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Superoleophobic Surfaces from Nanomaterials or Nanostructures

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Message from the Guest Editors

For decades, superoleophobic surfaces obtained through biomimetic techniques have triggered giant billows in the field of nanomaterials. In the beginning, inspired by the natural oil-repellency of leafhoppers and springtails, researchers utilize re-entrant structures (locked air cushion) and low-surface-energy substances (mainly fluorinated compounds) to fabricate superoleophobic surfaces in air. Later, fish scale provided another preparation strategy for underwater superoleophobic surfaces by utilizing superhydrophilicity (locked water cushion) in the air. Nanomaterials and nanostructures can enhance the effect of air or water cushioning between oil and surfaces by stacking to form multi-scale rough structures. At the same time, a low/extreme-surface-energy state can be achieved by chemical modification of nanomaterials. To date, a wide range of multifunctional artificial superoleophobic surfaces have been fabricated, with promising applications in fundamental research and industrial applications. The present Special Issue aims to introduce the latest progress in superoleophobic surfaces.

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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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