

Special Issue

Nanomaterials for Solar Energy Conversion and Storage

Message from the Guest Editors

Nanomaterials have since played vital roles to the advancement of many key technologies. Reducing particle size to the nanometre scale have since unearthed a cornucopia of properties that have been favourable to a wide-array of applications, most evidently, in solar energy conversion and storage. The heterogenous nature in solar energy conversion and storage processes which chiefly rely on physical interaction and/or chemical reactions at the surface or interface make them highly exploitable to manipulations in surface chemistry, energy and kinetics that arise upon nanostructuring. More directly, nanostructured materials have the advantage of enhanced surface area and thus host more favourable charge/ion/mass transport properties. Moreover, nanomaterials differ to its bulk counterpart not only by a matter of scale, but they can also harbour novel properties, thereby unlocking new useful mechanisms e.g., quantum confinement, causing nanomaterials to achieve higher solar energy conversion and storage efficiency. This special issue therefore brings into focus nanotechnology as a powerful faculty to leverage further advancement in many energy-related applications.

Guest Editors

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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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