Supporting Information

High-performance PDMS-based triboelectric nanogenerator fabricated using surface-modified carbon nanotubes via pulsed laser ablation

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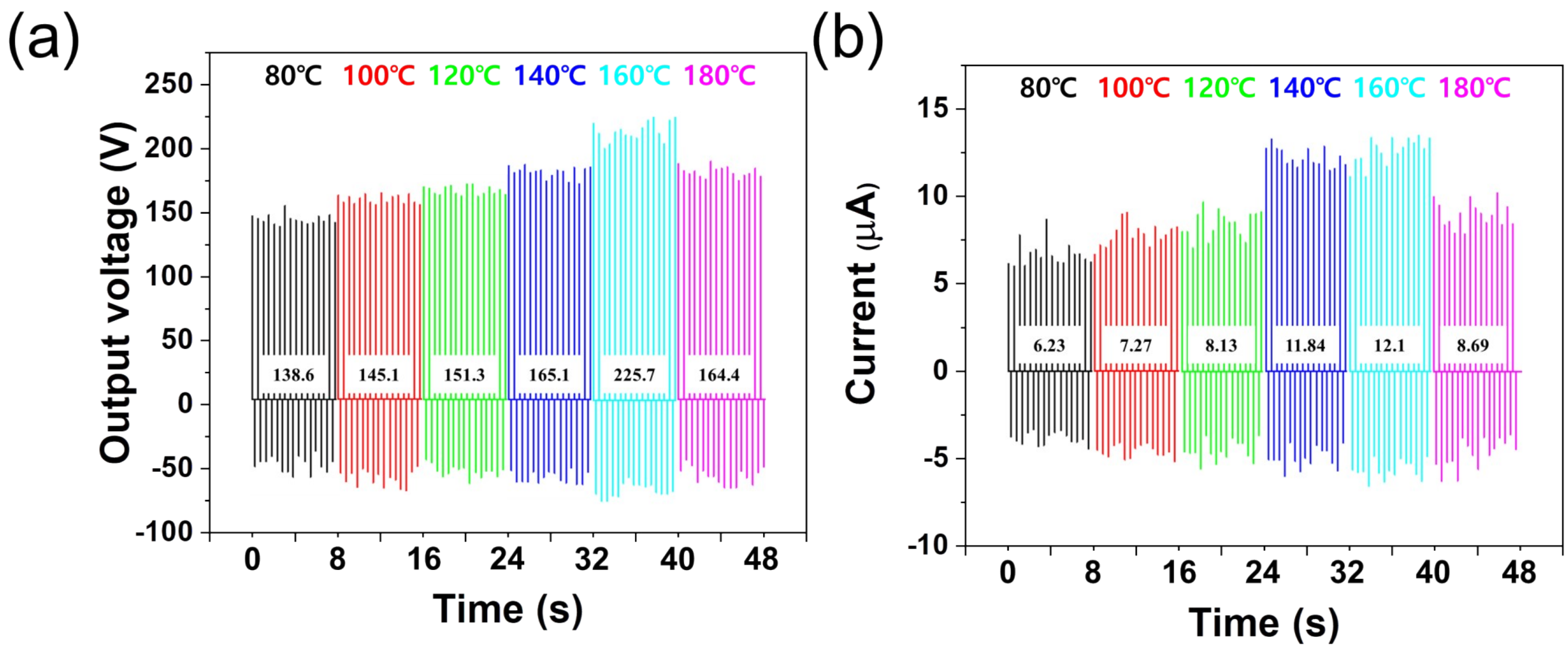

Fig. S1 The output voltage (a), and current (b) of the TENG prepared using pristine PDMS film with different curing temperature.

