Special Issue

Towards Toughened Composites: Present and Future Challenge

Message from the Guest Editors

Composite materials are characterized by high specific mechanical properties, while their out-of-plane properties have been always a major challenge that limits utilizing the full potential that such material systems can offer. Several design parameters should be addressed in order to enable the spread of the technology even further into industrial applications. One of the key properties, required in the aforementioned applications, is the toughness of composites materials.

Thus, the aim of the proposed Special Issue is to shed more light on the different but essential toughening mechanisms and techniques of composites. This can be achieved via various approaches including but not limited to: matrix toughening, introduction of nanoparticles or nanotubes, use of thermoplastic veils, and all possible ways of 3D reinforcement such as stitching, tufting, z-pinning, and 3D weaving. The experimental and computational characterization of such relevant toughening mechanisms and their associated failure modes; the proposal of new cost-effective, reliable manufacturing techniques; and non-destructive evaluation of the damage are all key subjects that this Special Issue aims to cover.

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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.

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