

Supporting Information for

A Fluffy All-Siloxane Bottlebrush Architecture for Liquid-like Slippery Surfaces

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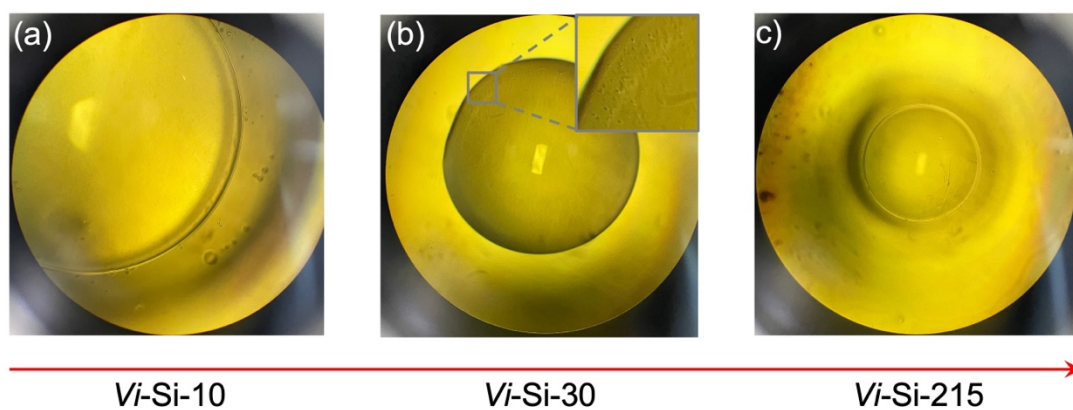


Fig. S1 Optical microscope images of *in-situ* condensation transformation of a DMVS silane drop during the drying process: (a) 10 min, (b) 30 min, (c) 215 min, at the glass, substrates with a total magnification of 200x (20x objective lens, 10x eyepiece lens).

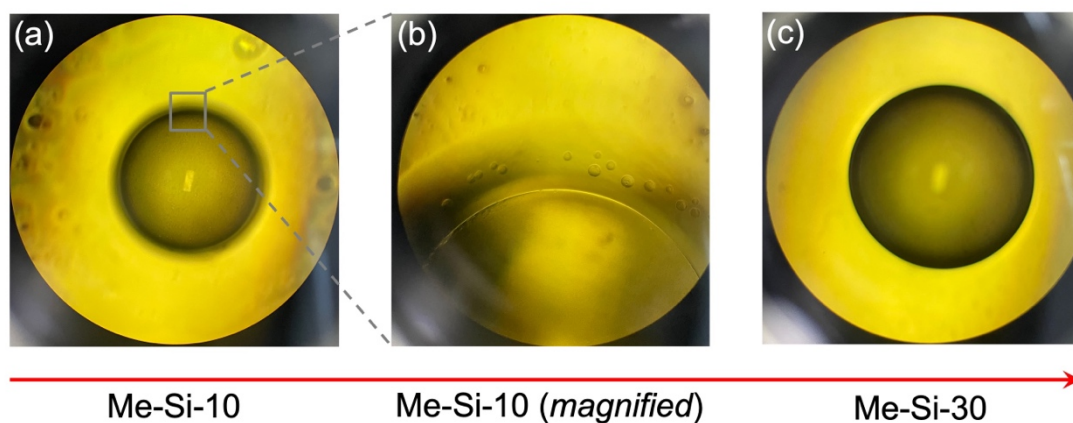


Fig. S2 Optical microscope images of *in-situ* condensation transformation of a DMS silane drop during the drying process: (a) 10 min, (b) magnified from (a), (c) 30 min, at the glass substrates with a total magnification of 200x (20x objective lens, 10x eyepiece lens).