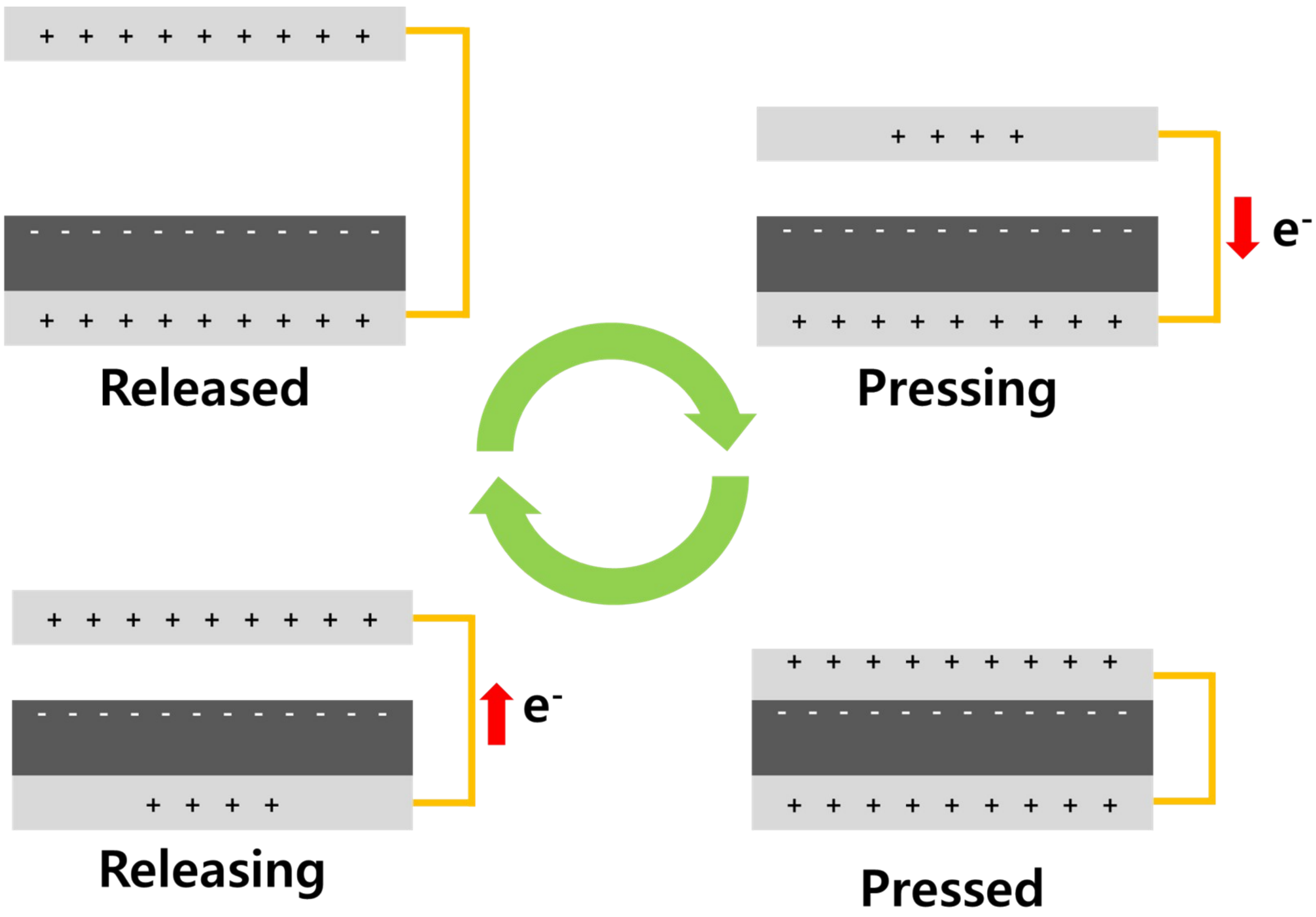

Fig. S2 The electricity generation process in a full cycle of the TENG under external force.

