Special Issue

Advances in Memristive Nanomaterials

Message from the Guest Editor

Memristive materials and devices are among the best hardware units for building neuromorphic systems due to the functional resemblance they bear to their biological counterparts (e.g., synapses and neurons), their inherent low voltage, their cost-effective fabrication, and their multi-bit storage capacity, meaning they have attracted considerable attention and have become a research hotspot. Many great efforts have been devoted to the development of memristive materials for brain-like neuromorphic systems. However, there are still extensive fundamental research questions about memristive materials, such as behavior, function and performance. Therefore, the study of memristive physics, materials, and devices is still necessary. Apart from their neuromorphic computing applications, memristive materials can also be used in the fields of photodetection, sensor, or even security. This Research Topic aims to contribute a comprehensive overview of the recent important findings and progress, summarize current challenges, and hopefully propose perspectives for future research in memristive materials.

Guest Editor

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Deadline for manuscript submissions

closed (30 June 2023)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/143128

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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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