

# CIVIL ENGINEERING SEMINAR

Wednesday 8<sup>th</sup> January 2014 4pm  
A401 – School of Engineering



## **Concrete chemistry: Chemical admixtures, sprayed concrete, concrete binders and current R&D**

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### **ABSTRACT**

A short overview of chemical admixtures for concrete – types and how they work in concrete – will be presented. Then the admixtures and accelerators for sprayed concrete, particularly the non-alkaline accelerators, will be covered in more detail. Today's non-alkaline accelerators on the market are all based on aluminium sulphate as the main constituent. Pros and cons related to such accelerators will be discussed, and results from recent attempts to develop sulphate-free accelerators will be presented. Type of binder used in concrete, including sprayed concrete, may vary and new types (typically Portland cement blended with ashes) are entering the market. This is a big challenge for the developers of admixtures and accelerators. In future even non-Portland cement binders, like Geopolymers, may have a role in sprayed concrete. The basics of Geopolymers will be presented. Some of the topics presented will also be illustrated by simple physical demos.

### **ABOUT THE SPEAKER**

Over the last 20 years Dr Myrdal has been working on various chemical aspects of concrete technology, covering cement chemistry, concrete admixtures and durability of concrete structures, both in industry, at research institutes and in academia. Since 2004 he has held an adjunct professorship in concrete technology at the Norwegian University of Science and Technology. Until 2007, he was the head of one of the R&D centres in the Mapei group (a global producer of construction chemicals). He played a key role in the development of alkali-free accelerators for sprayed concrete in the late 1990s. Since 2010 Dr Myrdal has been the head of all Normet R&D activities for construction chemicals worldwide, and he spends roughly one week a month at Normet's Global R&D Centre for construction chemicals in Coventry.

**This seminar is open to all and refreshments are provided. For more information, contact Dr Stefano Utili by email at [s.utili@warwick.ac.uk](mailto:s.utili@warwick.ac.uk)**



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