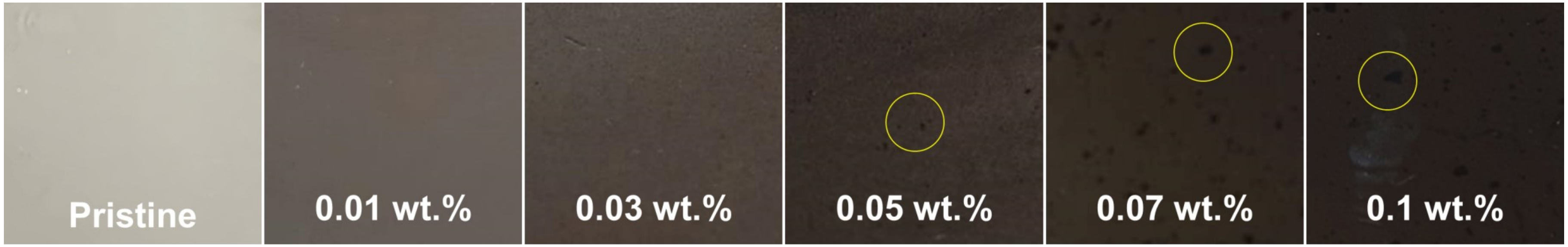

Fig. S3 The digital images of the composite film with different CNT concentration. (Yellow circle is indicate aggregation CNT.)

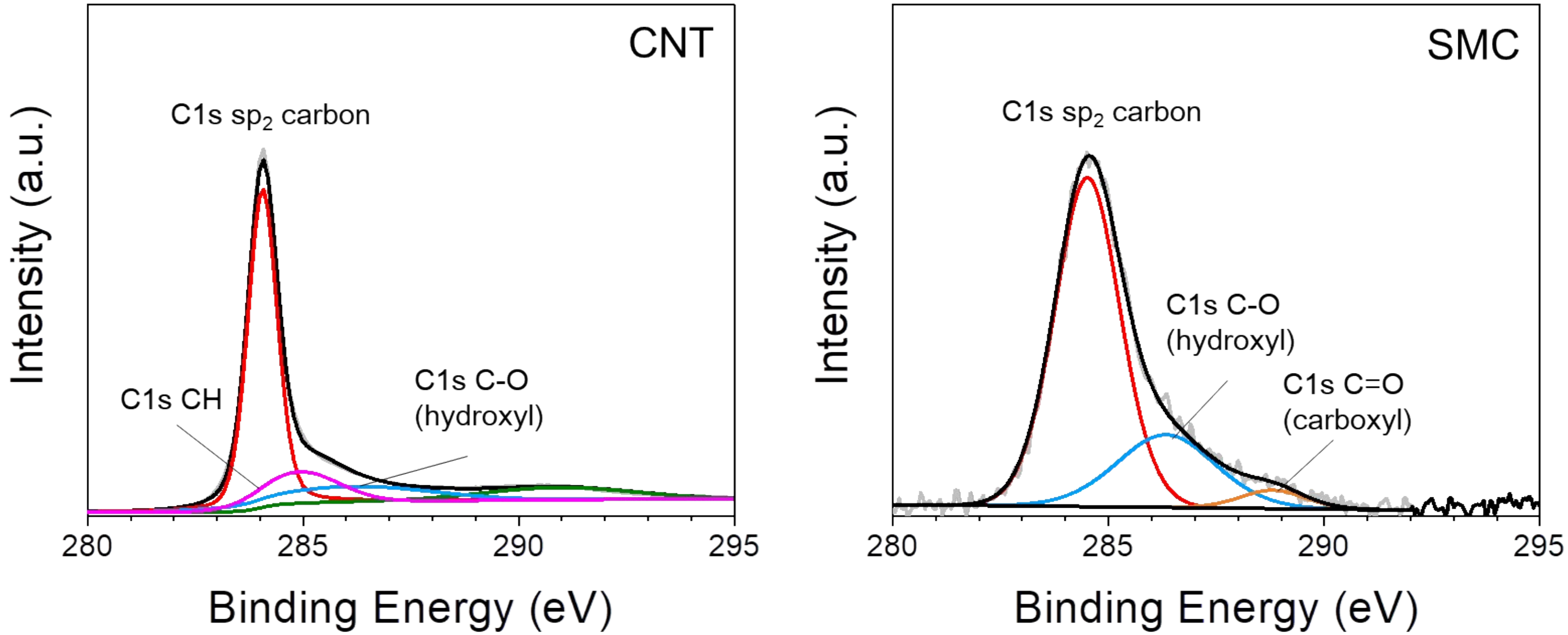

Fig. S4 XPS spectra of P-CNT and SMC.

