Supporting Information

Non-fluorinated Omniphobic Paper with Ultra-low Contact Angle Hysteresis

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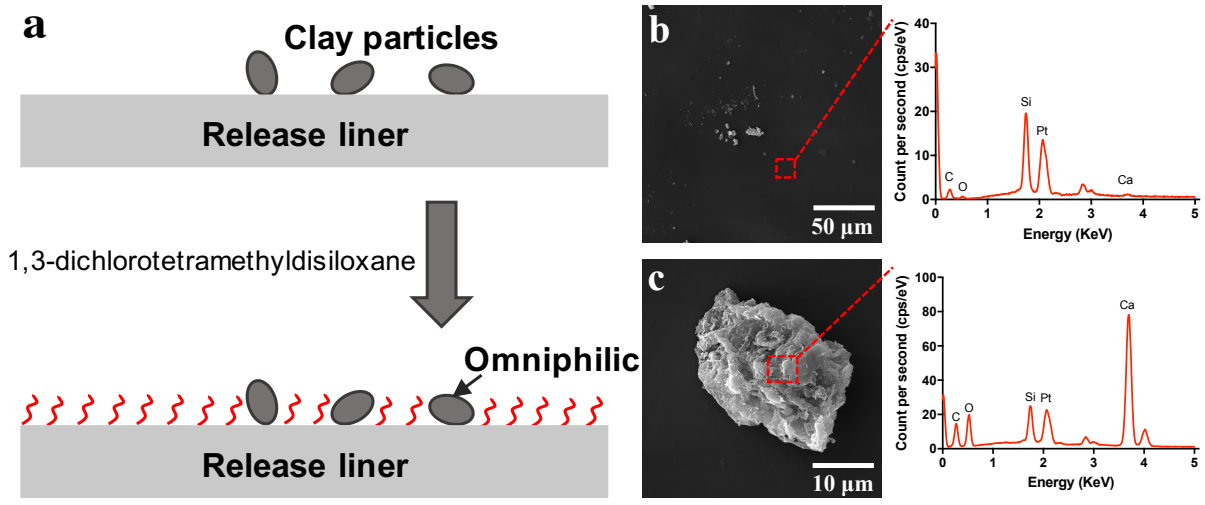

Figure S1. (a) The silanization of 1,3-dichlorotetramethyldisiloxane on release liners that are partially covered by clay particles from the precoating layer. SEM images and EDS spectra for RL2 on (b) the silicone coating and (c) clay particles.