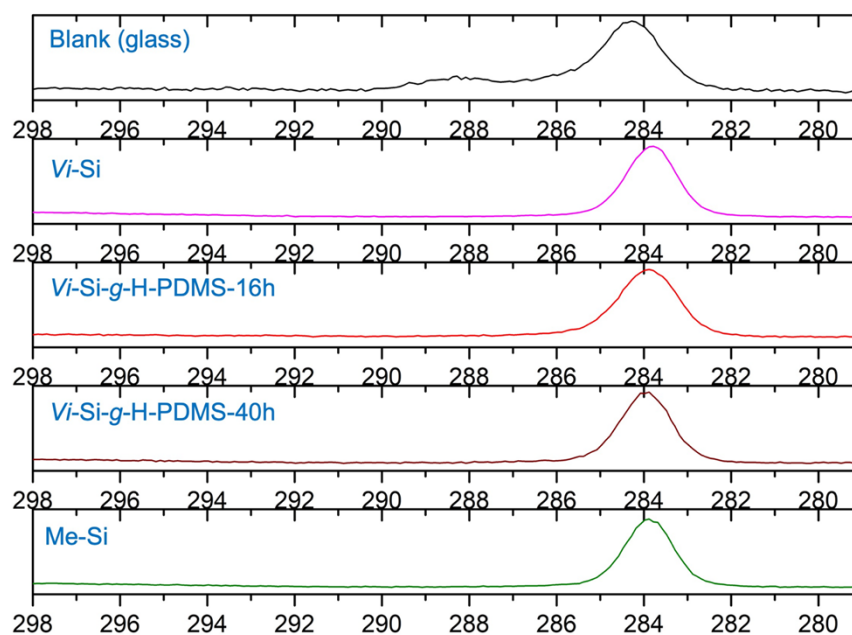


Fig. S3 XPS C 1s spectra of the bottlebrush surfaces prepared before (denoted as *Vi-Si*) and after grafting the side chain molecules mono-hydride terminated polydimethylsiloxane for 16h or 40h as the second step (denoted as *Vi-Si-g-H-PDMS-16h* or *40h*), with blank glass and Me-Si string-grafted surfaces for comparison.

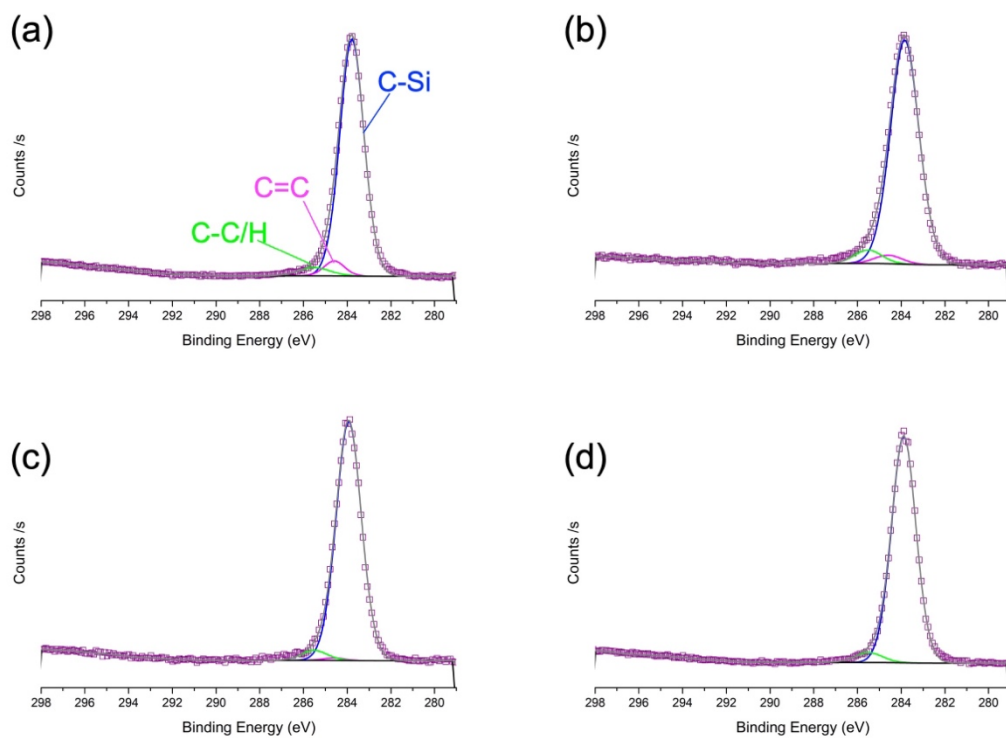


Fig. S4 High-resolution XPS C 1s spectra of the bottlebrush surfaces prepared (a) before (denoted as *Vi*-Si) and after grafting the side chain molecules mono-hydride terminated polydimethylsiloxane for (b) 16h or (c) 40h as the second step (denoted as *Vi*-Si-g-H-PDMS-16h or 40h), with (d) Me-Si string-grafted surfaces for comparison.