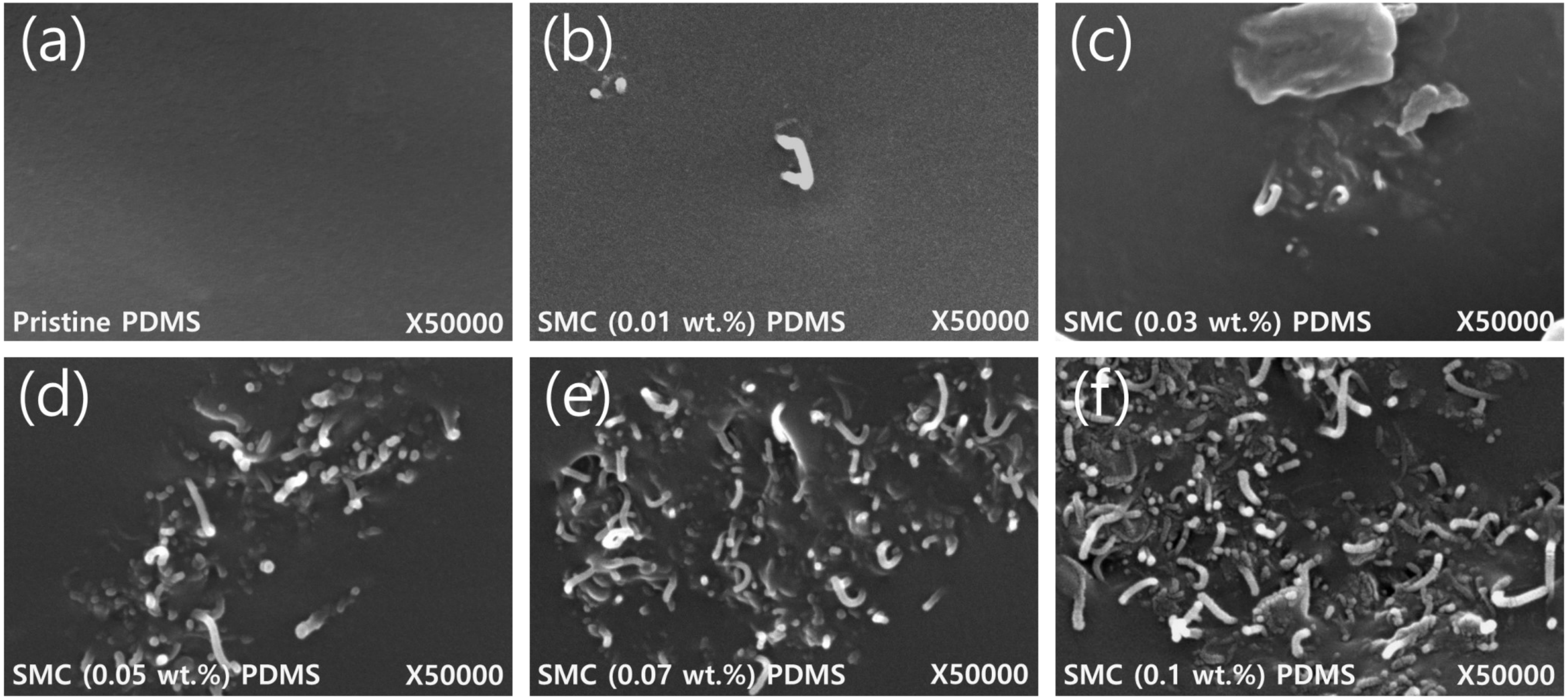

Fig. S5 The SEM images of the SMC-PDMS with different concentration.

