Special Issue

III-Nitride Nanomaterials and Devices

Message from the Guest Editor

Group-III nitride nanostructures, such as GaN/AlGaN and InGaN/GaN quantum wells, quantum wires, and quantum dots, have become one of the most important semiconductor nanomaterials since the discovery of GaN-based light-emitting diodes and laser diodes in the 1990s. Due to the large differences between the direct band gaps of InN, GaN, and AlN, they can emit light in a very wide spectral region from the far infrared to the deep ultraviolet. Currently, InGaN/GaN and GaN/AlGaN quantum wells operating in the blue and near-ultraviolet spectral region are widely used in the active regions of commercial light emitters.

This Special Issue focuses on the most recent advances in group-III nitride nanomaterials and devices. The potential topics of this Special Issue include the epitaxial growth of nitride nanomaterials, theoretical modelling and numerical simulations of nitride nanostructures and devices, structural, electrical and optical properties of nitride nanomaterials, nano-light-emitting diodes and ultra-small lasers, and III-nitride single photon emitters.

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.

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