Special Issue

Research on Sensing of Nanogenerator

Message from the Guest Editors

Nanogenerators enable revolutionary self-powered sensing by harvesting ambient mechanical, thermal, and solar energy, thereby eliminating the need for external power sources. Their integration with IoT and AI is driving transformative applications in healthcare, environmental monitoring, and human–machine interfaces. This Special Issue seeks cutting-edge research addressing these frontiers through novel material architectures, advanced fabrication techniques, and related innovations. We particularly encourage system-level advances in hybrid energy harvesting (tribo–piezo–thermoelectric), durability, and scalable manufacturing. Studies that quantify reliability, optimize dynamic response, and bridge the gap between laboratory research and industrial application are especially welcome. Through interdisciplinary collaboration, this Special Issue aims to accelerate the development of nanogenerator-based sensing from fundamental research to deployable solutions. We invite original research articles, reviews, and perspectives that advance scientific understanding and practical implementation to pioneer energy-autonomous smart systems.

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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.

Editor-in-Chief

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