

Superhydrophobic surface through direct microwave irradiation on stainless steel surface

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Superhydrophobic surface was synthesized by making nanostructures on the stainless steel SUS304 surface by direct microwave irradiation followed by coating the surface with trichloro(1H,1H,2H,2H-perfluorooctyl)silane. Microwave irradiation on metal makes arc and microplasma of the atmosphere, which reacts with substrate and makes iron and chromium oxide nanorods on the stainless steel surface. The nanorod structure parameters were controlled by changing microwave power and irradiation time, and the optimal structure was derived by static contact angle and contact angle hysteresis.