

## Special Issue

# Surface Microstructure Regulation of Low-Dimensional Nanomaterials Photocatalysts for Energy and Environmental Applications

### Message from the Guest Editors

Semiconductor photocatalysis, which converts ubiquitous, inexhaustible, and clean solar power into high energy density chemical energy, is considered as one of the most promising technologies to solve these problems. Low-dimensional nanomaterial photocatalysts commonly have smaller sizes and larger specific surface areas, can expose more active sites, and contribute to the subsequent structural modifications and reactant absorption. More importantly, low-dimensional photocatalysts possess a shorter bulk diffusion distance compared to photoinduced carriers, which reduces electron-hole pair recombination. On the other hand, the surface microstructure of nanomaterials has an important effect on the physical and chemical properties of the materials. Optimizing the electronic band structure and surface properties of low-dimensional photocatalysts through surface microstructure regulation strategies such as crystal plane engineering, defect engineering, and surface modification, as well as morphology and size control is of great significance to further enhance their photocatalytic performance and promote their applications in the fields of energy and the environment.

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### Deadline for manuscript submissions

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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### Editor-in-Chief

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