Special Issue

Novel Thermal Barrier Coating Materials

Message from the Guest Editors

Thermal barrier coatings (TBCs) are usually applied for protecting metallic components in gas turbines for aviation and energy applications. These hot components include combustion chambers, blades, and vanes. The TBC leads to a significant reduction of heat transfer from the high temperature gas to the metal surface. Research in new chemical compositions and the development of novel deposition processes, prediction of the TBC service life and of failure modes are key aspects for the TBC production process. In parallel, the improvement of experimental capabilities in the thermal, mechanical and relevant operative environment in conjunction with numerical modelling tools allow the enhancement in TBC understanding and their extensive usage for industrial applications. In this Special Issue, research and development enhancement in the field of TBC from the chemical composition to deposition process including experimental and numerical aspects are presented and discussed. It is my pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

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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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