sensors

MDPI

Supplementary information

Nano-Cracked Strain Sensor with High Sensitivity and Linearity by Controlling the Crack Arrangement

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Table S1. Comparison of sensing performance with other literatures.

Reference	Sensing materials / Substrate	Gauge Factor (<1% strain)	Linearity at 1% strain
1	Pt /PUA	<800	Nonlinear
2	CBs / Ecoflex	<0.1	Linear
3	Graphite / Ecoflex	26.9	Linear
4	AgNWs / PDMS ZnONWs	<0.1	Linear
5	CNTs-PEDOT:PSS / PU	<10	Linear
6	CBs / PDMS	<30	Linear
This work	Pt / PU	>5,000	Linear ($R^2 > 0.99$)

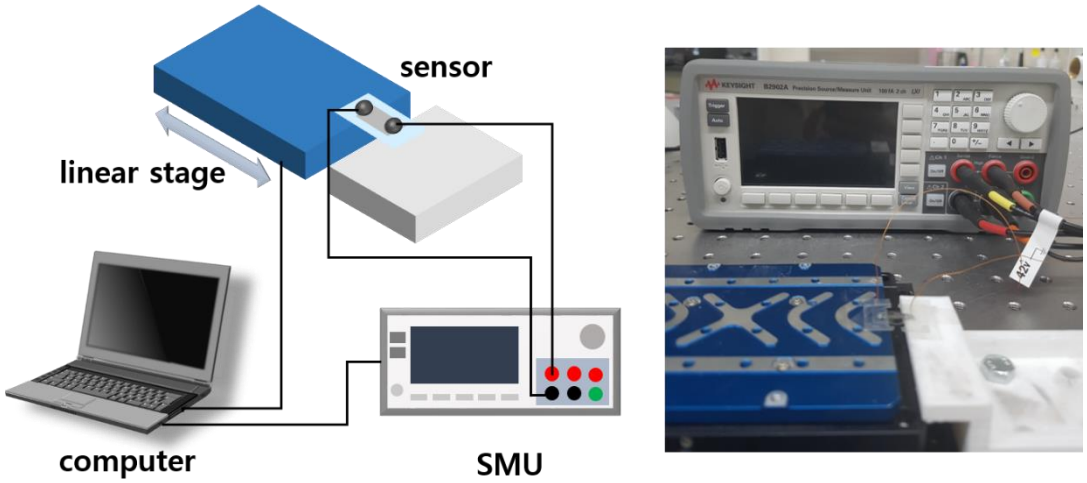

Figure S1. Experimental setup for strain sensor evaluation.

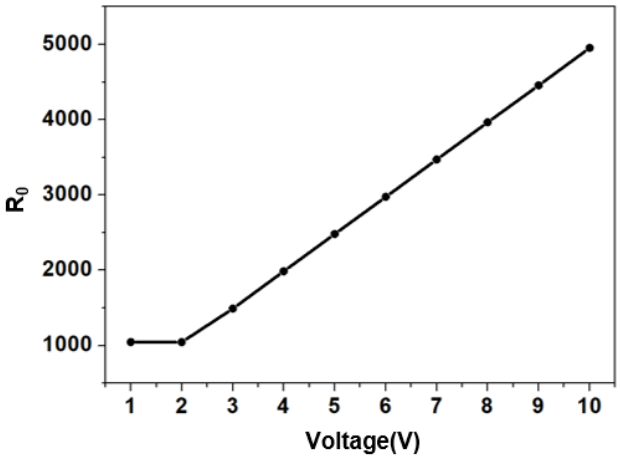

Figure S2. Initial resistance-voltage (R0-V) graph of crack-based strain sensor in 0 % strain.

