

LowE-CEM Workshop
on reduction of energy consumption and CO₂ emissions
associated with Portland cement production

March 26, 12:00 – 18:00 Department of Chemistry, Auditorium I, Aarhus University
Langelandsgade 140, 8000 Aarhus C, Denmark

Program:

12:00 – 13:00 Lunch (optional)

13:00 – 13:15 **Jørgen Skibsted** (AU): *Welcome and Introduction to the LowE-CEM workshop*

13:15 – 14:00 Prof. **Ian G. Richardson** (Univ. of Leeds, UK): *Model structures for C-(A)-S-H (I)*

14:00 – 14:30 Dr. **Ruben Snellings** (Vito, BE): *Dissolution kinetics, surface chemistry and reactivity of synthetic and real SCMs*

14:30 – 14:50 **René M. Thomsen** (Aalborg University): *Novel SCMs in low energy cement using model glasses*

14:50 – 15:20 Assoc. Prof. **Klaartje De Weerd** (NTNU Trondheim, NO): *The effect of binder type and curing time on chloride ingress from sea water or NaCl*

15:20 – 15:50 Coffee and Tea

15:50 – 16:10 **Zhenguo Shi** (AU): *Durability of Portland cement blends including calcined clay and limestone*

16:10 – 16:40 Prof. **Fred P. Glasser** (Univ. of Aberdeen, UK): *Sulfate-silicate cements - realising the potential*

16:40 – 17:10 Prof. **Donald MacPhee** (Univ. of Aberdeen, UK): *Activation of aluminosilicates - some chemical considerations*

17:10 – 17:30 **Erika Vigna** (AU): *Hydrate phase assemblages of the Na₂O – CaO – Al₂O₃ – SiO₂ – H₂O system*

17:30 – 18:00 Dr. **Wolfgang Kunther** (AU): *Thermodynamic modeling of Portland cement – calcined clays blends*

18:00 – 20:30 Dinner (Optional)

The LowE-CEM project (Low-Energy CEMents for sustainable concrete), was launched in April 2012, and focuses on the basic science of different chemical approaches to reduce the energy consumption and CO₂ emissions associated with Portland cement production.

The project includes four work packages, which focus on the following concepts:

- i. reduction of the cement kiln temperature by modification of the clinker composition,
- ii. development of new supplementary cementitious materials (SCMs),
- iii. durability of Portland cement blends including new SCMs,
- iv. development of new hybrid binders with a small fraction of Portland cement, a large fraction of aluminosilicate-rich SCM phase, activated by alkaline salts.

The research is headed by the Department of Chemistry and *i*NANO at Aarhus University, and it is financially supported by the Danish Council for Strategic Research. The project combines research of the Universities in Aarhus, Aalborg, and Trondheim (NTNU, NO), as well as Empa (Materials Science and Technology, CH) and includes Cementir Holding - Aalborg Portland A/S and FLSmidth A/S as industrial partners.

This international and interdisciplinary setup provides unique opportunities for research. For this workshop, we want to create a dialogue by setting the research of the PhD students of the LowE-CEM project in perspective to presentations of recognized experts in their fields.

Hereby, we invite interested researchers from both academic institutions and industrial companies to take part in the workshop, which is open for all.



Registration:

www.chem.au.dk/lowecem

Registration deadline: March 6, 2015

Fees: 100 DKK (inkl. Coffee break)

Optional: lunch (150 DKK) and dinner (400 DKK) in the canteen of the Department of Chemistry

Further information:

Contact: J. Skibsted (jskib@chem.au.dk, +45 2899 2029)

