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Research on Ferroelectric and Spintronic Nanoscale Materials

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Message from the Guest Editors

Ferroelectric nanoscale materials have attracted substantial interest due to not only fundamental physical phenomena that are distinct from the bulk, including exotic domain configurations, such as flux-closure domains, polar vortex, and polar skyrmions, but also potential applications in reconfigurable ferroelectric memory devices. Meanwhile, spintronic nanoscale materials are fundamentally fascinating because scaling down the dimension of a magnet to nanometers produces diversities of exotic magnetic states, such as a single domain, vortex domain, magnetic skyrmions and so on, which is promising for encoding binary or multiple-state data in novel spin memories.

The present Special Issue of *Nanomaterials* aims to presenting the current state of the art in the use of ferroelectric and spintronic nanoscale materials, a field that has blossomed since the 2010s, with seminal discoveries such as novel physical phenomena, including polar topological domains, exotic ferroelectric skyrmions, and magnetic skyrmions, and their potential applications.

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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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