



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

DEPARTMENT OF
CIVIL AND ENVIRONMENTAL ENGINEERING
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Alternative binders to Portland cements: funny toys for researchers or weapons of mass construction?

Professor Martin CYR

Professor, University of Toulouse, France

ABSTRACT

Ordinary Portland cement (OPC) is used for more than a century all over the world. It is easy to manufacture almost everywhere, it remains quite cheap compared to some other construction materials, it presents a fair robustness in terms of properties for several applications in different conditions (low temperature, under water...), and it is relatively well known, although there are still several aspects of their behavior that remain to be understood. Nevertheless, there are some situations where OPC is not the perfect material for construction applications, for instance:

- Economy: sometimes OPC are more expensive than other possible solutions;
- Technology: OPC cannot be used successfully everywhere and for all applications;
- Environment: OPC is responsible of huge amounts of CO₂ production.

This is where alternative binders could be useful, on one or many of these situations. A wide range of alternative binders actually exists and this presentation aims at giving a few examples of their possible use at a semi-industrial or industrial scale. The main alternative binders treated here include alkali-activated materials (AAM), supersulfated cements (SSC) and other binders such as ettringitic cements. This presentation will try to give a few elements of answers to these questions: Do we have the sufficient knowledge to use them securely? Can they be used at large scale or just confined to niche applications? Is there any drawbacks that could limit their use?

Date: 25 April 2019 (Thursday)
Time: 6:30-7:30pm
Venue: Room Y301, Block Y, PolyU

SPEAKER'S BIOGRAPHY

Martin CYR is professor at Université de Toulouse (France) and a researcher in the Laboratory of Materials and Durability of Constructions (LMDC) in Toulouse. He is deputy director of LMDC and coordinator of the group "Innovative materials".

His research interests include the physical, chemical and mineralogical characterizations and synthesis of mineral fines and alternative binders intended to be used in construction materials (by-products and supplementary cementitious materials such as metakaolin, fly ash, silica fume and slag – other residues), the reuse of by-products in cement-based and alkali-activated materials, the development and the use of innovative materials (geopolymers, carbon nanotubes), the rheology, hardening and durability of cement-based materials. He is actually a member of several RILEM technical committees focused on the durability of alkali-activated materials (DTA, CCC, CAM). He manages several projects with around 20 researchers (engineers, PhD students, post-doc) working on the properties of alternative binders in concretes, in partnership with several industrial groups (including an industrial chair on alkali-activated materials).

*** All Interested Are Welcome ***

For further information, please contact Prof. C.S. Poon at chi-sun.poon@polyu.edu.hk.
Free Admission. Please reserve your seat with Ms. Tiffany Szeto by email: tiffany.szeto@polyu.edu.hk.
Certificates of attendance will be provided to participants who attend the whole seminar.