Special Issue

Nano-Engineered High-Performance Cement Composites: Microstructure Design for Enhanced Durability

Message from the Guest Editors

This Special Issue explores cutting-edge research on nano-engineered cement composites, with a focus on microstructure design strategies to mitigate degradation mechanisms and extend service life in aggressive environments. For this Special Issue, both original research articles and reviews are welcome. Research areas may include (but are not limited to) the following:

- **Nanomaterials in Cement Composites**: Exploration of various nanomaterials such as carbon nanotubes, graphene oxide, and nanosilica, which significantly improve mechanical strength and fracture resistance.
- **Microstructural Optimization**: Studies on enhancing packing density and reducing porosity through nanomaterial incorporation to improve durability.
- **Sustainability and Eco-Friendliness**: Use of recycled materials and strategies to reduce the carbon footprint of nano-engineered cement.
- **Durability Assessments**: Evaluation of long-term performance under environmental stressors including chemical attack, shrinkage, and freeze–thaw cycles.
- **Self-Sensing and Smart Capabilities**: Investigation into multifunctional cement composites with embedded nanosensors for structural health monitoring and damage detection.

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Deadline for manuscript submissions

20 February 2026

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/246050

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Message from the Editor-in-Chief

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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