Special Issue

Self-Healing Concretes

Message from the Guest Editor

The most efficient ways to treat cracks in concrete are the so-called active treatments. Active treatment techniques, which are also known as self-healing techniques, can be implemented through three main strategies: (i) autogenous healing; (ii) encapsulation of polymeric material; (iii) microbial production of minerals (i.e., calcium carbonate). In autogenous healing, which is considered as a natural repair process, concrete cracks are filled through the hydration of un-hydrated cement particles or the carbonation of dissolved calcium hydroxide in the presence of moisture or water. Additionally, as a mechanism of self-healing in concrete one must also consider the so-called alkali-carbonate reaction (ACR) in concretes with dolomite aggregate, which also results in calcium carbonate precipitation. In this Special Issue, modern trends in self-healing concretes preparation, including the healing fundamentals and mechanisms as well as the properties of healed concrete, are highlighted and discussed. It is my pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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