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Redox-Based Resistive Nanomemristor for Neuromorphic Computing

Guest Editor:

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Deadline for manuscript submissions:
closed (30 November 2022)

Message from the Guest Editor

With the advent of the artificial intelligence (AI) era, there has been a surge of interest in neuromorphic devices imitating biological neural systems that are presumed to be the most efficient information processors for conducting cognitive tasks such as image/pattern recognition and future prediction.

Over the decades, various types of neuromorphic nanodevice have been demonstrated. Among them, redox-based resistive memory is one of the most promising candidates in terms of scalability, power consumption, switching speed, and endurance/retention characteristics.

To expedite the development of neuromorphic nanodevices, further research is necessary from materials to systems architecture.

In this Special Issue on redox-based resistive memory in nanoscale for neuromorphic computing, we expect contributions from a broad community of scientists and engineers working on redox-based resistive memory including materials and device fabrication. We also anticipate manuscripts dealing with new understanding and characterization methods regarding conduction mechanisms.

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Editor-in-Chief

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Message from the Editor-in-Chief

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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