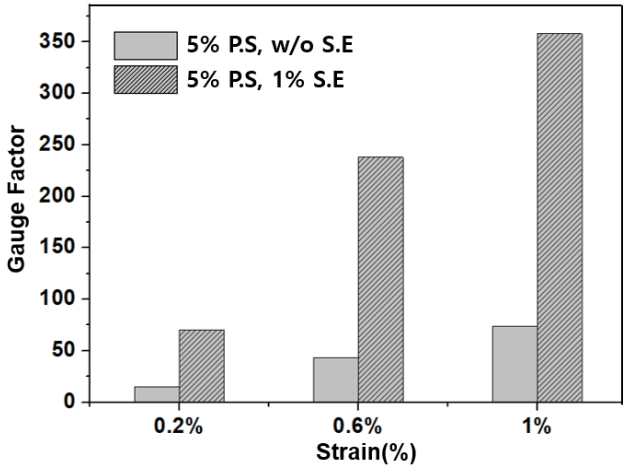

Figure S3. Gauge Factor difference between sensor with S.E. and without S.E. after 5% P.S.

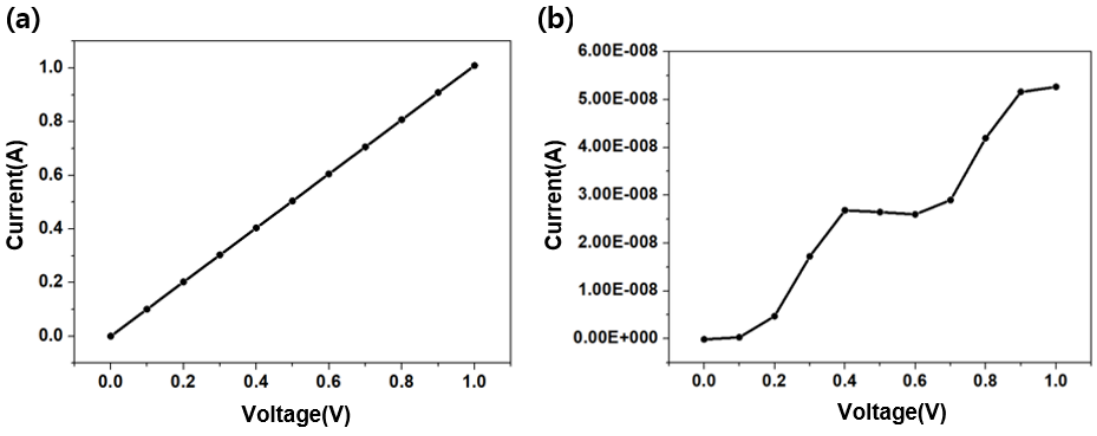

Figure S4. Current-Voltage (I-V) curve of crack-based sensor (**a**) current-voltage (I-V) curve of crack-based strain sensor at 0 % strain. (**b**) current-voltage (I-V) curve of crack-based strain sensor at 1 % strain.

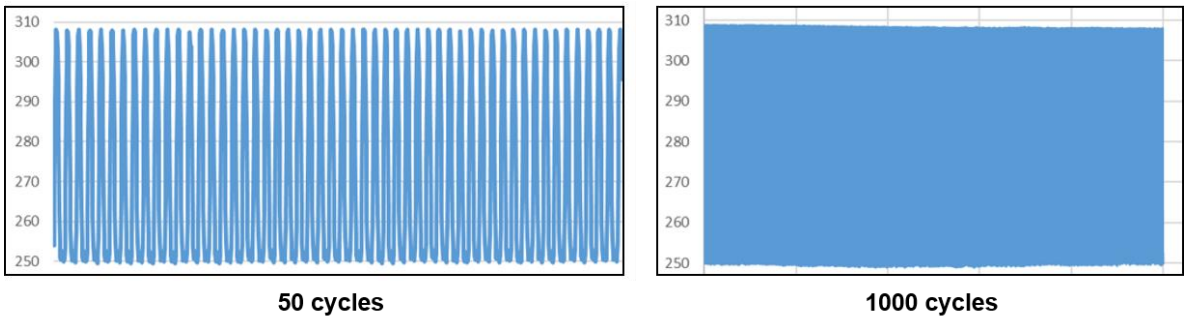

Figure S5. Cycle tests.

