Special Issue

Mechanical Properties of Graphene and Graphene-Based Nanocomposites

Message from the Guest Editor

Graphene-based nanocomposites possess excellent mechanical, electrical, thermal, optical, and chemical properties. These materials have potential applications in high-performance transistors, biomedical systems, sensors, and solar cells. The mechanical properties of the graphene family of materials mostly depend on the preparation and properties of bulk graphene-based nanocomposites. Furthermore, the preparation strategies of bulk graphene-based nanocomposites have a unique correlation between the filler modulus, derived from the rule of mixtures, and the composite matrix. This correlation with a wide range of polymer matrices and the filler modulus explains the apparent underperformance of graphene nanocomposites. Some of the topics of interest in this Special Issue include: the importance of characterization techniques, including nanoindentation/microindentation, Raman spectroscopy, X-ray diffraction (XRD), atomic force microscopy (AFM), scanning electron microscopy (SEM), and high-resolution transmission electron microscopy (HRTEM) for the characterization of graphene flakes and their composites;

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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