Electronic supplementary information

Electrowetting on the dielectric (EWOD) properties of teflon-coated electrosprayed silica layers in air and oil media and the influence of electric leakage

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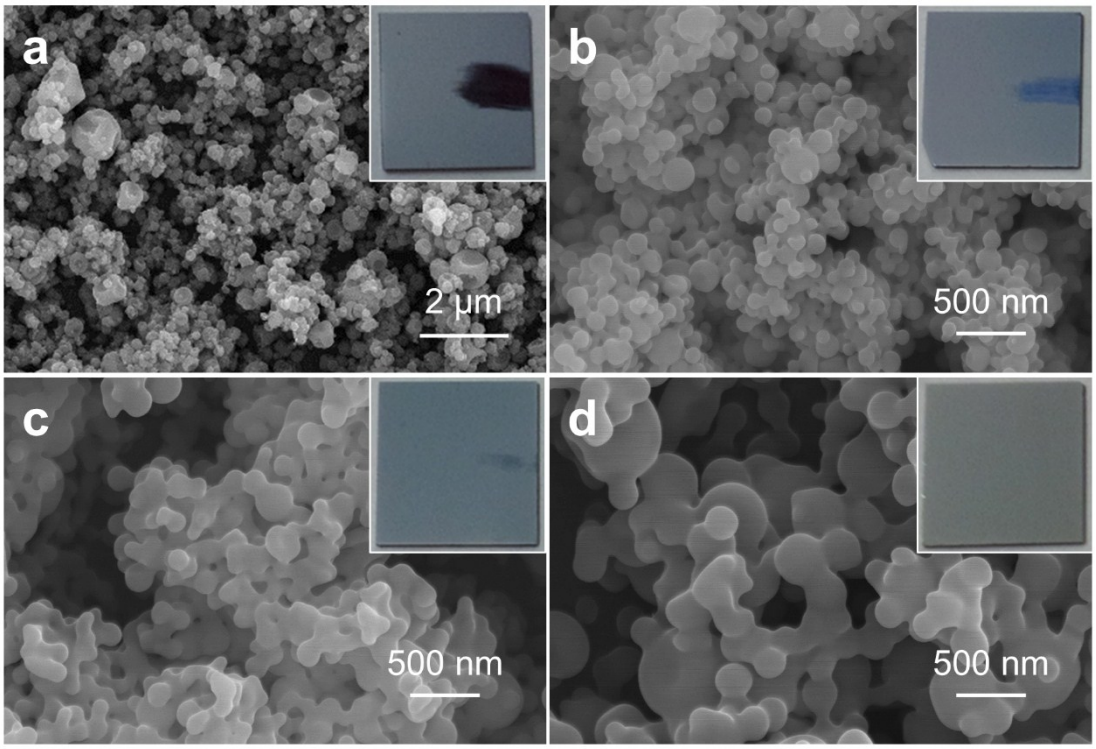

Fig. S 1. FE-SEM images of scratched SiO_2 layers on Si substrate. The surface was scratched with a cotton swab, then the surface morphology was observed by FE-SEM. As the heat treatment temperature was increased from (a) 400°C (b) 1100°C (c) 1150°C and (d) 1200°C, the adhesion between the deposited SiO_2 layer and Si substrate greatly enhanced.

