Special Issue

Coating Materials for High Temperature Applications

Message from the Guest Editor

High-temperature protective coatings are widely applied in hot-end components of aviation, aerospace, weapons, etc. Since the 1950s, a wide variety of high-temperature protective coatings have been investigated, ranging from single-layer coatings to multi-layer gradient coatings, from alloy coatings to current ceramic coatings. Coating materials for high-temperature protection applications have also expanded considerably, from high-temperature metals to multi-component composites, and their properties can be further enhanced by the addition of reactive elements. Taking the hot-end components of aero-engine turbines as an example, there are thermal barrier coatings on turbine blades, sealing coatings on the outer ring of the turbine, anti-oxidation, and corrosion-resistant coatings in inner-cavity blades, and wear-resistant coatings on blade tips. This Special Issue aims to cover recent developments in the relationship between the microstructure, fabrication, and the thermal and mechanical properties of coating materials at elevated temperatures. Full papers, short communications, and reviews are all welcome.

Guest Editor

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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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