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SOCIETY OF PETROLEUM ENGINEERS

SPE NEWS

COPENHAGEN SECTION

Welcome to the 2020-2021 Season:

THE ENERGY TRANSITION

Dear SPE members, hope you have been able to enjoy the summer given the circumstances of the ongoing COVID pandemic. As we turn our attention to the 2020-2021 season, we continue to face a set of old challenges such as continuous low oil price due to weak oil demand and uncertainty in the economic recovery, and that is even when OPEC+ have curtailed production by a significant amount. However, few opportunities also lie in front of us such as the energy transition and the acceleration of digitalization and other disruptive trends. I would consider virtual working as a disruption phenomenon that is affecting not only our industry but almost every industry in the world and has probably changed the way we work for ever. It is our duty as industry to take advantage of new technologies to make a positive change in the way we work not only onshore but also offshore. No one knows what the future will look like and only one thing is true: it will be different.

While oil & gas is here to stay as a key player in the future energy mix, there is a lot of talk about the energy transition. There is a range of approaches that E&P players are taking, for instance some take small steps while others have made a very clear statement to transform themselves into energy companies rather than purely E&P. Watch out that space because it is only the beginning.

On another note, I would like to announce the SPE scholarship winner for the 2019-2020 season: Patryk Bijak for his MSc thesis 'Carbon Capture and Storage - research on Denmark's offshore fields potential'. Congrats Patryk!!!! – You can find more details in the newsletter.

We would also like to recognize SPE membership longevity, and therefore have included a recognition page in this newsletter.

While writing this newsletter new measures related to the COVID19 pandemic are being adopted across Europe and locally. There is no light in sight about when the return to new life will take place, and therefore embrace for another special SPE season. The SPE Copenhagen Board has decided to start the SPE events for the 2020-2021 season purely based on virtual meetings. We encourage all SPE members to actively participate in such events as we are finalizing a very attractive list of events on relevant topics. We will start the season with an event hosted virtually by DTU on the 29th October, followed by our first DL speaker Roland N. Horne on the topic 'Big Data and Machine Learning in Reservoir Analysis' on the 11th November. The last event of the year will be early December, where Johan Svendsen, INEOS and Jeanne Mia Lonstrup, Maersk Drilling will cover a relevant topic such as carbon capture storage or CCS , sharing with us an overview of the 'Project Greensand' where depleted oil reservoirs can potentially be re-utilized for long-term safe CO_2 storage.

Finally, the broader SPE is launching a series of relevant webinars, and several conferences are also moving to a remote delivery mode, please check SPE.org for more details.

Looking forward to interacting with all of you either virtually or face to face at some point in time during the 2020-2021 season.

Sincerely Yours, Jaime Casasus-Bribian
SPE Copenhagen
Section Chairman

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

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2020-2021 SEASON

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DTU PETROLEUM ENGINEERING IS AMONG THE WORLD LEADERS

The DTU petroleum engineering research and teaching activities have proven to be among the world's best within the subject. According to the prestigious QS World University ranking, the DTU petroleum engineering has been recognized to be the third in the world together with Stanford University. Only National University of Singapore and UT Austin were rated higher. DTU was ranked higher than many other well-known Universities, like Texas AM, Imperial College, University of Adelaide and TU Delft.

The QS World University ranking evaluates the quality of the researchers and the teachers running the corresponding education. The most important criteria are related to their academic reputation, as well as to the reputation of the employer. These ratings are determined based on the answers to the questionnaires collected worldwide. Other, less important parameters in the rank are the H- and citation indices of the publications. While evaluation of the scientific contributions places the DTU petroleum studies within the first twenty, the academic reputation is very high and provides us the third place in the total ranking. Generally, the DTU is ranked 103 among the World Universities.

