Special Issue

New Advances in SiC-Based Composite Materials

Message from the Guest Editors

Silicon-based ceramics are well known, at both academic and industrial research levels, for their outstanding room temperature and high-temperature properties, such as their elevated strength, hardness, stiffness, corrosion and oxidation resistance. A new drive for these materials has emerged in recent years because of their incorporation in turbine engines for airplanes. The need for complex geometries that can be incorporated into such engines makes manufacturing techniques, such as reactive infiltration, topics of high-interest. Furthermore, Si-based ceramics, in particular silicon carbide (SiC), have been considered a leading candidate for use in certain parts of future fusion reactors. However, there are still technical and scientific difficulties that require further research and development, such as the inherent lack of toughness of these ceramics. Beyond its unique properties, SiC has been used to synthesize the most pristine graphene sheets through the sublimation of Si atoms from its surface. This kind of composite material represents one of the most promising candidates for next generation electronics.

Guest Editors

Prof. Dr. Javier Narciso

Instituto Universitario de Materiales de Alicante (IUMA), Universidad de Alicante, Apdo. 99, 03080 Alicante, Spain

Dr. Mario R. Caccia

Materials Engineering Department, Purdue University, West Lafayette, IN 47907, USA

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

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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.

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

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