

Electronic Supplementary information for *Soft Matter*

Drag reduction on laser-patterned hierarchical superhydrophobic surfaces

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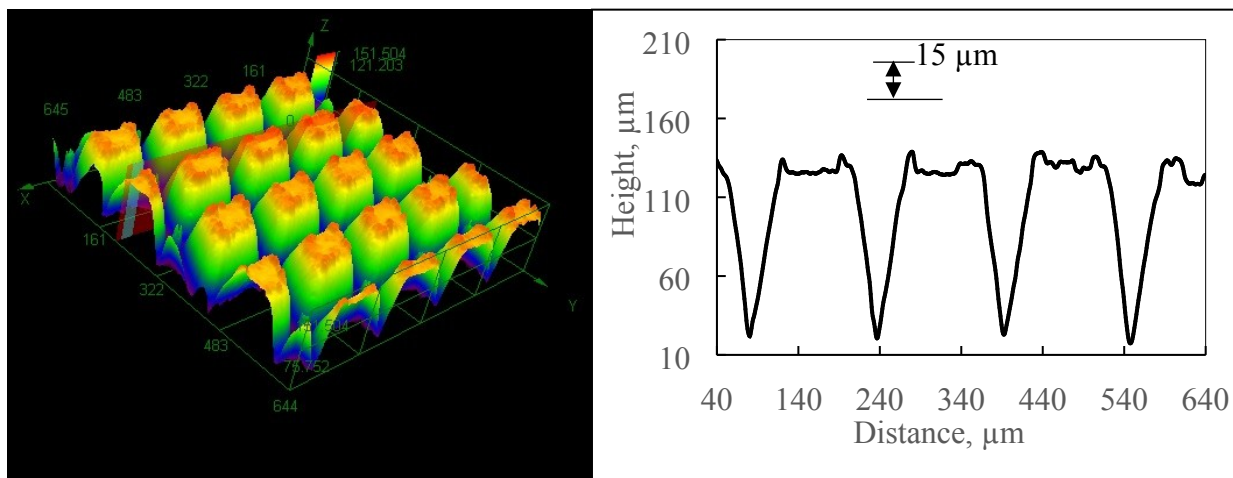


Figure S1. 3D confocal microscopy image of P6H sample: (a) the 3D profile and (b) a cross section of the height profile.

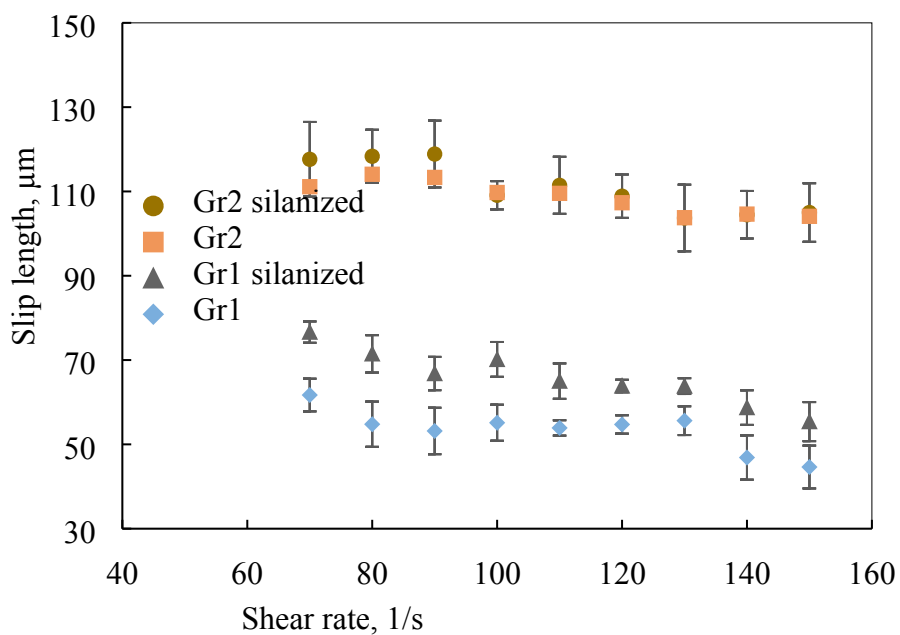


Figure S2. Slip lengths against shear rate for the silanized and the non-silanized Gr1 and Gr2 samples.