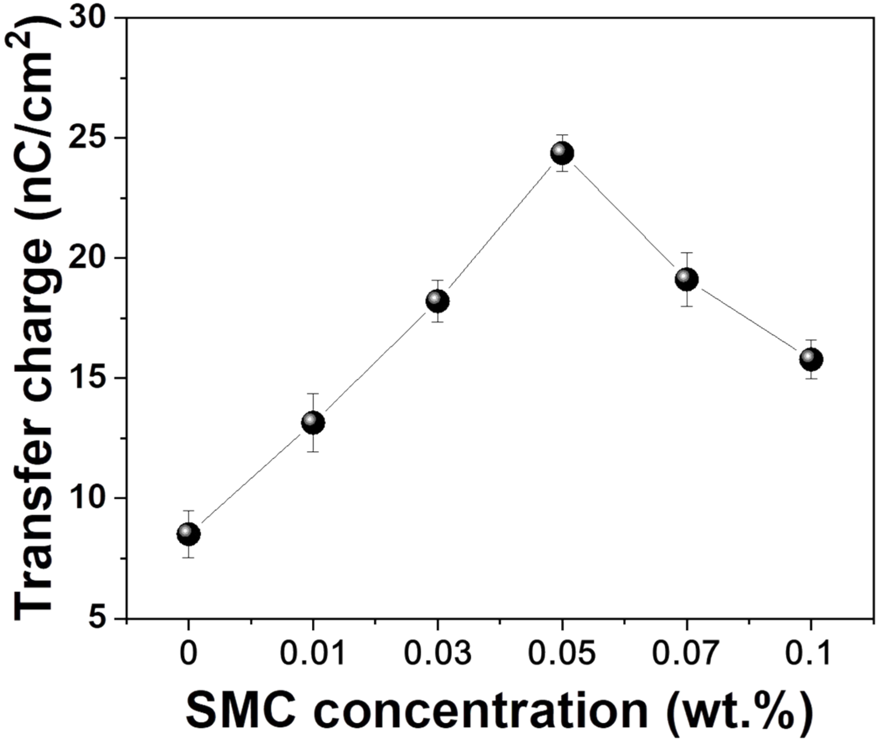

Fig. S6 Transfer charge of the SMC-PDMS at different SMC concentrations.