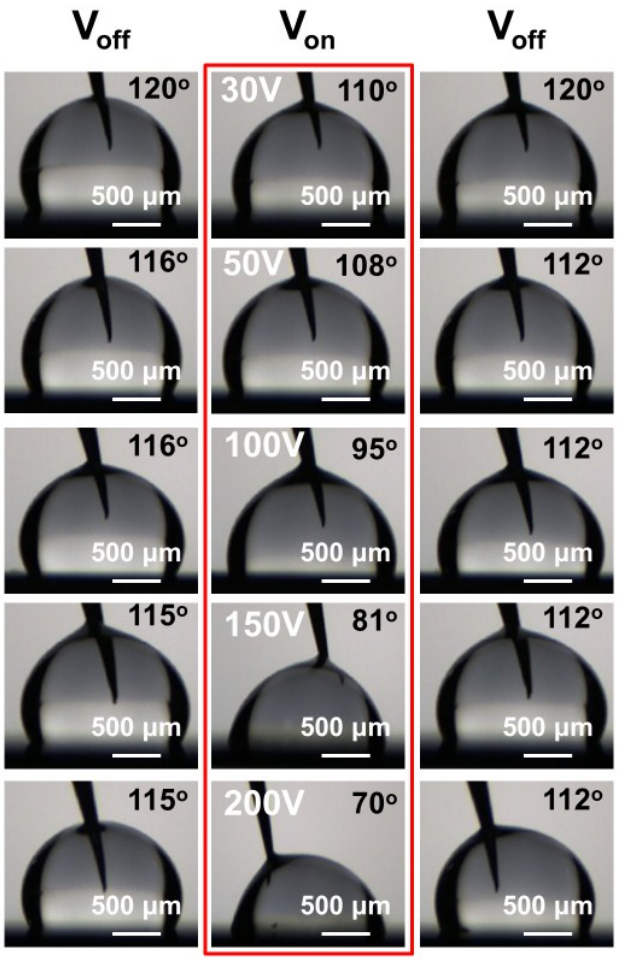

Fig. S2 WCAs on Teflon coated (35 nm) flat SiO_2 layer under application of different external voltages.

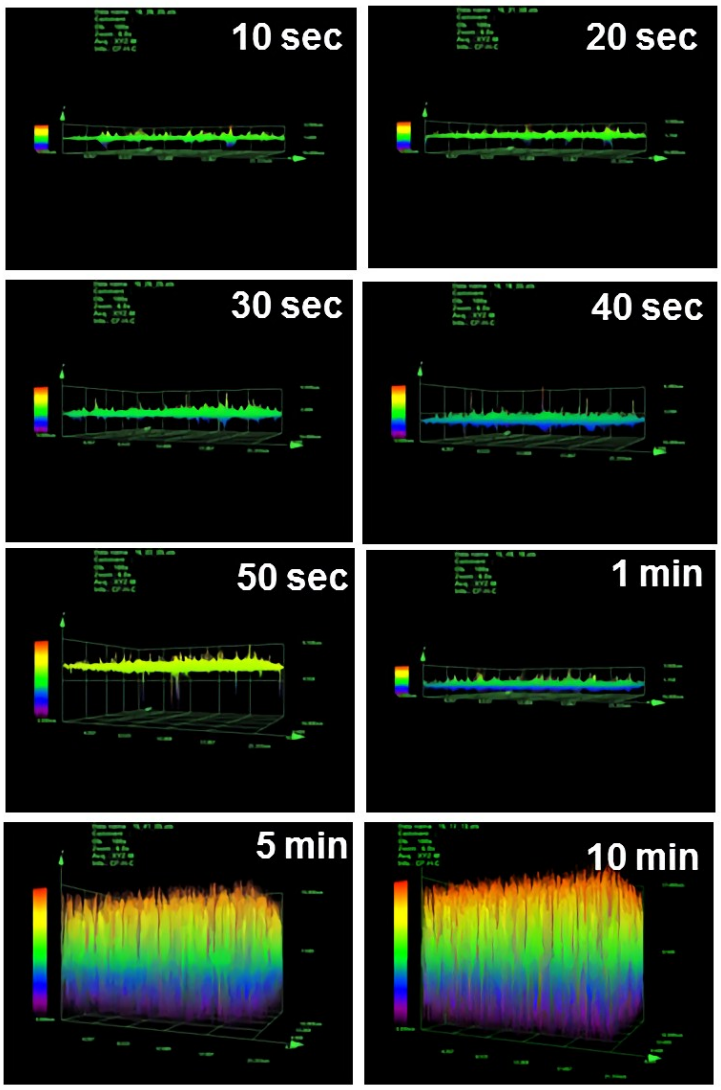

Fig. S3 3D laser scanning microscopy images of rough SiO_2 layers deposited for different times.

