

Symposium: International Symposium on Cementitious Materials – ISCM2014

Scope of the Symposium

Cement and concrete underpin modern economies in such an important way. Global production of Portland cement alone exceeds 3 billion tonnes per year, outstripping the demand for all other construction materials combined. Consequently, the global cement industry is responsible for significant green house emissions (almost 7% of anthropogenic CO₂ emissions). Its consumption, which is intrinsically linked with infrastructure development and may be taken as a proxy for economic growth, carries an associated environmental burden. Materials science has the groundwork to help to reduce this burden. Indeed, the average number of scientific publications has increased fivefold in the past decade. This can be attribute to several aspects such as: (i) better understanding of mechanisms and engineering performances with the advances in characterization techniques; (ii) greater awareness of important environmental issues; (iii) as well as increasing in innovation. This symposium expects to create a fruitful momentum by bringing together a forum of internationally acknowledged experts in the field, leading to improved effectiveness.

Abstracts will be solicited in (but not limited to) the following areas¹:

- **Syntheses, Hydration Mechanisms and Microstructure:** Papers in this topic should address: Concrete, mortar, paste, Mix design, additives, pozzolans, advanced characterization techniques (XRD, Structural Refinement, Raman, NMR, TEM, SEM, ESEM), microwave, high energy milling.
- **Alkaline Activation and Hybrid Cementitious Systems:** Papers in this topic should address: Geopolymers, waste containing alkaline activated cements, new precursors, blended Portland Cements.
- **Durability, Sustainability and Life cycles:** Papers in this topic should address: carbon cycle, waste immobilization, aggregate to paste interactions, sulphate attack, Alkali Aggregate Reaction, chloride diffusion, recycled construction materials.
- **Performance, testing and modelling:** Papers in this topic should address: Mechanical, Thermal mechanical, Rehology, non destructive techniques (Ultrasound, Resonance Frequency, Thermo images), micromechanics, interfacial analyses, applied numerical methods.
- **Special Applications:** Papers in this topic should address: Oilwell cementing, fire resistance, bio-cements, coatings, adhesives, selective surfaces.

Tentative list of invited speakers:

Prof. Dr. Donald Macphee (University of Aberdeen)

Prof. Dr. Jørgen Skibsted (Aarhus University)

Prof Dr. Vanderley John (University of São Paulo)

Prof. Dr. Leon Black (University of Leeds)

Prof. Dr. John L Provis (The University of Sheffield)

¹ *Selected papers will be published in a Special Issue of the Journal Advances in Cement Research (to be confirmed).*



Sociedade Brasileira de
Pesquisa em Materiais

Symposium Organizers:

Dr. Sandro Marden Torres (*Materials Engineering Department - Federal University of Paraiba*)

Dr. Leon Black (*School of Civil Engineering - University of Leeds*)