in the DUC, and being a small company is actually the answer.

“As the smaller partner, the DUC takes top priority for us,” notes Sonesen. “It’s our primary focus and we will invest time and money with a focus on increasing recovery and incremental value. We don’t have a range of global activities competing with DUC activities, and that gives us the ability to help push Danish projects and interests.”

Great minds becoming greater together

There is no doubt that Noreco is bringing new energy to the DUC. The question is how will their new ways of working be perceived in the consortium?

When asked if their vision of a more capable and collaborative consortium could offend the other partners, implying that their working relations could improve, Noreco stresses that their goal is not to help the consortium go from bad to good., but from good to great.

“It is our ambition to help create an environment where all the great resources are utilized and maximized for the good of all partners,” remarks Sonesen. “If we dare to share and challenge each other, it is our belief that we can build a greater future together. Noreco will be bringing best practices, knowledge and know-how, along with ideas about how to optimize the very mature fields, and I am sure that this will be welcomed by the partners.”

Emphasizing the fact that technical experts will be prioritized at Noreco, Sonesen says, “We will be bringing a strong and highly competent technical team to the table. Engineering the future of the oil and gas industry is our top priority and we want to make a difference.” ◀



1st of August 2019, the transfer of Shells oil and gas activities in Denmark to Noreco was completed.

Through this transfer, Noreco has become the second-largest oil and gas producer in Denmark.

Making a difference

Noreco is entering the DUC with lots of energy, competence and ambitions



DHRTC Technology Conference 2019 5-6 November at Comwell Kolding

At the DHRTC Technology Conference 2019, you can learn about the latest research results, which are turning into solutions for the North Sea. We invite you to give us your view on how to transfer knowledge and technology from university to industry.

Find the full programme and sign up at www.oilgas.dtu.dk