Chapter 3

Advanced Techniques for Fabrication of Superamphiphobic Surfaces

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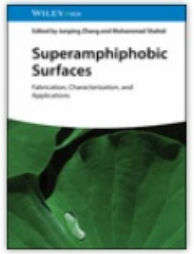
Abstract

Over the last two decades, researchers have made significant progress in developing superamphiphobic coatings for a wide range of applications, such as super-antiwetting, self-cleaning, antifreezing, antibacterial, corrosion resistance, and oil droplet manipulation. The fabrication of superamphiphobic coatings is limited by complex fabrication techniques, expensive materials, structural durability, chemical stability, and wetting problems. The wetting properties of superamphiphobic surfaces can be tailored by adjusting their chemical composition and surface roughness. Fabricating superamphiphobic surfaces typically involves designing hierarchical micro- and nanoscale roughness on a solid surface using nanotechnology, followed by low surface energy chemical modification. This chapter presents the fundamentals behind various advanced fabrication techniques, and their advantages and disadvantages are briefly discussed. In summary, this chapter discusses the challenges and future perspectives for advancement in fabrication techniques for superamphiphobic coatings.

References



Superamphiphobic Surfaces: Fabrication, Characterization, and Applications

References Related Information

Recommended

Impalement-resistant Superamphiphobic Surfaces

Bucheng Li, Junping Zhang

Superamphiphobic Surfaces: Fabrication, Characterization, and Applications, [1]

Self-healing Superamphiphobic Surfaces

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Superamphiphobic Surfaces: Fabrication, Characterization, and Applications, [1]

Superamphiphobic Surfaces for Self-cleaning and Antifouling

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