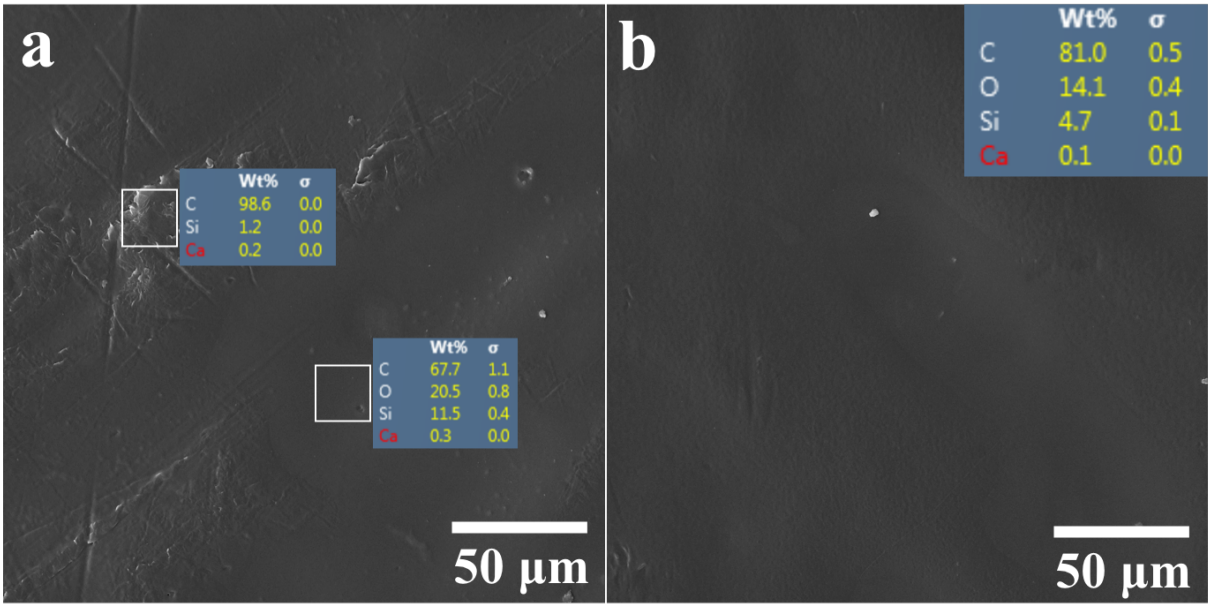

Figure S2. EDS spectrum showing the concentration of Si on RL1 after (a) scrubbing moderately with a cloth and (b) sonication in ethanol for 3 min.

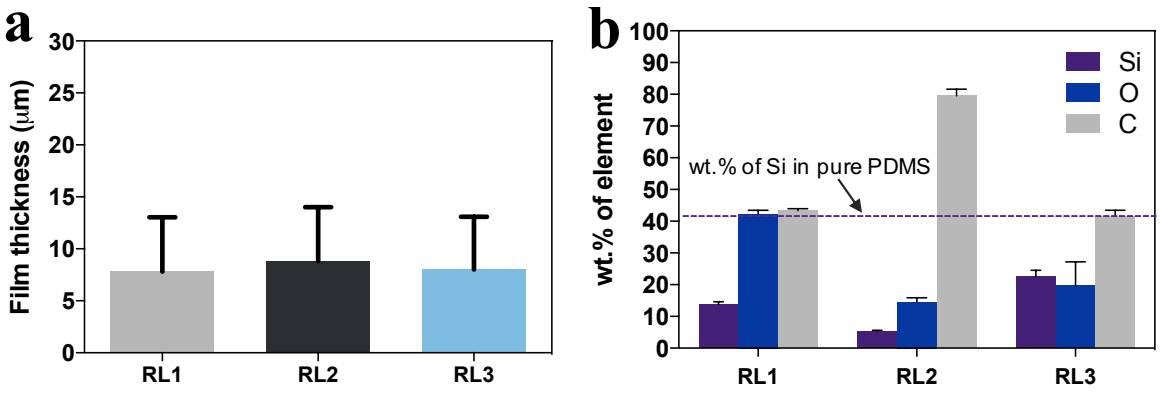

Figure S3. (a) Silicone film thickness measured by laser interferometry measurement and (b) wt.% of Si from the EDS analysis for RL1, RL2, and RL3. Error bars denote one SD (N ≥ 5).