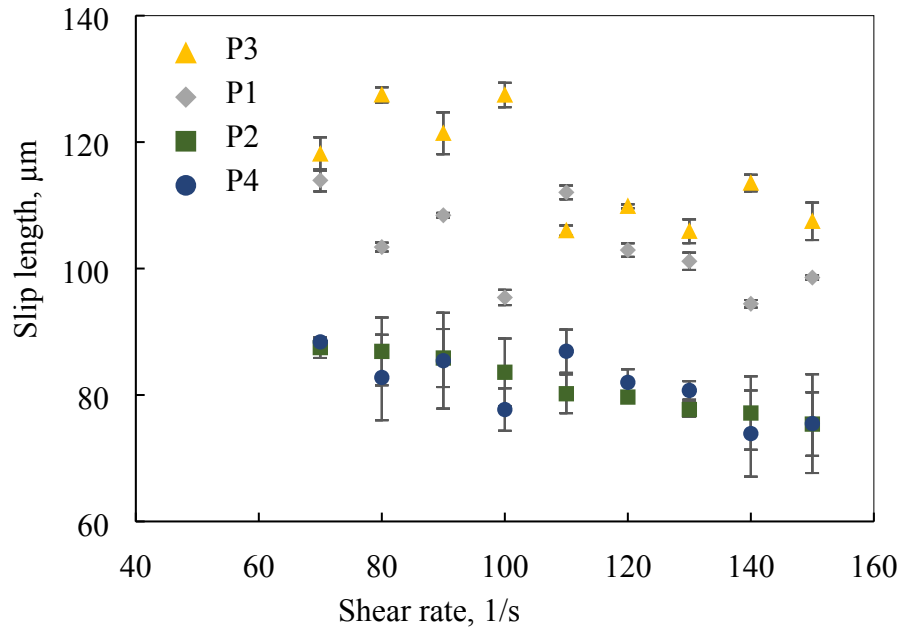


Figure S3. Slip lengths against shear rate for the non-silanzed P1, P2, P3, and P4 samples.

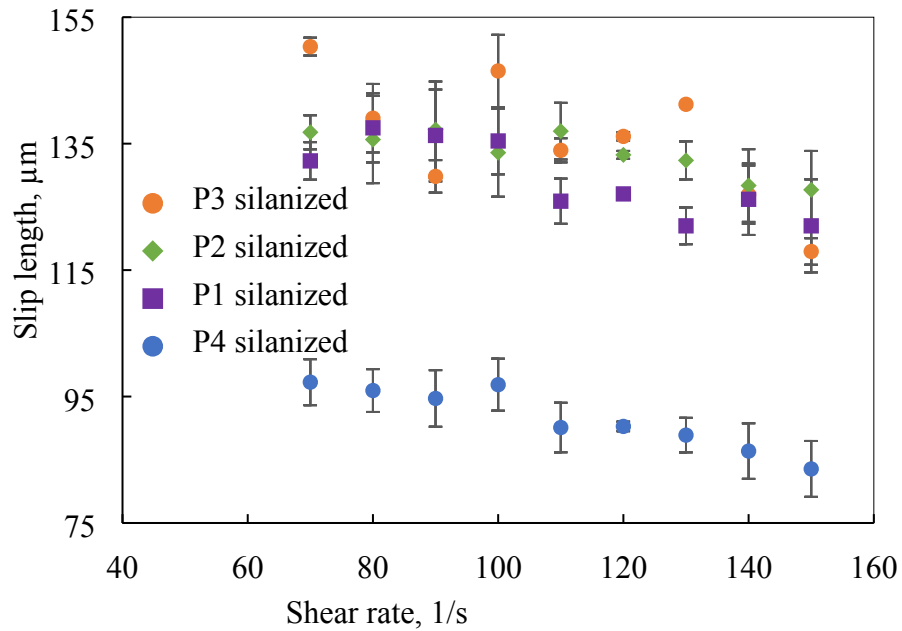


Figure S4. Slip lengths against shear rate for the silanzed P1, P2, P3, and P4 samples.

