

Simple fabrication of a stable superhydrophobic surface with only a candle

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A stable superhydrophobic surface can be quickly created with only a candle. A surface is coated with paraffin wax by rubbing a candle on the surface and the surface is sooted with a candle flame. This coating method does not require any solvent, further surface treatment, drying process or post-treatment processes. This degree of simplicity in making a superhydrophobic surface has never been previously reported. The mechanism of the paraffin wax-fixed candle soot (PFCS) coating is explained. The simple PFCS coating method can be applied to various surfaces, such as metal, ceramic, wood, plastic and even paper. We provide proof-of-concept demonstrations in the application of this PFCS coating method. We foresee that this simple method will open up new avenues in the development of low-cost and quick processes to fabricate superhydrophobic surfaces and has enormous potential in a wide-range of applications.