

Press release:

**First meeting of the Monitoring committee of the ECRA Chair at Düsseldorf
on the 31st of January 2014**

In the framework of the ECRA Chair “ From CO₂ to Energy ” which was signed on April 2013 the scientific studies were launched through two PhD theses co-funded by ECRA and UMONS (FSR /Research Institute for Energy)

- The *first thesis* is carried out by **Nicolas Meunier** (Master’s degree in Chemistry/Material Science from UMONS and TU Wien). This began on 1st September 2014. Nicolas Meunier works on a subject entitled “ CO₂ capture in cement production and re-use: optimization of the overall process”. The focus of this PhD thesis is to analyze, taking into account energy and sustainability aspects, the overall CO₂ capture and re-use process including flue gas treatment, CO₂ capture and conversion steps (together with hydrogen production) for the CO₂ conversion into CH₄ and CH₃OH. The innovative aspect of this thesis is that it considers the global process chain and also the specificities of the cement industry (flue gas quantities and compositions, energy consumption, etc.).
- The *second thesis* began on 1st January 2014. Miss **Sinda Laribi** (Applied License in Industrial Chemistry (ESSTunis) and Master of Chemical Engineer (ENIGabes)) was recruited as a PhD student on the thematic. She will work on “ Purification processes applied to CO₂ captured from cement industry for conversion into methane or methanol”. Both for post-combustion and oxyfuel combustion CO₂ capture processes, the outgoing CO₂ flux must be purified in order to be re-used, especially in the methane or methanol process. The purpose of the PhD thesis is to review, master and simulate (performances estimations) the different flue gas treatments needed for the post-combustion CO₂ capture (pre-treatment and final CO₂ purification) and for the oxyfuel combustion capture (rich CO₂ flow purification).

One of the objectives of ECRA Chair is also to associate student works in the scientific activities of the Chair. In this context, besides these two PhD theses with large scientific content, *works of undergraduated students* are also achieved, related to more specific subjects as parts of the scientific thematics included in the Chair:

- Purification of flue gases issued from oxyfuel kilns with an objective of CO₂ reuse (project Ba3) ;

- Use of membrane from CO₂ capture installations: review on available technologies and key parameters identification (project Ma2) ;
- Alternative configurations of the CO₂ capture post-combustion process by absorption-regeneration into amines (project Ma2).

The scientific works of the Chair are coordinated with the support of a post-doctoral researcher, namely **Lionel Dubois**, Engineer in Chemistry from FPMs and who presented his PhD thesis at UMONS in March 2013 on the subject of CO₂ capture applied to the cement industry. The funding of this scientific coordinator is possible thanks to the financial support of HeidelbergCement which is also collaborating with UMONS on the subject of CO₂ capture.

Aiming at introducing the two PhD students newly hired, evaluating the progress of the different research projects of the Chair and discussing the research works, a technical meeting, together with a meeting of the Scientific Committee (which manages the Chair), took place at Düsseldorf (Germany), ECRA headquarters, on 31st January 2014.

Prof. Paul Lybaert, Dean of FPMs, has accompanied professors (**Prof. Diane Thomas** and **Prof. Guy De Weireld**) and researchers coming from UMONS.

The research works including bibliography, technological, simulation and experimental tasks were discussed and validated.

The next technical meeting will take place in Mons at the end of May 2014.

A *scientific event* is also planned at UMONS on 26th November 2014.