

Special Issue on
**Advances in Characterization and Modeling of Refractory
Ceramic Materials**

CALL FOR PAPERS

Refractory ceramic materials are the foundation of high temperature industries, for instance, the iron and steel industry and the cement industry. Compared to fine ceramics, they possess more complex microstructures and phase compositions. In many cases, they are multiple phase composites made of aggregates of various sizes and fines. A significant number of flaws (e.g., pores, microcracks) will form during the production processes. All these features contribute to their particular mechanical, thermochemical, and thermomechanical behavior. It is challenging to characterize their behavior at service conditions and take into account these behaviors with thermomechanical and/or thermochemical modeling. The development of advanced characterization and modeling techniques is essential in order to gain an understanding of refractory behavior during service conditions and promote the applications of suitable refractory ceramic materials for different scenarios.

This Special Issue aims to gather the most recent original research achievements in the advanced mathematical, numerical, and experimental techniques from scientists, engineers, and researchers in the field of refractory ceramic materials for characterizing, modeling, and predicting their performance in service. Review articles on the quality, accuracy, and efficiency of characterization and modeling are also welcome.

Potential topics include but are not limited to the following:

- ▶ Erosion/corrosion characterization
- ▶ Mechanical/thermomechanical characterization
- ▶ Thermodynamic modeling
- ▶ Computational fluid dynamic modeling
- ▶ Finite element modeling
- ▶ Discrete element modeling

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/amse/acmrc/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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