

### **DHRTC**

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## SPE ONLINE MEETING

'Unlocking potential for  $CO_2$  storage in existing oil and gas fields in Danish North Sea'.

'Project Bifrost: An innovative CO<sub>2</sub> storage project'.

'Chalk for CO<sub>2</sub> storage'.





# **PROGRAM**

17:00 - 17:05 HANS HORIKX

17:05 - 17:20 CHARLOTTE LARSEN 'UNLOCKING POTENTIAL FOR  $CO_2$  STORAGE IN EXISTING OIL AND GAS FIELDS IN THE DANISH NORTH SEA'

17:20 - 17:35 MALENE HEIN

'PROJECT BIFROST: AN INNOVATIVE CO, STORAGE PROJECT'

17:35-17:50 HAMID NICK





Charlotte N. Larsen is working as Programme Manager for the CO<sub>2</sub> Storage Research Programme at DHRTC. Before joining DTU Charlotte worked 20 years with Maersk Oil and Gas as Lead Drilling Engineer and Well Project Manager amongst other roles. Through her career Charlotte has worked in Denmark, Qatar and Turkmenistan and has a Master in Civil Engineering from DTU.

### 'UNLOCKING POTENTIAL FOR $CO_2STORAGE$ IN EXISTING OIL AND GAS FIELDS IN THE DANISH NORTH SEA'

Denmark has an ambition of reducing carbon emissions by 70% by 2030, and CO<sub>2</sub> storage in existing oil and gas fields is an important piece of the puzzle to reach that goal. Oil and gas fields are of interest for storing CO<sub>2</sub> as they represent a significant and well described reservoir storage capacity with decades of accumulated knowledge of subsurface behaviour, a proven reservoir seal, and existing infrastructures that can be re-utilized. There are, however, several knowledge and technology gaps that need to be closed before CO<sub>2</sub> storage can be feasible and cost effective. This presentation will go through the main gaps and explain how research can help unlock the potential for CO<sub>2</sub> storage in the Danish oil and gas fields.





Malene Hein is Project Manager at DHRTC for Project Bifrost. Before joining DHRTC, Malene worked 18 years with Maersk Oil and Total Energies as a geoscientist and technical project manager in Denmark, Qatar, Turkmenistan and Kazakhstan. Malene has a Masters degree in Geology from Copenhagen University.

#### 'PROJECT BIFROST: AN INNOVATIVE CO2 STORAGE PROJECT'

Bifrost is an EUDP-financed project lead by DUC, Ørsted and DTU. The ambition is to unlock the potential for large scale transport and storage of  $CO_2$  in depleted oil and gas fields, offshore Denmark. Initially, the project focuses on the depleted sandstone and chalk reservoirs of the Harald field together with re-use of the associated infrastructure. DHRTC leads two exciting work packages within Project Bifrost: One aims to demonstrate the potential for  $CO_2$  storage in the chalk reservoir of Harald, which could enable a significant scale-up of the storage capacity in other depleted Danish hydrocarbon fields. The second work package will focus on advancing novel monitoring technologies which could play an important role in the public and regulatory acceptance of CCS in Denmark.





Hamid Nick is a senior researcher and research team lead at DHRTC, managing various projects on applied research solutions mainly for Danish North Sea hydrocarbon reservoirs. He has a PhD degree from Earth Science & Engineering of Imperial College London, UK.

#### 'CHALK FOR CO2 STORAGE'

This presentation gives an overview of existing studies on  $CO_2$  injection in chalk to address suitability of chalk formations as the long-term carbon storage solution. The thermo-hydro-mechanical-chemical behaviour of chalk in the presence of  $CO_2$  and formation fluids still requires further attention in order to de-risk a storage scenario. Here we discuss the processes that impact containment, injectivity and storage capacity, and highlight the main challenges and enablers for  $CO_2$  storage in chalk.

