Special Issue

Self-Healing Hydrogels in Cementitious Materials and Concrete: From Design to Application

Message from the Guest Editors

This special issue focuses on recent advancements spanning theoretical and fundamental aspects of the synthesis, characterization, molecular structure, and applications of hydrogels for enhancing self-healing properties in cementitious materials. The scope includes, but is not limited to, a diverse array of topics such as hydrogels incorporated or encapsulated with healing agents, the interaction between hydrogels and the cementitious matrix, self-healing mechanisms, and the impact of hydrogels on self-healing in cement, alkali-activated materials, and supplementary cementitious materials.

Hydrogels, characterized by their adjustable physical/chemical properties and responsiveness to environmental stimuli are promising materials in the concrete industry. Such as their absorbency, swelling, liquid retention, and release capabilities within the surrounding cementitious matrix, along with their ability to encapsulate healing agents, position hydrogels as a favorable material for promoting self-healing in cementitious materials.

We hope that these topics will inspire new research and discoveries in the field of self-healing hydrogels.

Guest Editors

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Deadline for manuscript submissions

closed (31 May 2025)

Gels

an Open Access Journal by MDPI

Impact Factor 5.3
CiteScore 7.6
Indexed in PubMed

mdpi.com/si/213580

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About the Journal

Message from the Editor-in-Chief

Gels (ISSN 2310-2861) is recently established international, open access journal on physical and chemical gel-based materials. The journal aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. General topics include but not limited to synthesis, characterization and applications of new organogels, hydrogels and ionic gels made either from low molecular weight compounds or polymers, composite and hybrid materials where a metal is by some means incorporated into the gel network, and computational studies of these materials in order to provide a better understanding of gelation mechanism. We cordially invite you to consider publishing with us and contribute with your own grain of sand to the advance in this fascinating field.

Editor-in-Chief

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