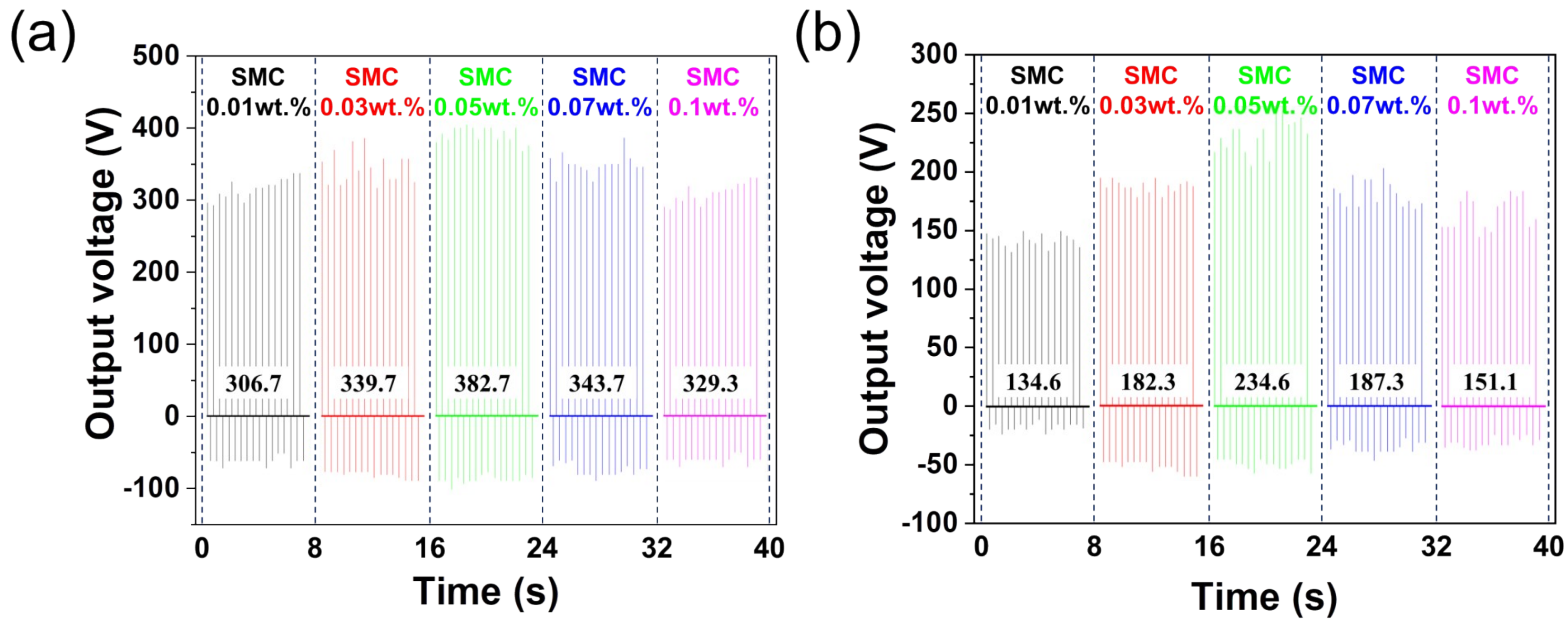

Fig. S7 The output voltage of the TENG prepared using the SMC-PDMS at interlayer distance of (a) 2 mm, (b) 4 mm.

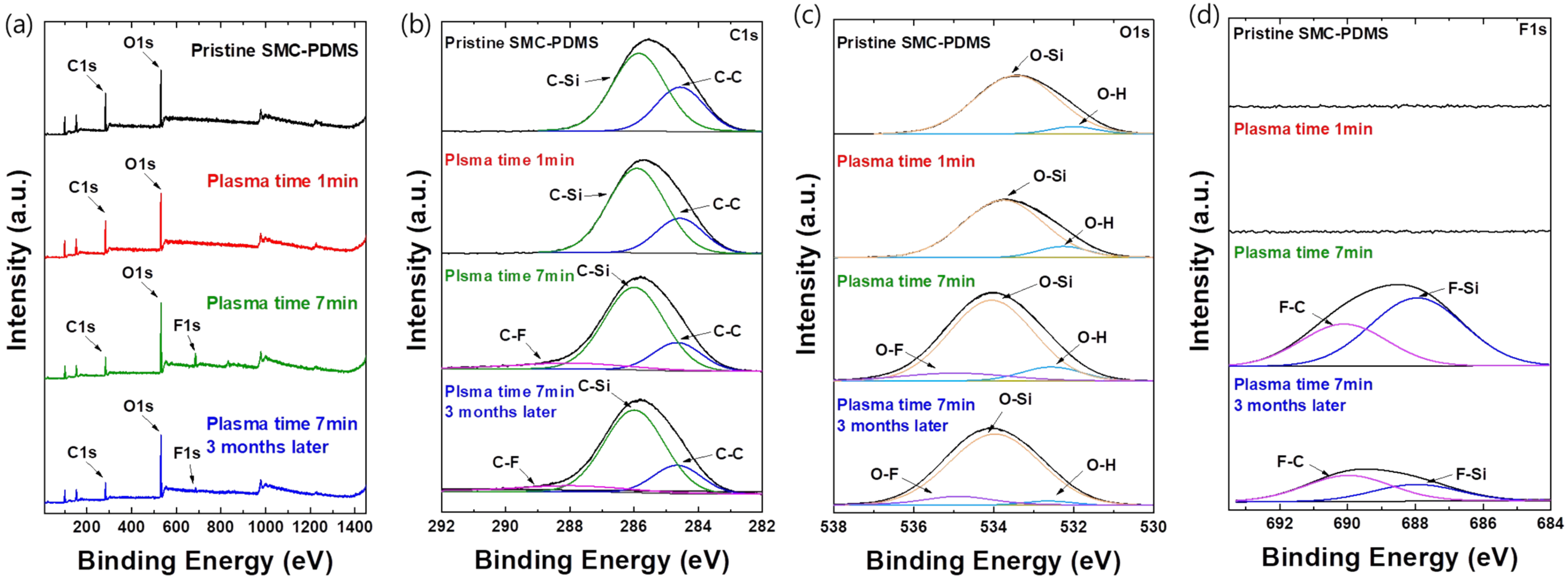

Fig. S8 The XPS spectra of plasma-treated SMC-PDMS with different process time. (a) Full scan-spectrum, (b) C1s, (c) O1s and (d) F1s.

