Special Issue

Recent Advances in Materials for Molten Salt Nuclear Reactor Technology

Message from the Guest Editors

Molten salts are receiving increasing attention worldwide as key materials for sustainable and low-carbon energy technologies in relation with their appealing thermochemical and thermophysical properties. In particular, the interest in nuclear molten salt reactor (MSR) technology, where molten salts are used both for the nuclear fuel and coolant materials, is growing very rapidly. The development towards commercialization requires a thorough safety analysis of all components during operation, especially of the molten salt fuel, coolant, and structural materials that are subject to extreme conditions during reactor operation, as well as their interaction. We invite investigators to contribute original research or review articles reporting recent advances in the materials developed for MSR designs, including fuel and coolant salt synthesis, thermochemical and thermophysical properties, thermodynamic modelling assessments, performance of structural materials with respect to corrosion at high temperature and radiation damage, etc. This Special Issue aims especially at highlighting the relationships between structure and properties in the aforementioned research areas.

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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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