Special Issue

Magnesia-Phosphate Cement (MPC) and MPC-Based Functional Materials

Message from the Guest Editor

Magnesia–phosphate cement (MPC) is one of the alternative cements in the high-performance track. It can set quickly even at very low temperatures, and produce high-strength concrete with little shrinkage and superior durability. Because of these technical merits, MPC has been used in the fast repair of pavement and structures, the encapsulation of nuclear waste and toxic substances, and a series of other functional applications. To promote the application of MPC as well as to leverage its technical merits to improve the durability and sustainability of infrastructure, future studies are thus needed to: (1) improve the eco-efficiency and lower the cost of MPC by identifying and investigating alternatives to dead-burnt MgO and supplementary cementitious materials for MPC; (2) develop high-efficiency admixtures (e.g., composite retarder) for MPC; (3) address the water-/moisture-stability of MPC-based materials; and (4) prove the compatibility of MPC with steel and other reinforcements.

Guest Editor

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