

## Newsletter from the SUCCESS centre – June 2012 – no. 2

### SUCCESS infrastructure: New state-of-the-art flow rig installed at UiO

In 2010, the SUCCESS Oslo Hub (UiO, IFE, NGI) was awarded funding for the establishment of a laboratory to study multi-phase flow and reactions related to CO<sub>2</sub> storage operations. The main aim is to obtain much needed information on relative permeabilities of CO<sub>2</sub> in various sedimentary rocks at *in situ* reservoir conditions. Another goal is to have the capability of logging permeability changes from CO<sub>2</sub> percolation experiments through reactive materials, as reactions may directly influence factors such as CO<sub>2</sub> dissolution, diffusion, and the geometry of the solid matrix.

After careful considering we ended up with buying the IFS 200 Core Flooding System manufactured by Core Laboratories. The system meets our requirements of highly accurate and precise measurements of multi-phase flow, and arrays of pressure transducers allow accurate measurements of differential pressures. The IFS 200 fills a gap in earlier laboratory activities, and we have now established a complete CO<sub>2</sub> research laboratory that enables us to generate research at high international level.



The system was installed in April this year, and is now under initial testing. Researcher Helge Hellevang will be the scientific leader of the laboratory, whereas PhD student Javad Moghadam (photo) will be the main responsible for the practical use of the IFS 200, the total cost of which is about 2.7 million NOK. UiO has paid 300,000 of this, while the rest is funded by the Norwegian Research Council.

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### Welcoming new SUCCESSers



**Ingrid Anell** (photo) is as of January 1<sup>st</sup> a SUCCESS financed postdoc at the University Centre at Svalbard (Unis). She will be working on developing the seismic dataset on a local scale for the Longyearbyen CO<sub>2</sub> lab, as well as on the regional understanding of the upper Triassic storage unit.

**Tore Ingvald Bjørnarå** has been approved as a PhD student by Durham University, UK, with support from NGI's research fund. He will contribute to the SUCCESS work in activity 6.2 – Developing numerical tools for modeling of near well pressure and deformation.

**Sara Sjøblom** is a new PhD at INJECT as of February 1<sup>st</sup>. She works at UiB, supervised by Bjørn Kvamme. The primary goal of her project is to be able to make theoretical calculations of how the various acid gases adsorb on mineral surfaces and metal surfaces in CO<sub>2</sub> injection wells and associated structures; in particular with respect to corrosion and erosion.

## Ramore closing up

Our collaborating project **SSC Ramore** held its End Seminar on May 10<sup>th</sup> in Oslo. The main objectives of this project have been to establish technology for risk assessment, monitoring and remediation of CO<sub>2</sub> stored in the subsurface. The research partners (Institute for Energy Technology, University of Oslo, the Norwegian Geotechnical Institute and University of Bergen) all gave summaries of their results, mainly to industry partners and to the Research Council of Norway. Ramore research has included sealing properties of cap rock, simulation of CO<sub>2</sub> injection into a reservoir and the reactivity of cap rocks. Among the findings was that shale from the Johansen formation in the North Sea is a suitable cap rock for a future CO<sub>2</sub> reservoir.

## A Ramore doctor

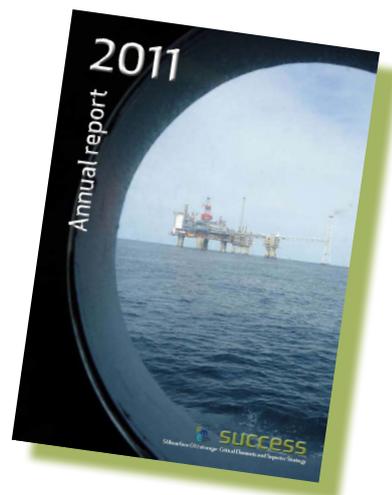
**Binyam Lema Alemu** in March became the second person from the Ramore project to acquire the doctoral degree. His thesis was called «Subsurface storage of CO<sub>2</sub>: Two-phase flow, rock physics and geochemical interactions. An experimental study». Binyam now works with Statoil in Stavanger.



Ramore is expecting three more dissertations before closing the project at the end of this year.

## SUCCESS Annual report 2011

Please download this report and read about our activities last year: <http://fme-success.no/>



## Brief news

- Matmora II – the follow-up of our collaborative project Matmora – had its kick-off meeting last week. SUCCESS hopes to continue the collaboration.
- This week representatives from our primary source of funding, the Norwegian Research Council, will pay SUCCESS the annual Site Visit. Plans and results will be discussed, and PhD student Anja Sundal will present her project.
- Midterm evaluation of the CEERs is coming up and will be an important activity next winter.

## Meeting with science

**Longyearbyen CO<sub>2</sub>lab** International Workshop will take place **September 17–20**. Main topics will be a summary of LYBCO<sub>2</sub>lab and Svalbard datasets and status on some international CO<sub>2</sub> storage projects. There will also be an excursion to the upper Triassic reservoir and Cretaceous cap rock section of Central Spitsbergen. Contact [Alvar.Braathen@unis.no](mailto:Alvar.Braathen@unis.no) for more info.

The **SUCCESS fall conference** will be in the Oslo area **October 22–23**. Note the dates. More information and program will follow on our web site: [www.fme-success.no](http://www.fme-success.no).

**SUCCESS (Subsurface CO<sub>2</sub> Storage – Critical Elements and Superior Strategy)** is one of several Norwegian centres for environment-friendly energy research, funded by the Norwegian Research Council and industry partners. For more info and contact address: [www.fme-success.no](http://www.fme-success.no).

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