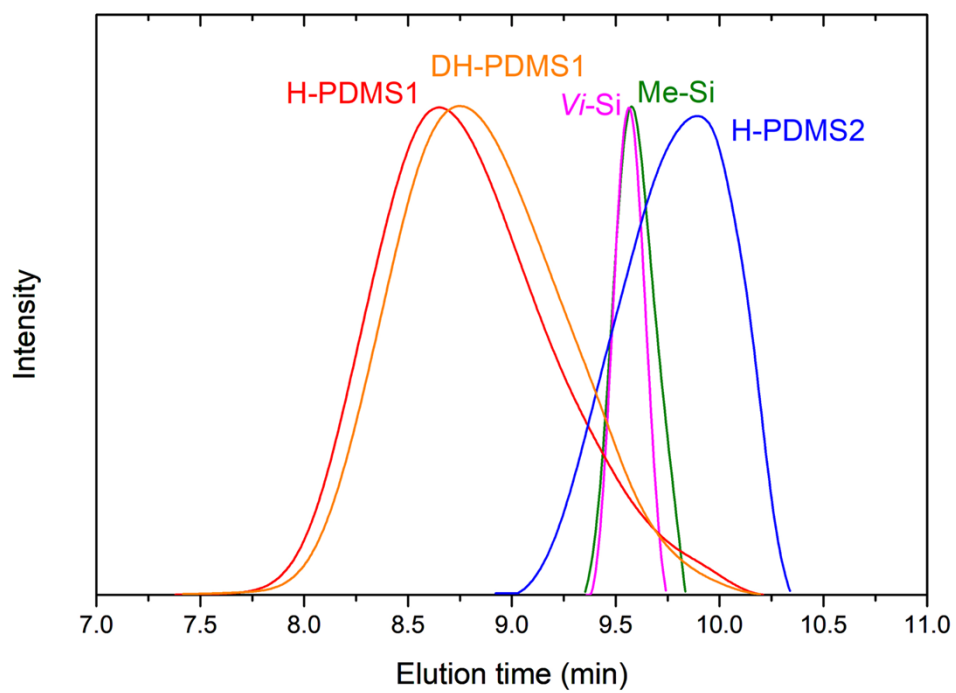


Fig. S5 GPC elution profiles of *Vi*-Si, Me-Si, H-PDMS1, H-PDMS2 and DH-PDMS1.

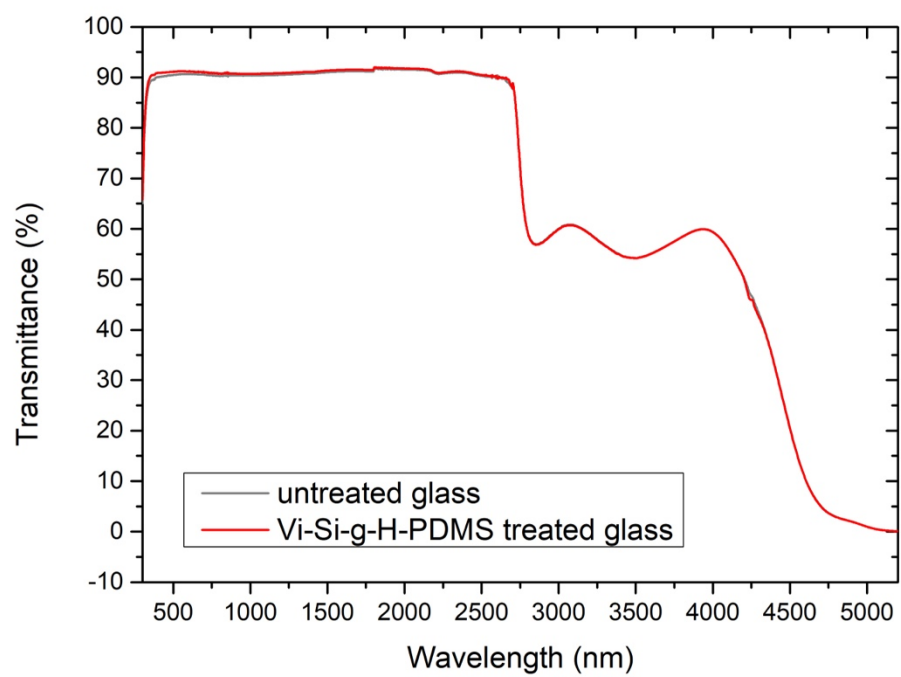


Fig. S6 Optical transmittance of the untreated glass (grey) and *Vi*-Si-g-H-PDMS glass (red) in the visible and infrared range.

