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Functional Nano-Hybrid Insulation Materials

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Message from the Guest Editors

Dear Colleagues,

This Special Issue of ‘Nanomaterials’ aims to present the current state of the art in ‘Functional Nano-Hybrid Insulation Materials’, a field mainly interested in physical and chemical modification of solid and liquid insulating media, achieved using nanoparticles or modified nanoparticles.

Potential topics include (but are not limited to):

1. The fundamental science of nano-hybrid insulation materials, including quantum mechanics, thermodynamics, defects, and traps characterized by sophisticated experimental techniques and state-of-the-art theory.
2. The underlying principles and mechanisms of the physicochemical properties of nano-hybrid insulation materials understood by experimental studies and theoretical calculations.
3. Atomistic (ab initio, molecular dynamics) simulation and first-principles prediction of novel physical and chemical properties of nano-hybrid insulation materials.
4. Surface and internal interactions of nano- and micro-particles with insulation materials.
5. Preparation, evaluation, and application of nano-hybrid insulation materials in power equipment.



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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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