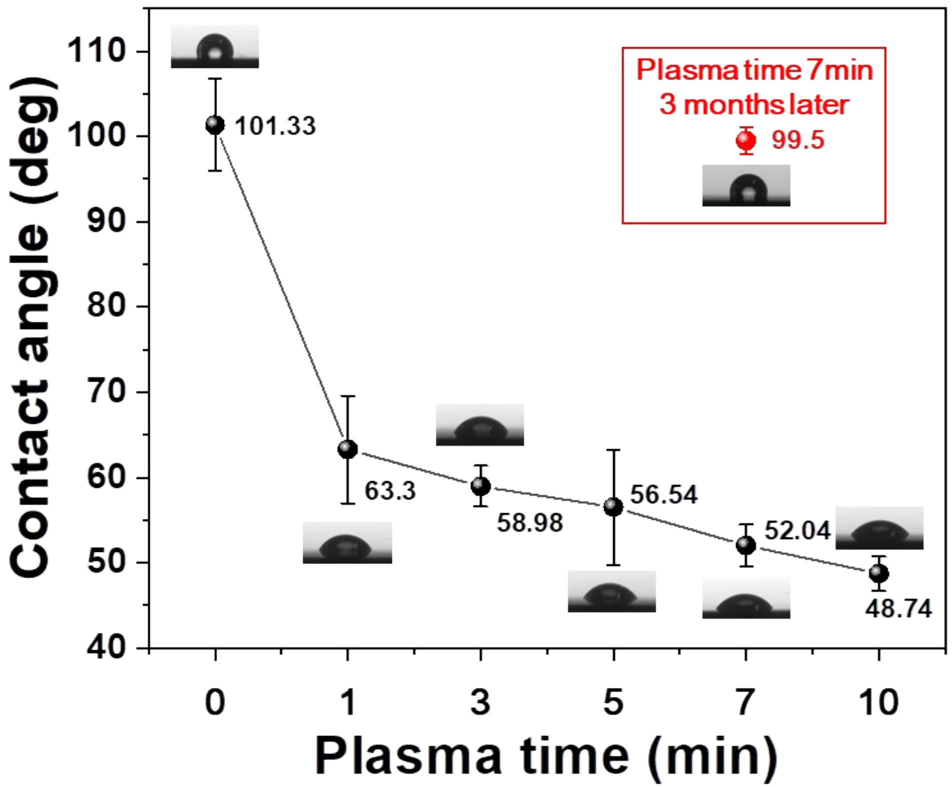

Fig. S9 Static contact angles of water drops on flat SMC-PDMS films in the various plasma treatment times.

