Special Issue

Rational Design of Carbon-Based Composites and Their Microwave Absorption

Message from the Guest Editor

Carbon materials have recently attracted much attention in microwave absorption materials due to their light characteristics, strong chemical resistance and adjustable microstructures. However, the dielectric constant of pure carbon material is often too high, leading to poor impedance matching and weak microwave absorption. With the aim of solving the above limitations, much research focuses on developing carbon-based composites, in which the synergistic effects of dielectric loss and magnetic loss promote impedance matching, resulting in outstanding microwave absorption. This Special Issue will attempt to cover the recent advances in the rational design of carbon-based composites and their microwave absorption, concerning not only the fabrication processes, the materials employed (carbon nanotubes, graphene, MOF-derived carbon, etc.), and special microstructures (porous structures, core/yolk-shell structures, hollow structures, 3D structures, etc.) but especially reports of their practical application in microwave absorption.

Guest Editor

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Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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