

Special Issue

Numerical and Experimental Insights into Thermal, Mechanical and Electrical Behavior of Carbon-Based Nanocomposites

Message from the Guest Editors

This Special Issue focuses on the recent breakthroughs in the multi-physical characterization of carbon-reinforced nanocomposites. The integration of carbonaceous fillers into polymer matrices has opened new frontiers for creating multifunctional materials.

The primary objective of this collection is to explore the synergistic effects of thermal, mechanical, and electrical properties. We seek contributions that delve into how the internal morphology and chemical functionalization of carbon fillers influence the composite's overall behavior under diverse environmental and operational conditions.

The scope of the collection encompasses a wide range of critical phenomena, including electromagnetic interference shielding, electrical percolation thresholds, thermal stability, and enhanced heat dissipation strategies. We encourage studies regarding viscoelastic behavior, fracture mechanics, and the emerging field of smart materials, such as self-sensing components utilizing piezoresistive effects. Special attention will also be given to how advanced manufacturing processes influence nanofiller orientation and the long-term durability of the final components.

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Message from the Editorial Board

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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