Special Issue

Nanomaterials-Based Memristors for Neuromorphic Applications

Message from the Guest Editor

Memristors, which are two-terminal circuit elements with resistive switching behavior, have attracted significant attention due to their simple structure, high switching speed, low power consumption, and desirable switching dynamics for emulating biological synapses. These features make the devices good candidates for broad applications of nonvolatile memory, logic, in-memory computing, and neuromorphic applications. Over the past decade, a number of studies on memristors related to materials, mechanisms, performance, and their neuromorphic applications have been reported. New materials, devices, and architectures are being aggressively studied to meet future neuromorphic needs.

This Special Issue aims to compile recent developments in the field of nanomaterials for developing memristor devices. The articles presented in this Special Issue will cover various topics ranging from, but not limited to, the development of materials, device fabrication, mechanism investigation, performance optimization, and the neuromorphic application of memristors.

We invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

Guest Editor

Dr. Xiaoning Zhao

Key Laboratory for UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, Changchun 130024, China

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Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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