

VICCO - CO2Basalt workshop

8-10 October 2025 , University of Oslo

Kelvin room (FV 316), Njord Centre, 3rd floor in the Physics Building

Sem Sælandsvei 24, Blindern, Oslo, Norway

Programme

Carbonate-filled basalt, Gullholmen, Oslo fjord. Picture: Henrik Svensen

Participants (33)

VICCO researchers: <https://www.mn.uio.no/geo/english/research/projects/vicco/>

CO2Basalt researchers: <https://www.mn.uio.no/njord/english/research/projects/co2-basalts/>

VICCO Scientific Advisory Board (SAB): Dr. Helen King (University of Bremen), Dr. Jana Olavsdottir (Faroese Geological Survey), Dr. Sasha Bussat (Equinor)

CO2Basalt SAB: Dr. Sigurður Gíslason (University of Iceland), Dr. Kim Senger (UNIS), Dr. Oliver Plümpner (University of Bremen)

Njord researchers

Wednesday October 8: Field trip

Field trip to see the carbonated basalt of the Oslo Fjord. Bring warm, water proof clothes, and field shoes. Weather forecast: cloudy/rain, 8-13 degrees.

People joining the field trip (18): Luca, Olli, Helen, Sigg, Henrik, Francois, Jana, Sara, Ingrid + ECR Freja, Tommaso, Anton, Venil, Rakul, Marija, Aurora, Sverre, Millett, Jack Longman

Organization: We will meet at Moss train station. Everyone buys their own train ticket. Back in Oslo at around 5pm.

Departure: Oslo S to Moss at 08:23 (arrival 09:02). There, we will reserve a maxi-taxi to go to Refsnes-Tronstad harbor. A boat will pick us at 9:30 at Tronvik brygge, and back at 3pm.

The locality is a small island called Gullholmen, located close to Jeløya, Moss. Here we will look at a sequence of basaltic lava flows, interbedded sandstones, and a rhyolitic ignimbrite. The basalts are of two main types, one with pyroxene phenocrysts, and one with plagioclase phenocrysts. The flows erupted as part of the Jeløya volcanic system at ca. 300 Ma, and the total basalt thickness is close to 1 km. The vesicle fill includes

calcite, zeolite, and rare native copper. In some areas, high temperature alteration of lavas and sandstone to epidote-bearing mineral assemblages is also common. On the western parts of the island, the lava flows are faulted, showing thick calcite veins and a high degree of carbonation.

Thursday October 9: CO2Basalt-VICCO workshop, day 1

8:45 Welcome

9:00-9:10 Bjørn Jamtveit, Pro-Rector, UiO (to be confirmed)

9:10-9:30 Henrik Svensen, François Renard, UiO: The VICCO and CO2Basalt projects: where are we and where do we go ?

CO2Basalt results and follow-up projects

9:40-9:55 Marija Rosenqvist, PhD student, UiO: Multiscale characterisation of pore networks in basalt samples from the Skoll High

10:00-10:15 Marthe Guren, PostDoc, UiO: Molecular modelling of silica glass and basaltic melt.

10:20-10:40 Coffee break

10:40-10:55 Yao Xu, PhD student, UiO: A hue-based method for determining spatiotemporal carbon concentration in density-driven convection of CO2 dissolved in water

11:00-11:15 Rakul Johannesen, PhD student, UiO: Assessing the role of fractures in volcanic reservoirs - a site study from the Faroe Islands

11:20-11:35 Joanna Dziadkowiec, Researcher, UiO: The REACT project: in-situ measurements of mineral growth under confinement.

11:40-11:55 ChemFrac, Henrik Sveinsson, PostDoc, UiO (confirmed)

12:00-13:00 Lunch break

VICCO speed introductions

13:00-13:10 Tommaso Sanguettoli, PhD student, UiO (confirmed)

13:15-13:25 Anton Sednev-Lugovets, Postdoc, UiO (confirmed)

13:30-13:40 John Millett, Prof. II, VBER and UiO (confirmed)

13:45-13:55 Freja Storey, PhD student, UiO (confirmed)

14:00-14:20 Coffee break

14:20-14:30 Aurora Kvamsdal, PhD student, UiO (confirmed)

14:35-14:45 Venil Volla, PhD student, UiO (confirmed)

14:50-15:05 Oliver Plümper, University of Bremen: Predicting rock properties using generative AI

15:10-15:25 Helen King, University of Bremen: Cannibalising carbon: competing reaction pathways during the ikaite to calcite transformation

15:30-16:00 Concluding remarks, Francois and Henrik

6:30pm: Dinner between the Scientific Advisory Boards of VICCO and CO2Basalt and the leadership of both projects

Friday October 10: CO2Basalt-VICCO workshop, day 2

9:00 Welcome

The future of carbon mineral storage in volcanic rocks

9:10-9:25 Francois Renard, CETP DecarbFaroe and RCN MinMix

9:25-9:40 Kim Senger, University of Svalbard (confirmed)

9:45-10:00 Ingunn Remme Fjeldaas and Keshvad Goodarzi, Equinor: DecarbFaroe Feasibility Study

10:15-10:30 Coffee Break

10:30-11:45 Jana Olavsdottir, Jarðfeingi, Faroe Islands, SAB VICCO: The Faroe Islands – A natural laboratory for CO₂ storage in volcanic-sedimentary systems

10:50-11:15 Sigurður (Siggi) Gislason, University of Iceland: Rapid CO₂ mineralization by recirculating injection water in Red Sea basalt

11:30 End of the meeting