The DTU research activities within petroleum engineering take place in several Departments, including DTU Chemical and Biochemical Engineering, as well as Departments of Mechanical, Civil, Environmental engineering, DTU Chemistry, and DTU Compute. The Centre for Oil and Gas (DHRTC), in collaboration with other DTU divisions, develops research activities directed towards Danish petroleum resources. Center for Energy Resources Engineering (CERE) is, probably, the oldest Center involved in this kind of research. Since its creation, at that time as IVC-SEP, it has carried out world-leading studies of petroleum reservoir fluids. When CERE was formed, these studies were expanded into a wide range of experimental and modeling studies covering all the areas of modern petroleum engineering. The Master program in petroleum engineering was established in 2008 by Professor Erling Stenby, at that time the Head of CERE. The core teachers of the Program belong to CERE, to the Departments of Chemical and Biochemical Engineering (as the current Head of studies, Alexander Shapiro); Civil Engineering, DTU Chemistry, and DTU Compute. This is not a large program: the average annual intake over many years is around 20 students. Unlike the classical five-year petroleum programs, as in many leading universities, the DTU program does not have the corresponding bachelor education. It accepts the Bachelor students from the widely varying directions and aims at educating them in the fundamentals of petroleum engineering and allowing professionalizing in the petroleum industry with their previous educational background. This approach is in good agreement with both the educational strategy of DTU giving a lot of freedom to the Master students to choose their education and to the modern trends in the petroleum industry, which becomes increasingly diversified and utilizes knowledge and skills from other disciplines.

The MSc and PhD graduates educated at the DTU work worldwide, promoting the high academic reputation of the DTU petroleum research and education.

SPE CPH – high technical content, social interactions and personal contacts

Read some thoughts on SPE CPH by three long-term SPE members.

SPE CPH has always had a very good balance between technical presentations and social gatherings, where personal contacts often can be established across company boundaries.

An important feature of the SPE CPH is that we, early on, invited people from other parts of the oil business like geologists, geophysicists and petrophysicists to join the SPE. That created a breadth in the technical presentations that I know many appreciate.

When I came to Denmark in 1984, I knew SPE from my time in Scotland and England, but realized that there was no section in Copenhagen, I did not participate in founding SPE CPH, but pushed in the background. Later I was on the board, where I, among other things, took the initiative for Håndværker Foreningen to become our permanent meeting place, a place where we have held many good meetings. I was also behind the engraved glasses that we, for many years, used as a thank you gift for presentation speakers.

I hope that SPE CPH can emerge on the other side of the oil and Corona crisis, both of which have put the activities under pressure.

Vagn Holstein – Member since October 1979

SPE is a unique organization in the industry which manages to combine a high technical content with social interactions through local and international meetings.

Over the years I have been member I have got to know a lot of other colleagues, I would not have interacted with otherwise. Coming to a new country/town you always have a place to interact with other people. Especially I would emphasize local section meetings but also SPE Forums.

Ole Krogh Jensen, Noreco – Member since January 1980

SPE has been and continues to be an excellent international organization which has supported oil and gas professionals including myself through technical sharing and social events.

I have had the honor and pleasure of being part of SPE since 1982 when I worked my first oilfield summer job as a roustabout for Marathon Oil offshore Gulf of Mexico while studying at the University of Texas at Austin.

SPE was well known for students like myself with small budgets and a need for a job. The free food and drinks they provided at the monthly meetings where professionals from a wide variety of backgrounds gave insight into their various areas of expertise and contacts for future work could be made was ideal.

The SPE Copenhagen section that I have been part of for 30 years and on the local board for over half that period has had an exceptionally broad spectrum of attendees and known for its excellent network opportunities.
This has allowed the section to have talks covering a broad range of drilling, reservoir, production and facility engineering topics combined with geoscience, broader field development and society altering topics such as the energy transition.

For SPE overall, I have been able to attend and present at a number of conferences, workshops and forums together with co-authoring a number of technical papers on challenges experienced on the various projects I was involved in. This has allowed a separate peer review to this work and has generated new ideas and possibilities for better solving challenges based on the experience of other professionals.

Bill Ginty, Lead Petroleum Engineer, Valhall Reservoir Management – Member since 1982

SPE SCHOLARSHIP

This year, the SPE Copenhagen Section Scholarship was awarded to Patryk Bijak.

Patryk Bijak is the second-year student of the Master program in petroleum engineering at the Technical University of Denmark. He graduated from AGH University of Science and Technology in Kraków, Poland as Bachelor in oil and gas engineering. Patryk has been a member of SPE for over 5 years, serving as a Chapter Officer in SPE Student Chapter. He was the Chairman of the 10th East Meets West Congress and last year became Vice President of the SPE DTU Student Chapter. He has a large experience of taking student jobs and internships in several petroleum Companies.

In his free time, Patryk likes to discover Denmark by bike and run around Lyngby lakes. He enjoys listening to podcasts and would like to host one himself in the future.

