Special Issue

New Advances in Superhydrophobic Materials: Fabrication, Characteristics and Applications

Message from the Guest Editor

In recent years, superhydrophobicity exhibiting a water contact angle (WCA) higher than 150° and a sliding angle (SA) lower than 10° has been attracting attention due to its many benefits. The excellent superhydrophobic surface obtains some specific advantages in waterproofing, such as self-cleaning, anti-ice, anti-microbial, and anti-corrosion properties, drag reduction, evaporation enhancement, and oil–water separation. Currently, the challenges faced by superhydrophobic materials involve effectively fabricating materials with robust properties to adapt to the practical applications. These materials are prone to damage due to their micro-nanostructures, caused by factors like climatic conditions, friction, and changes in hydrophobic models. On the other hand, there is another important issue of how we can combine or utilize superhydrophobic functions with other functions to achieve more effective material functionality, such as combining them with photothermal and electrothermal properties for efficient anti-icing and de-icing. Similarly, combining superhydrophobicity with anti-corrosion features can enhance corrosion protection, and so on.

Guest Editor

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