

Special Issue

Fabrication, Characterization, and Application of High-Temperature Materials and Coatings

Message from the Guest Editors

Recent decades have witnessed rapid development in high-temperature industries such as energy conversion systems of land-based power plants or nuclear operations as well as propulsion systems of aircraft or rockets. There are a variety of high-temperature materials such as metals, intermetallic compounds, and ceramics as well as their composites. These materials need to be “strong” enough to withstand heat flux, radiation, corrosive atmosphere and, of course, complex stress. However, one should recognize that the pursuit of higher thermal efficiency never stops acting as the driving force for increasing the operating temperature of the high-temperature components. As a result, a series of advanced ultrahigh-temperature materials have stepped onto the stage. Key questions to be addressed include: why do these materials work at high temperatures? What happens to the microstructure of these materials when serving in such severe conditions? How do we design novel high-temperature or ultrahigh-temperature materials? You are welcome to contribute to this Special Issue, which is dedicated to revealing the mysteries of these materials.

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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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