Earlier this year Patryk presented research on "CO_2 emissions from Oil and Gas production and solutions to become CO_2 neutral" where the outcome was recognition to carbon capture and storage as one of the solutions with the highest potential. In his work, Patryk would like to examine the potential of the Danish offshore fields against CCS application in terms of storage capacity, economical value, geological capability, and infrastructure availability. Moreover, he would like to prepare a prototype of CCS infrastructure that could be implemented. This project is aligned with the policy to become CO_2 neutral by 2030 and can open new opportunities for the Oil & Gas industry in Denmark.

SPE Meeting schedule

2020-2021

October 29	MAIN SPEAKER	AFTER DINNER
TOPIC	**TBA**	
SPEAKER	TBA	
LOCATION	VIRTUAL MEETING	
SPONSOR	DTU	
November 11	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC	**Big Data and Machine Learning in Reservoir Analysis**	
SPEAKER	Roland N. Horne, DL Stanford U.	
LOCATION	VIRTUAL MEETING	
SPONSOR	SPE	
December	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC	**Project Greensand**	
SPEAKER	Jeanne Mia Lønstrup, Maersk Drilling and Johan Byskov Svendsen, INEOS Oil & Gas, Denmark	
LOCATION	VIRTUAL MEETING	
SPONSOR		
January	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC		
SPEAKER		
LOCATION		
SPONSOR		
February 11	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC	**Using Scenario Planning for Decision making in the Energy Industry**	
SPEAKER	Henk Krijnen, SPE DL	
LOCATION	VIRTUAL MEETING	
SPONSOR		
March	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC		
SPEAKER		
LOCATION		
SPONSOR		
April 14	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC	**From Piper to Macondo and 737 Max: The Danger of a Pure Compliance Culture**	
SPEAKER	Thomas Hinterseer, SPE DL	
LOCATION	VIRTUAL MEETING	
SPONSOR		
May	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC		**Agm**
SPEAKER		
LOCATION		
SPONSOR		
June	**MAIN SPEAKER**	**AFTER DINNER**
TOPIC	**Summer Party**	
SPEAKER		
LOCATION		
SPONSOR		

Big Data and Machine Learning in Reservoir Analysis

Abstract:

Well monitoring can provide a continuous record of flow rate and pressure, which gives us rich information about the reservoir and makes well data a valuable source for reservoir analysis. Recently, it has been shown that machine learning is a promising tool to interpret well transient data. Such methods can be used to denoise and deconvolve the pressure signal efficiently and recover the full reservoir behavior. The machine learning framework has also been extended to multiwell testing and flow rate reconstruction.

Multiwell data can be formulated into machine learning algorithms using a feature-coefficient-target model. The reservoir model can then be revealed by predicting the pressure corresponding to a simple rate history with the trained model.

Flow rate reconstruction aims at estimating any missing flow rate history by using available pressure history. This is a very useful capability in practical applications in which individual well rates are not recorded continuously. The success of rate reconstruction modeling also illustrates the adaptability of machine learning to different kinds of reservoir modeling, by adjusting features and targets.

Machine learning is also a particularly promising technique for analysis of data from permanent downhole gauges (PDG), given that the massive volumes of data are otherwise hard to interpret using conventional interpretation methodologies.

Roland N. Horne,
Professor of Earth Sciences at Stanford University, and Professor of Energy Resources Engineering.

Biography:

Roland N. Horne is the Thomas Davies Barrow Professor of Earth Sciences at Stanford University, and Professor of Energy Resources Engineering. He was Chairman of the Department of Petroleum Engineering at Stanford University from 1995 to 2006.

He is an Honorary Member of SPE, and a member of the US National Academy of Engineering.

Horne has been awarded the SPE Distinguished Achievement Award for Petroleum Engineering Faculty, the Lester C. Uren Award, and the John Franklin Carl Award. He is a Fellow of the School of Engineering, University of Tokyo (2016) and also an Honorary Professor of China University of Petroleum – East China (2016).

Virtual meeting NOVEMBER 11

Don't miss this SPE Distinguished Lecturer!

PROGRAMME
18:00 – 19:00
PRESENTATION AND SPE NEWS

TOPIC
Big Data and Machine Learning in Reservoir Analysis

SPEAKER
Roland N. Horne, Professor of Earth Sciences at Stanford University, and Professor of Energy Resources Engineering.