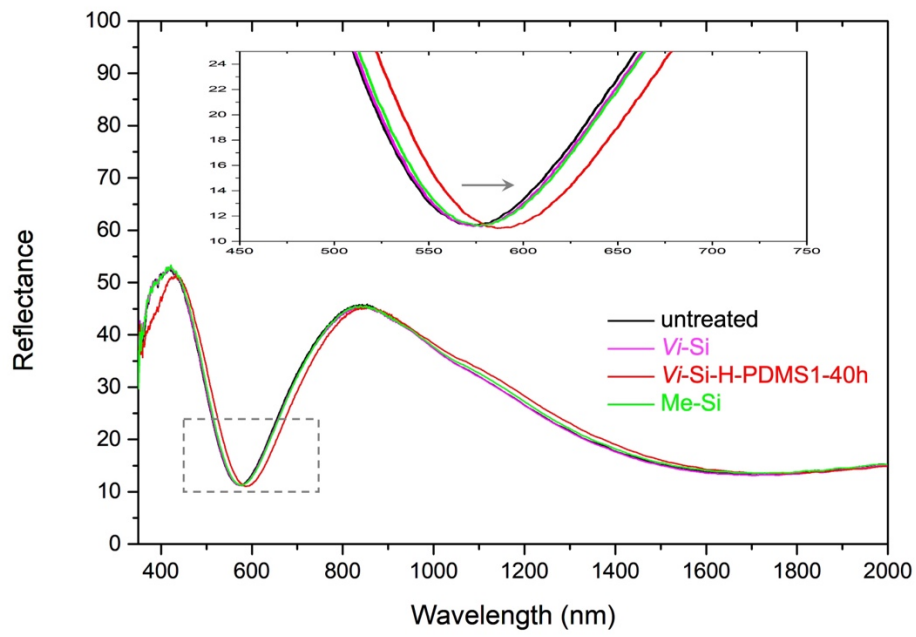


Fig. S7 Reflectance spectra of *p*-type silicon wafer capped with a 300 nm silicon dioxide (SiO₂) layer, after different surface treatment.

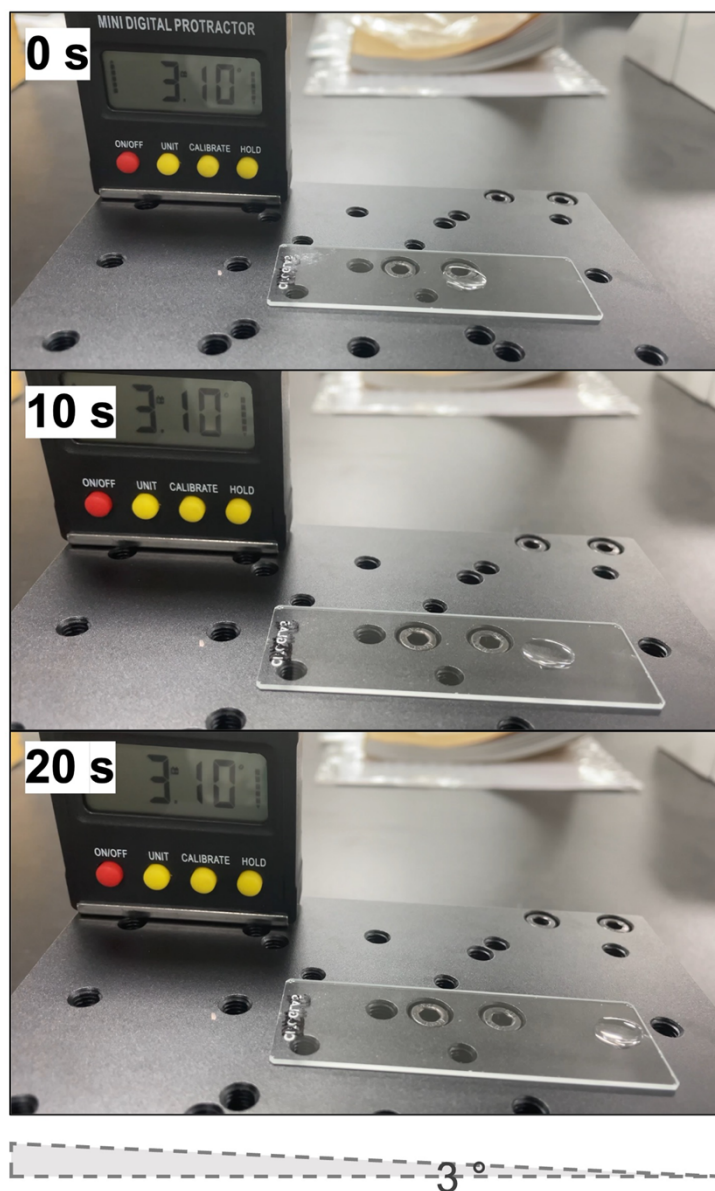


Fig. S8 Time-sequence images of a $\sim 20 \mu\text{L}$ droplet on a *Vi-Si-g-H-PDMS* surface with a titled stage of 3° (Probing liquid: cyclohexane).