

Special Issue

III-Nitride Semiconductors Thin Film and Nanostructured Material, Properties, Electronic, Optoelectronic, and Ferroelectric Applications

Message from the Guest Editor

III-nitride semiconductors have garnered significant attention due to their compelling applications in solid-state lighting and power devices, playing a pivotal role in the advancement of next-generation optoelectronic and electronic devices. Emerging properties such as ferroelectricity, ferromagnetism, and superconductivity are being integrated into III-nitrides, enhancing their potential for applications in advanced semiconductor and quantum technologies of the future. The recent experimental evidence of ferroelectricity in nitride materials, including ScAl(Ga)N, and AIBN has sparked significant research enthusiasm. The Nitride ferroelectrics is regarded as a promising material for the development of cutting-edge microelectronic memory, acoustic devices, and quantum devices, potentially catalyzing the convergence and enhanced functionality of ferroelectric properties with microelectronics. This Special Issue is to delve into the III-nitride semiconductors, encompassing structural, properties and various epitaxial processes. Additionally, it aims to investigate the application of III-nitride semiconductors in electronic, optoelectronic, and ferroelectric fields.

Guest Editor

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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.

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