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Self-Healing Concretes

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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.



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Special Issue



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Message from the Editor-in-Chief

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