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# Self-Assembly Phenomenon in Nanoscale Systems

Guest Editor:

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## Message from the Guest Editor

The self-assembly of nanoscale systems is a phenomenon where molecules, polymers, colloids, or macroscopic particles organize themselves into ordered and/or functional structures or patterns as a consequence of specific local interactions, without external direction. A detailed scientific and technical understanding is essential for the phenomenon, describing the thermodynamics of the process, the types of structures formed, and how the structures might be directed to precise morphology, orientation and alignment, and the elimination of various defects during the process. These properties also enable a plausible route for patterning a variety of different materials into periodic structures using self-assembly as a template. The scope of possible applications for the self-assembly of nanoscale systems is rapidly expanding, with multidisciplinary contributions involving the fields of chemistry, physics, materials science, biology, and medical science.

This Special Issue will be focused on experimental and theoretical aspects of the self-assembly process to create different nanostructures, the study of their properties, and their applications.

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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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