Special Issue

Thermal Barrier Coatings

Message from the Guest Editor

Thermal barrier coatings (TBCs) are compulsorily applied on components operating at temperatures over or close to their melting temperatures. The thermal insulation provided by TBCs to the parts allow both to maintain their mechanical properties and to limit access of the aggressive environments to the metal substrates. Over the last decades, many different materials –mostly ceramics- have been fabricated through different methods. For the same type of ceramic material, the resulting properties can be quite different depending on such methods. An adequate balance between thermal insulation, mechanical properties and durability is often difficult to find though quite robust TBCs are operating today.

However, the increased operating temperatures of thermal power engines in the energy and transport systems requires further investigations of more advanced and exotic TBC systems that include new compositions, microstructures, and multilayering, among others. Such new TBCs will respond to the appearance of new degradation phenomena in many practical applications. Further, sensor coatings allow one to facilitate quality control and the maintenance operations of the coatings.

Guest Editor

Prof. Fernando Pedraza

University of La Rochelle, LaSIE UMR7356 Research Section, CNU 33 (Chemistry of Materials), CNRS Scientific Department, INSIS, La Rochelle, France

Deadline for manuscript submissions

closed (31 December 2021)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/32769

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

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.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)