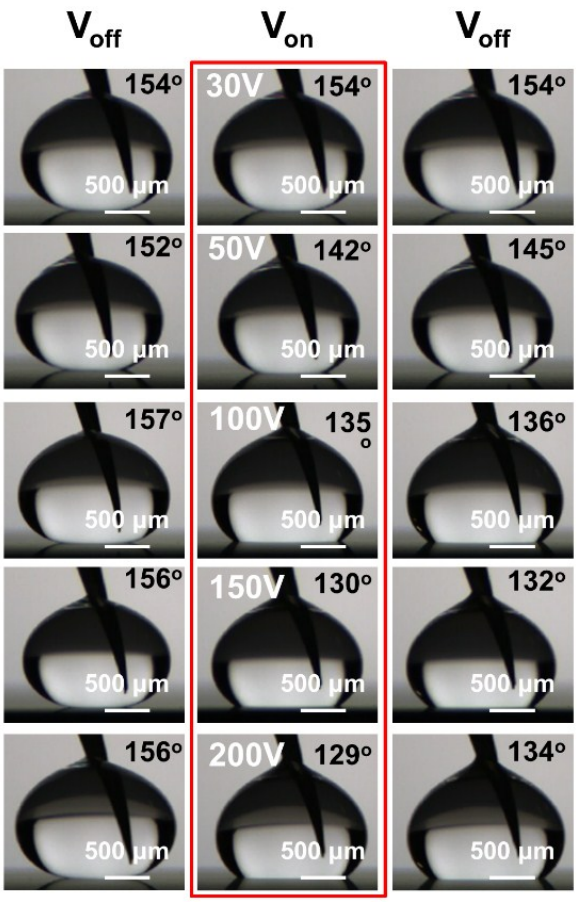

Fig. S4 WCAs under different applied voltages for Teflon coated (35 nm) rough SiO_2 layer deposited for 5 min.

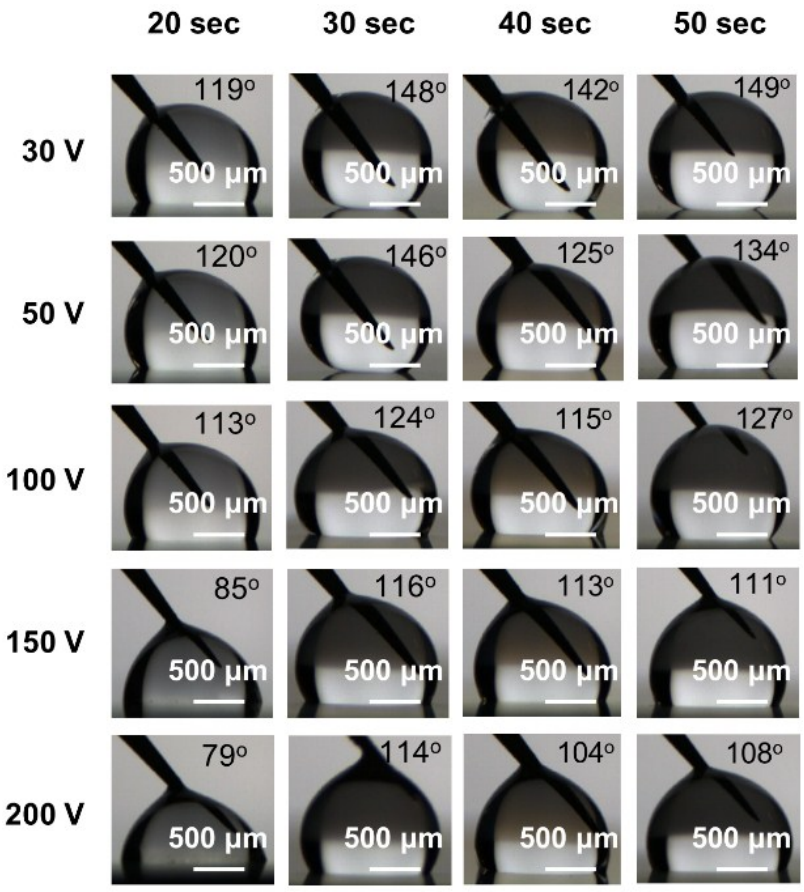

Fig. S5 WCAs under different applied voltages for Teflon coated (35 nm) rough SiO_2 layers deposited for different times.

