Special Issue

Hydration and Microstructural Characteristics of Clay-Based Binders

Message from the Guest Editors

Clay is a natural material that is abundant and widely available worldwide, making it a promising solution for producing low-carbon-footprint binders at scale. The hydration characteristics of clay-based binders are governed by several key factors, including the source, reactivity, and processing of the clay. The chemical reaction between the clay and other components of the binder results in the precipitation of hydration products and developing the microstructure matrix, which in turn affect the mechanical and durability performance of the binder. This Special Issue of the journal aims to expand our understanding of the hydration behaviour and microstructural characteristics of clay in various binders, including but not limited to Portland cement, lime-based, alkali-activated and magnesium oxide. Additionally, this Special Issue will cover topics on the hydration behaviour of various types of clay, advanced characterization techniques for studying the microstructure of clay-based systems, reaction kinetics of clay in the presence of different additives, thermodynamic modelling of clay-binders, and the potential applications of clay-based binders in sustainable construction.

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Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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