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Effects of Surface Textures and Chemistries on Wettability

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Abstract : Wetting of a solid surface by a liquid is an extremely common yet subtle phenomenon in natural and applied sciences. A clear understanding of both short and long-term wetting behaviors of surfaces is essential for creating robust anti-biofouling coatings, non-wetting textiles, non-fogging mirrors, and preventive linings against dirt and icing. In this study, silica beads (diameter, D ≈ 100 μm) functionalized using different silane reagents were employed to modify the wetting characteristics of smooth polydimethylsiloxane (PDMS) surfaces. Resulting composite surfaces were found to be super-hydrophobic, i.e. contact angle of water,

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