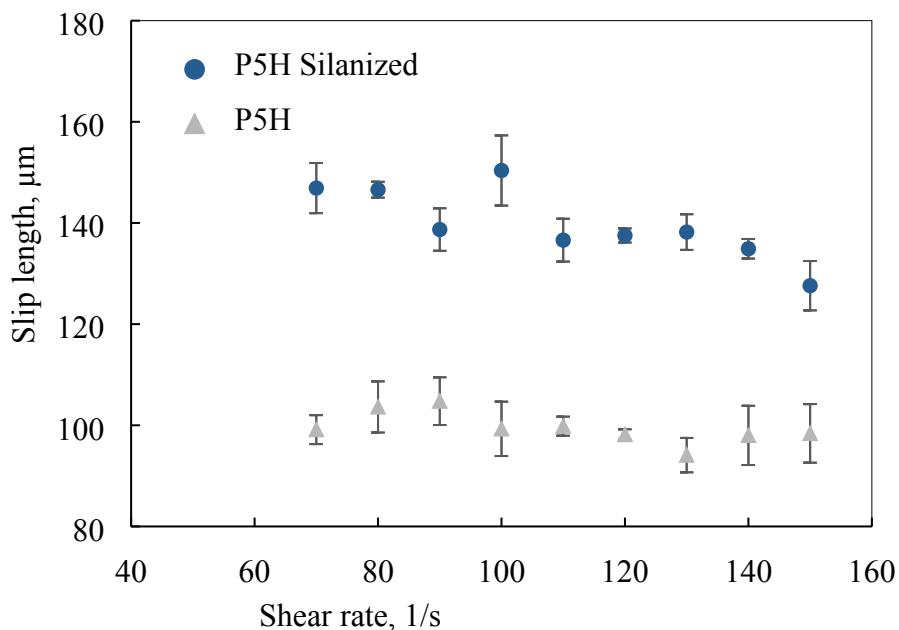


Figure S5. Slip lengths against shear rate for the silanized and the non-silanized P5H samples.

Table S1. Comparison between the overall mean slip lengths and the mean slip lengths at 110 s⁻¹ shear rate for all 8 samples along with the parameters of a statistical analysis.

Samples	Slip length (μm)		Each pair student's t-test	
	Overall mean	at 100 s ⁻¹ shear rate	t (38)	p
P1	129 ± 2	126 ± 4	0.644	0.524
P2	134 ± 2	137 ± 4	0.652	0.518
P3	136 ± 2	134 ± 2	-0.318	0.752
P4	92 ± 1	90 ± 4	-0.345	0.732
P5H	140 ± 2	137 ± 4	-0.602	0.551
P6H	113 ± 2	112 ± 4	-0.133	0.895
Gr1	66 ± 2	65 ± 4	-0.162	0.872
Gr2	111 ± 2	112 ± 7	0.089	0.929

Table S2. Comparison between the slip lengths obtained on the silanized and the non-silanized samples. Relevant parameters of a statistical analysis for finding the significant differences between the silanized and the non-silanized samples are included.

Samples	Slip length (μm)		Each pair student's t-test	
	Non-silanized	Silanized	t (6)	p
P1	112 \pm 1	126 \pm 4	3.705	0.0100
P2	80 \pm 3	137 \pm 4	10.458	<0.0001
P3	106 \pm 1	134 \pm 2	13.459	<0.0001
P4	87 \pm 3	90 \pm 4	0.610	0.5641
P5H	100 \pm 2	137 \pm 4	7.935	0.0002
Gr1	54 \pm 2	65 \pm 4	2.429	0.0512
Gr2	110 \pm 3	112 \pm 7	0.262	0.8020