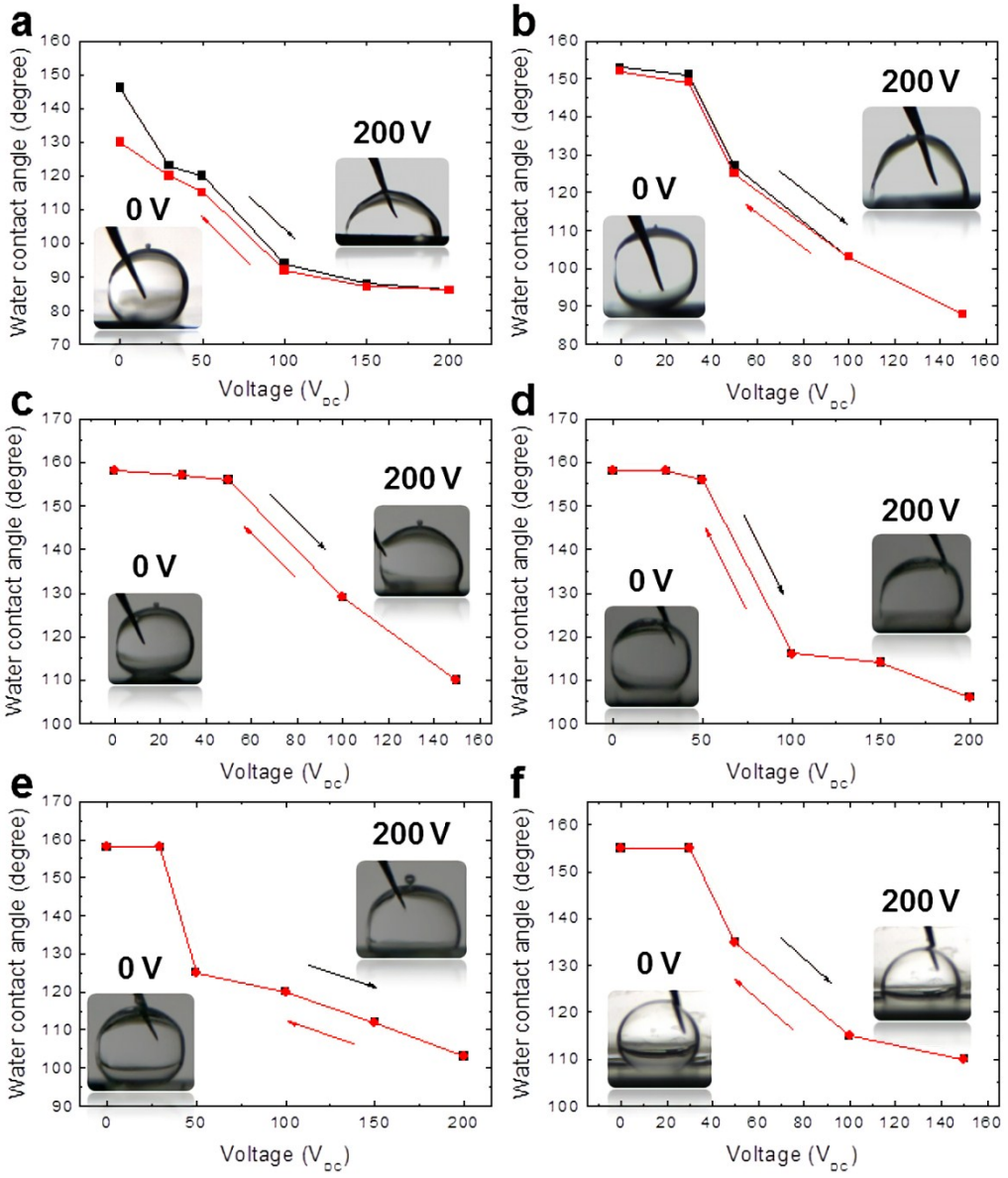

Fig. S6 WCAs hysteresis under different applied voltages on Teflon coated (35 nm) silica layers in oil ambient. The silica layers were deposited for (a) 20 s, (b) 30 s, (c) 40 s, (d) 50 s, (e) 3 min, and (f) 5 min.