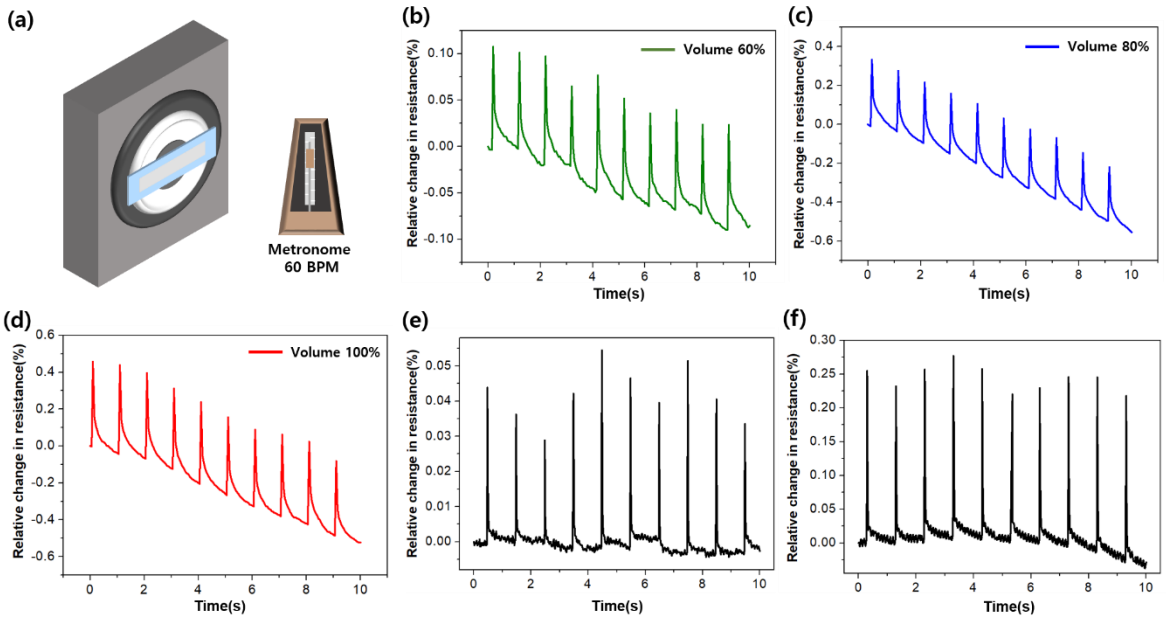

Figure S6. (**a**) Schematic of sensor attached on a speaker which generate 60 bpm metronome, (**b**-**d**) Relative change in resistance according to speaker volume, (**e**-f) Relative change in resistance when didn't do P.S, S.E and did P.S, S.E.

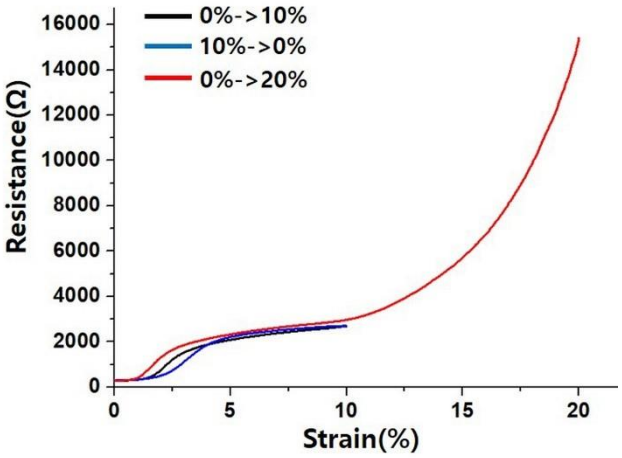

Figure S7. Mullins effect.

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