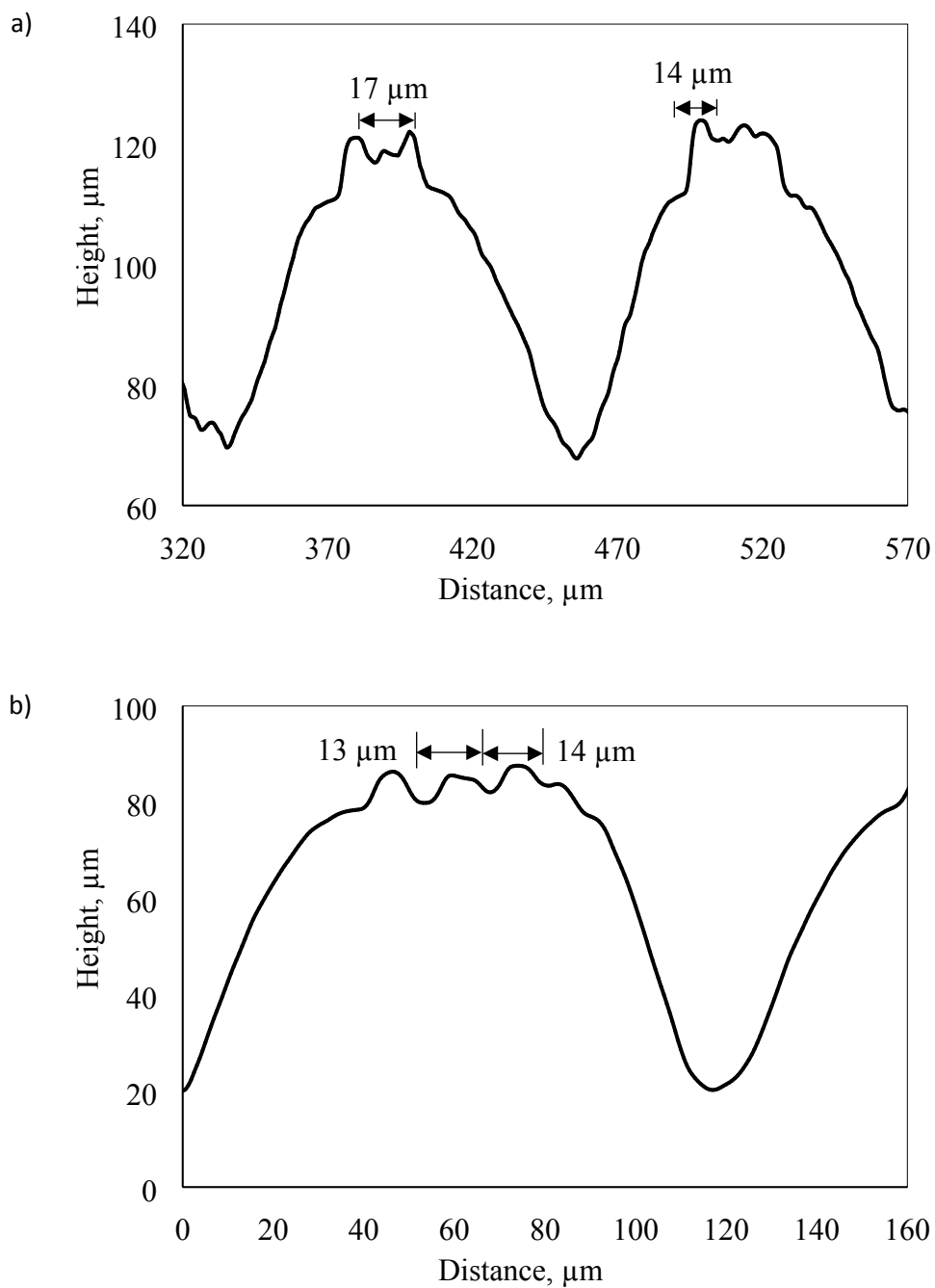


Figure S6. Profilometer data for sample P3 at (a) Longitudinal, and (b) transverse cross sections. The distances between micro-columns in longitudinal and transverse sections are almost alike, thus it leads to the assumption of a square pillar arrangement.