SPE DISTINGUISHED LECTURER

REGISTRATION
Registration will be through SPE-I; sign-up e-mails with details will be distributed to Copenhagen & Esbjerg section members in advance of the meeting.

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SPE

An Extra 45 Minutes Can Provide a World of Knowledge

Project Greensand

REGISTRATION: Registration will be through sign-up e-mails. Details will be distributed to Copenhagen section members in advance of the meeting.

Abstract:

Project Greensand aims to prove that Paleocene-Eocene sand reservoirs in depleted Danish North Sea oil fields can be utilized for long-term safe CO_2 storage. These fields are characterized by an extensive amount of data, including seismic cubes, cored wells and importantly production data from the last 15 years. The business model involves shipping of CO_2 from a port facility, and offshore discharge to the unmanned platforms in the Siri Area. By utilizing the existing infrastructure already used for production, will allow for a cost-effective CO_2 Emission Avoidance Cost. The results of the project will not only allow to progress the maturation of the studied field as carbon storage site, but it will also open for the potential maturation of several analogue depleted oil fields in the area.

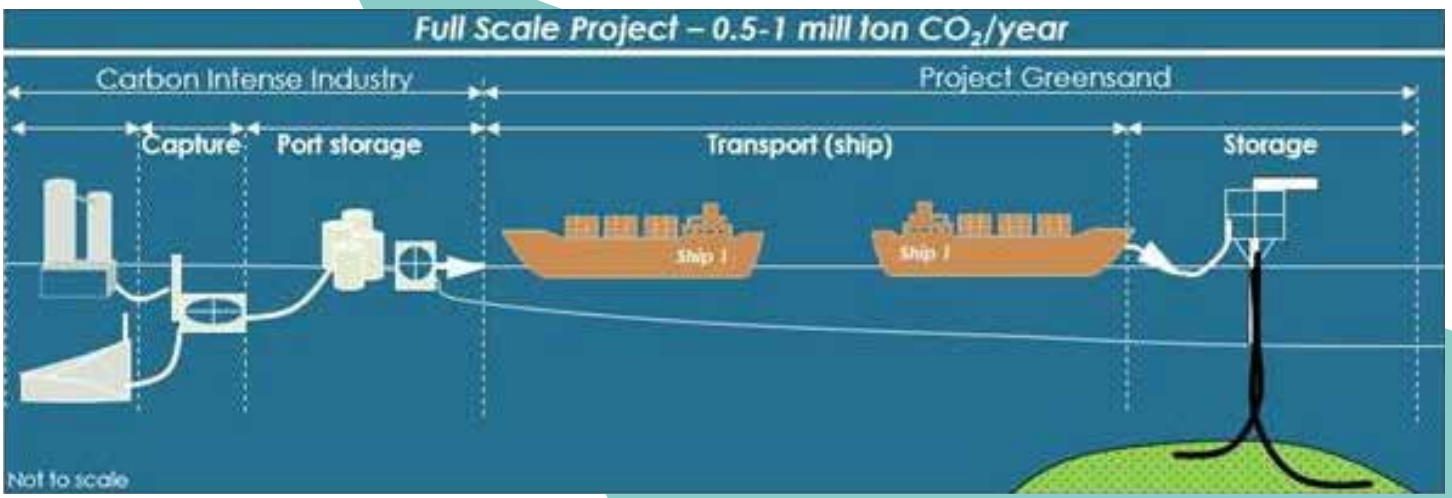
Biography:

Jeanne Mia Lonstrup is heading up all CCS initiatives in Maersk Drilling as Senior Innovation Lead. She has 8 years of experience in various roles within technology projects, business development, strategy and innovation in the company.

She has a Master from DTU Design and Innovation and is a passionate enthusiast about how the O&G industry can use the huge amount of experience and capabilities in the energy transition. Always open for networking and collaborative opportunities.

Biography:

Johan Byskov Svendsen is Business Development Manager for INEOS Oil & Gas Denmark, and is in charge of the climate initiatives for the company. The key areas of interest are storage of CO_2 and electrification. He holds a PhD in geology from University of Aarhus, Denmark. He has over the last two decades held a number of positions within exploration and production in the E&P business, as well as being asset manager for all of the INEOS Oil & Gas operated assets in the Danish North Sea.



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