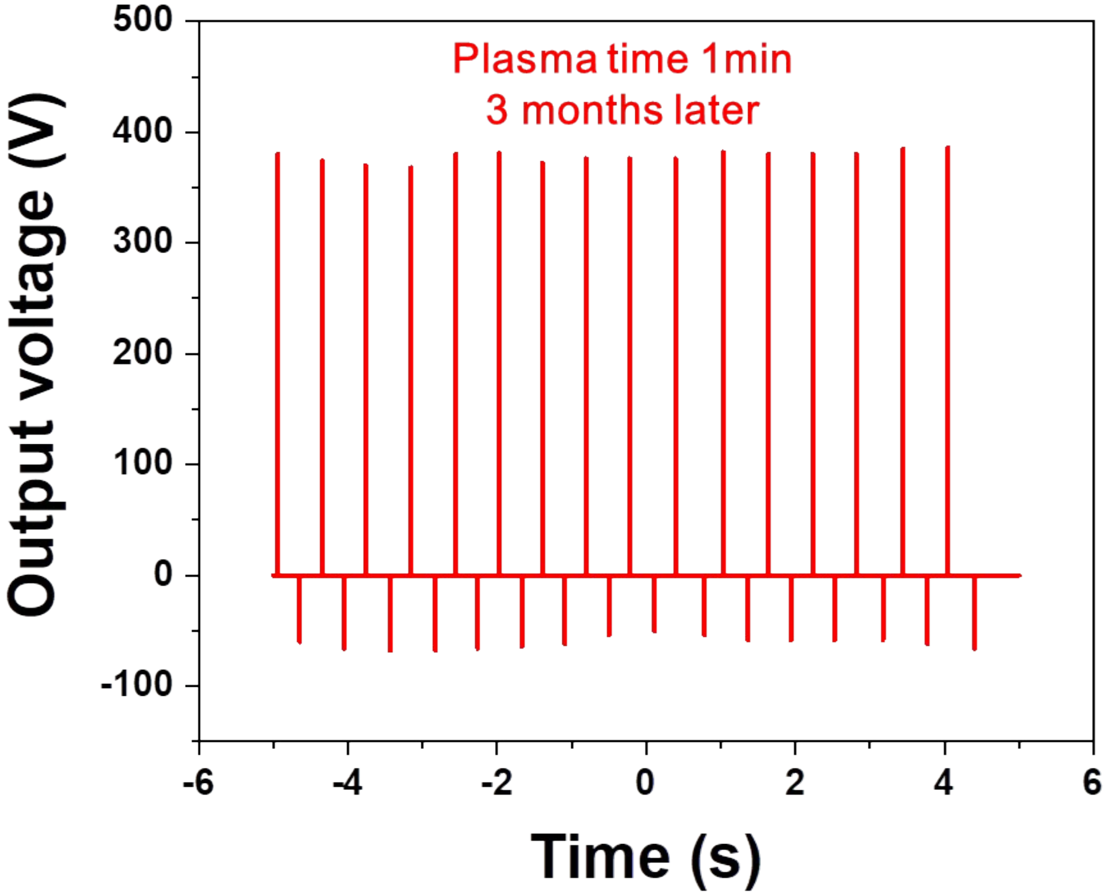

Fig. S10 The output voltages of plasma treated SMC-PDMS 3 month later

Triboelectric Materials	Counter Materials	Preparation methods	Sample size	Outputs			Reference
				Voltage	Current density	Power	
PDMS	Al foil	PDMS mixed SMC, plasma treatment	2 x 2 cm^2	414 V	10.01 $\mu A/cm^2$	7.69 W/m^2	This work
PDMS	Al foil	PDMS mixed GPs(3% mass ratio)	2 x 2 cm^2	286 V	6.7 $\mu A/cm^2$	3.7 W/m^2	1
PDMS	Al foil	PDMS mixed TiO_{2-x}	3 x 3 cm^2	180 V	0.91 $\mu A/cm^2$	1.84 W/m^2	2
PDMS	Cu	Porous PDMS, Mixed NPs(SiO_2,TiO_2,$BaTiO_3$,$SrTiO_3$)	2 x 2 cm^2	338 V	9.06 $\mu A/cm^2$	6.47 W/m^2	3
PDMS	ITO	Aligned CNT on PDMS film	3 x 3 cm^2	150 V	6 $\mu A/cm^2$	4.62 W/m^2	4
PDMS	Cellulose	Cellulose mixed with $BaTiO_3$	2 x 2 cm^2	88 V	2.1 $\mu A/cm^2$	0.35 W/m^2	5
PDMS	PET	PDMS mixed FDTS	2 x 2 cm^2	138 V	2.3 $\mu A/cm^2$	0.73 W/m^2	6
PDMS	PTFE	PDMS Pyramid substrate	3.5 x 3.5 cm^2	275 V	0.78 $\mu A/cm^2$	0.82 W/m^2	7
PDMS	Al foil	Nanopillar-array architectured PDMS	2 x 2 cm^2	478 V	5.85 $\mu A/cm^2$	4.75 W/m^2	8

Table S1 Summary of TENGs performance with PDMS

Reference

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