

## Dr. Alexandra Bertron, 2014 RILEM Robert L'Hermite Medalist



The Jury for the 2014 Robert L'Hermite Medal was composed of Prof. Ravindra Gettu (Jury President and Chair of the RILEM Technical Activities Committee), Prof. Jason Weiss (Editor in Chief of the journal *Materials and Structures*), Prof. Barzin Mobasher and Prof. Kefei Li.

The Jury examined the list of authors who met the criteria for the award, being under 40 years of age in 2013 and having performed high level scientific research in the field of 'Building Materials and Structures', and published at least one original paper in an international scientific journal, preferably the RILEM journal *Materials and Structures* during the last two years, in general as main contributor.

Alexandra Bertron has been selected for this award: *"She stood out due to her consistent research output, active participation and leadership in RILEM, international exchanges and the high quality of her work."*

Alexandra Bertron has been a Senior Lecturer of Civil Engineering at Paul Sabatier University, Toulouse, France since 2006. She graduated from Ecole Normale Supérieure de Cachan, where she passed the *Agregation* in Civil Engineering (French competitive national test giving the highest academic-rank teaching qualification) in 2000. Afterwards, she received her Master of Science in Civil Engineering from the Engineering School INSA of Toulouse in 2001 and her PhD in Civil Engineering in 2004 with her research focusing on the "Durability of cementitious materials exposed to organic acids (2004)". Finally, she obtained the "Certification to supervise research" degree from Paul Sabatier U. in 2013.

Her research activities, performed at the Laboratory for Durability of Materials and Constructions (LMDC, U. Toulouse), mainly concern the interactions between cementitious matrices, organic matter and microorganisms both in aqueous and air media. Her research works focus on the investigation and the understanding of the phenomenology of these interactions in order to improve the durability and the quality of concrete construction. The subjects include: the durability of cementitious materials in aggressive environments containing microorganisms (industrial and agricultural facilities, sewage systems ...), the bio-geo-chemical interactions between bitumen, concrete, steel and bacteria in the context of nuclear waste repository and the inhibition of microbial proliferation on building materials through innovative coatings (photocatalytic or bio-based products...).

The core of her skills is the understanding of the durability, microstructure and physico-chemistry of cementitious materials. She carries out multidisciplinary research, involving skills like microbiology, analytical chemistry, process engineering and geochemistry. By doing so, she has developed several active and valuable national and international, academic and industrial collaborations.

Dr Alexandra Bertron was an active member of RILEM TC 211-PAE (Performance of Cement-Based Materials in Aggressive Aqueous Environments) chaired by Prof. Mark Alexander (U. Cape Town). Notably, she co-edited the State-of-the-Art Report of this TC. She now chairs the newly created TC-MCI Microorganisms-Cementitious Materials Interactions (Secretary: Dr Henk Jonkers, TU Delft).



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