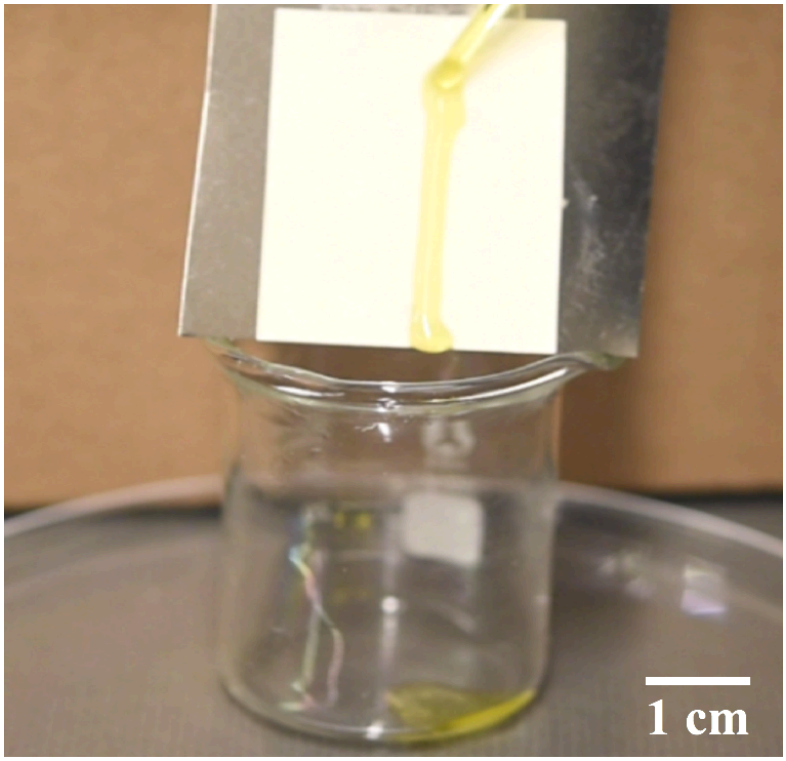

Figure S4. Transport of olive oil on the PDMS-grafted RL3 microfluidic open-channels. The output olive oil was collected by beaker to determine the sample delivery efficiency.

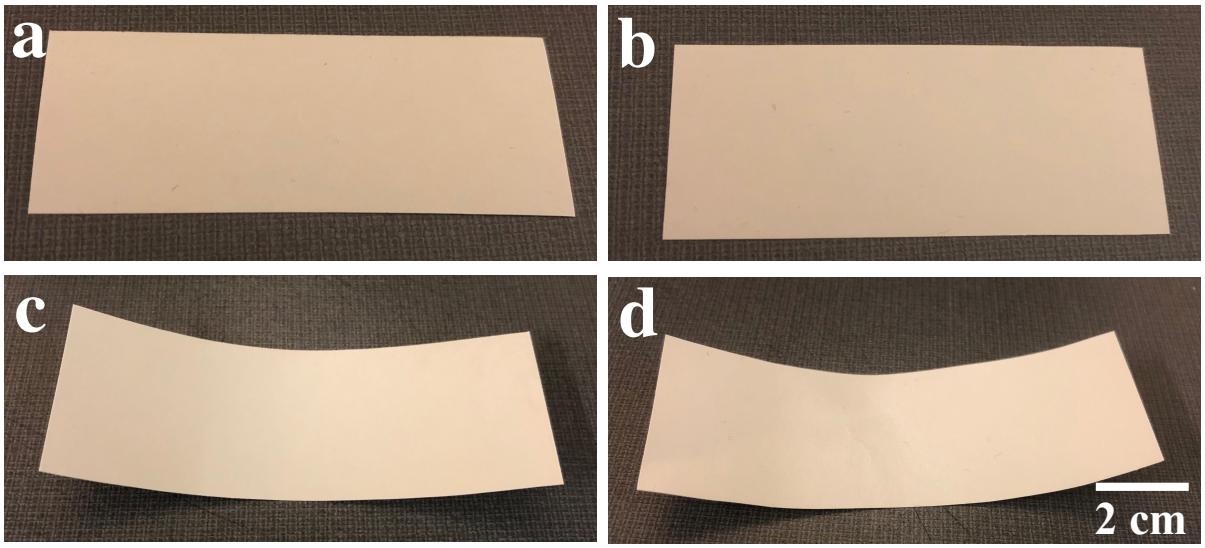

Figure S5. (a) Pristine RL3; (b) RL3 treated by vapor deposition of chlorosilane molecules. RL3 immersed in (c) ethanol and (d) IPA for 10 min, following by room temperature drying.

Thickness measurement of liquid-like PDMS brushes

The thickness of the liquid-like PDMS layer was measured by collecting the variable-angle spectroscopic ellipsometry (VASE) spectra using an M-2000 V spectroscopic ellipsometer (J.A. Woollam Co. Inc., Lincoln, NE) at 50°, 60°, and 70° at wavelengths from 480 to 700 nm with an M-2000 50 W quartz tungsten halogen light source. A three-layer (Si/SiO2/Polymer) Cauchy model was used for fitting the data. The 5 min vapor-deposition resulted in a PDMS brush of ≈ 3.1 nm thickness.