Special Issue

Diffusion and Segregation Measurements in Semiconductor Nano-Structures and Devices

Message from the Guest Editor

Progress in semiconductor research and development of improved (opto)electronic devices rely on three foundations: New materials, novel design principles, and miniaturization according to what is commonly known as Moore's Law. As devices shrink further, their properties will be more and more determined by individual atomic movements across interfaces, at surfaces, and near lattice defects. The understanding of such atomic diffusion and segregation processes has been furthered by two converging developments: The resolution, sensitivity, and reliability of microscopic measurements have been extended right down to atomic dimensions by the development of new and the improvement of existing microscopic imaging and spectroscopy methods. This Special Issue of *Nanomaterials* aims at documenting recent advances in experimentally assessing the diffusion and segregation of atoms in semiconducting systems on the nanometer scale, with a focus on quantitative measurements by techniques with high lateral spatial resolution.

Guest Editor

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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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