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Figure S1. Triboelectric affinity series



Figure S2. FE-SEM image of the PDMS-CNT film with Short CNTs (CNT 4 wt%, etching for 200 s)



We repeated the same experiments using shorter CNTs of  $0.5-2 \mu m$ . The short CNTs were harder to expose against the PDMS layer than the long CNTs. Moreover, they were easily destroyed by dry etching. Therefore, measuring the short CNT structures in the SEM images was difficult. We used a long CNT in the PDMS because the short CNT was less effective.

Figure S3. Detail results of EDS about the PDMS-CNT film. (a) No etching. (b) Etching for 60 s.

## (a)

Electron Image 4		Pt • • • • • • • • • • • •		<b>Spectrum 4</b>
	Element	Wt%	Wt% Sigma	Atomic %
	С	46.13	0.58	61.87
<sup>25μm</sup>	0	16.70	0.33	16.81
	Si	37.17	0.41	21.32
	Total:	100.00		100.00

(b)



25µm

	Pt 	Pt Pt Pt 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Spectrum 1  1 ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
Element	Wt%	Wt% Sigma	Atomic %
С	43.33	0.49	58.57
0	19.53	0.28	19.81
F	0.54	0.12	0.46
Si	36.60	0.33	21.16
Total:	100.00		100.00

Figure S4. FE-SEM images of the PDMS-CNT film at long exposed to plasma (CNT 4 wt%, Dry etching for 1000 s.) (a) x1000. (b) x50000.



