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Engineering lotus leaf-inspired micro- and nanostructures for the manipulation of functional engineering platforms

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Abstract

The micro- and nanoscale structures of biological systems possess various intriguing properties, providing new insights and design principles for the fabrication of engineering platforms. In particular, the unique micro- and nanosurfaces of lotus leaves are highlighted as an emerging strategy that can be used as a tool for the manipulation of superhydrophobicity-based devices. In this review, we provide basic information on lotus leaf surface and present recent advances in micro- and nanoscale engineering platforms inspired by the surface topographies of lotus leaves for various applications. In addition, new perspectives on lotus leaf-inspired functional platforms in various engineering fields are discussed.

Keywords: Biomimetic, lotus leaf surface, multiscale structure, superhydrophobicity, functional engineering device

Nomenclature

CA Contact angle

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