

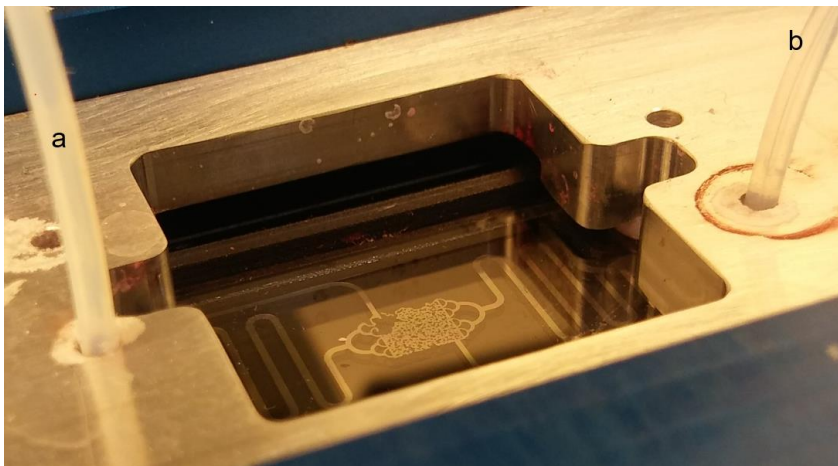
## Oil mobilization with reduced interfacial tension, a study using computational fluid dynamics and micromodels

*Supervision; Tomislav Vukovic, Antje van der Net*

Cleaning processes and mobilization of trapped oil in confined systems can be improved by reducing interfacial tension. The full understanding of the mechanism behind the phase mobilization in different porous geometries is still unclear and with a better understanding, improvements to the flow processes in porous media can be made, e.g. for trapping CO<sub>2</sub> as well as for optimization of oil production.

[ENTER]

In this project the importance of IFT, wettability and flow geometry is to be studied in micromodels using biosurfactants combined with computational fluid dynamics modelling for the design of the models and explanation of the effect. As part of the study low interfacial tension solutions are to be found by phase behavior testing with surfactants.



Figure; Example of a 2D micromodel representing a porous media, connected with an inlet and outlet flow line (a,b)

I am always open for discussion on individual topics of interest, especially in regard to topics concerning performance and design of experiments and/or data analysis using modelling. Possible themes; nanoparticles, foams, CO<sub>2</sub> storage, foams, surfactants, low salinity, chemical wettability alteration, pore scale imaging using the microCT-scan or 2D microfluidics. Feel free to contact me, also for intership, or bachelor projects.

Antje van der Net, [antje.van.der.net@ntnu.no](mailto:antje.van.der.net@ntnu.no).