

1 Type of the Paper (Article)

2 **Piezoresistive Multi-Walled Carbon Nanotube/Epoxy**
 3 **Strain Sensor with Pattern Design**

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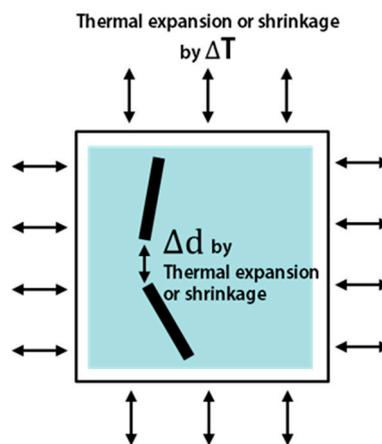
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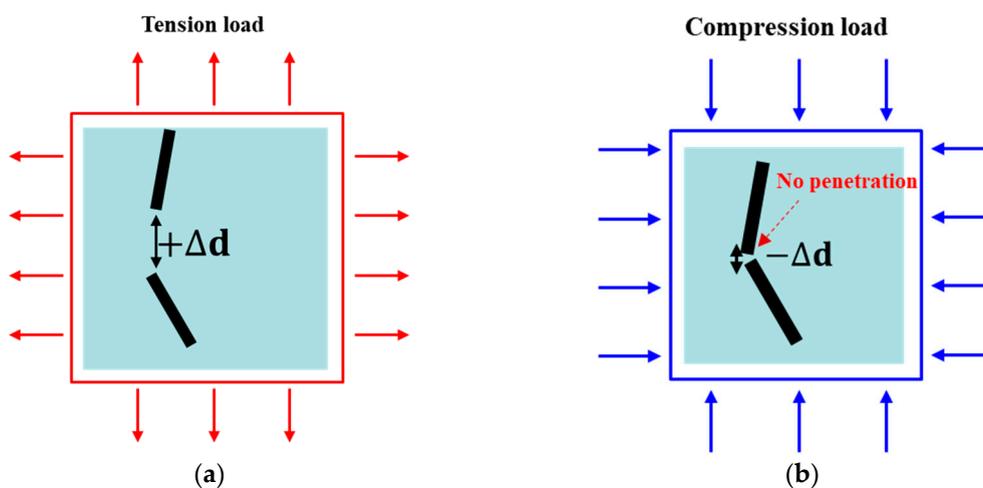
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12 † Mun-Young Hwang and Dae-Hyun Han contributed equally to this work.

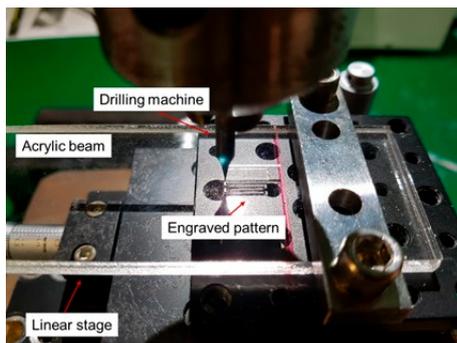
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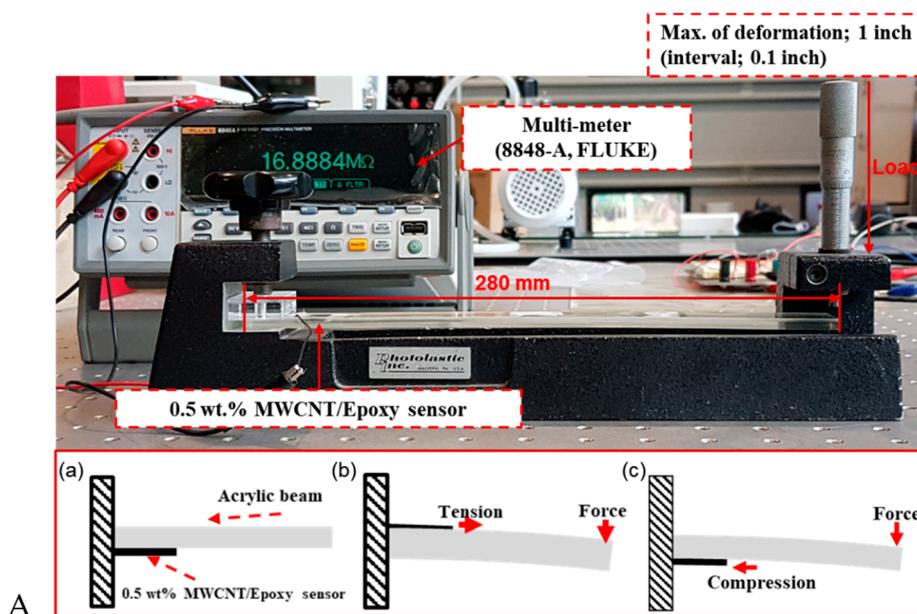
14 **Figure S1.** Variation in distance between particles due to thermal expansion or contraction of polymer
 15 according to temperature change.



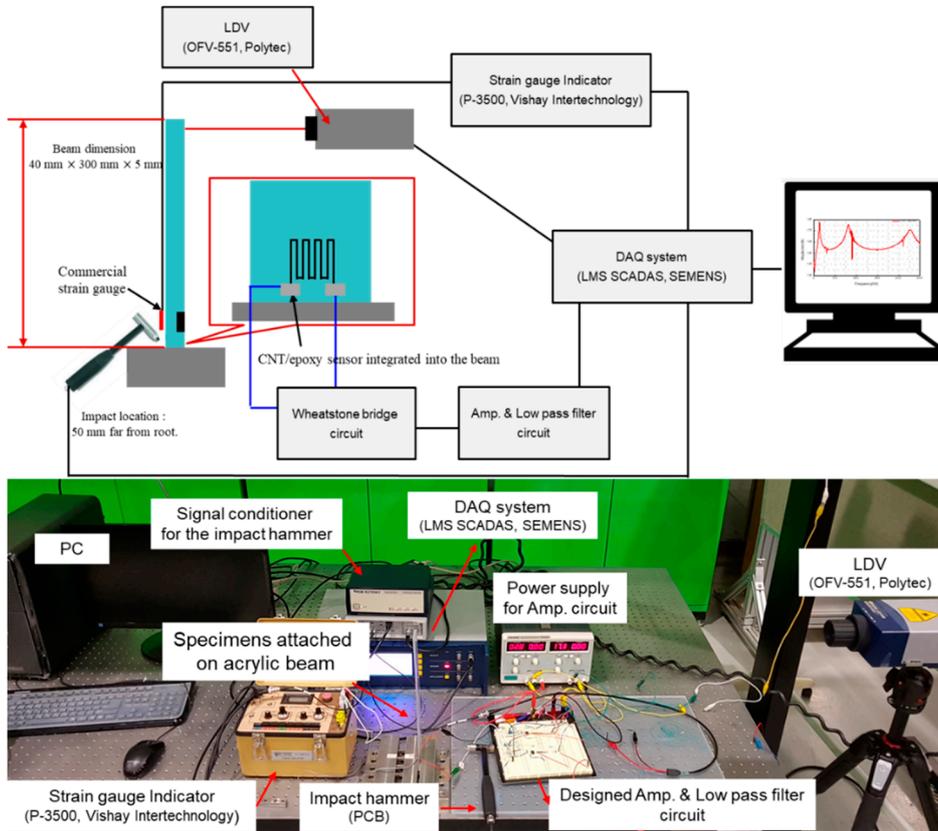
16 **Figure S2.** Operating mechanism of composite strain sensor by resistivity (a) under tension load and
 17 (b) compression.



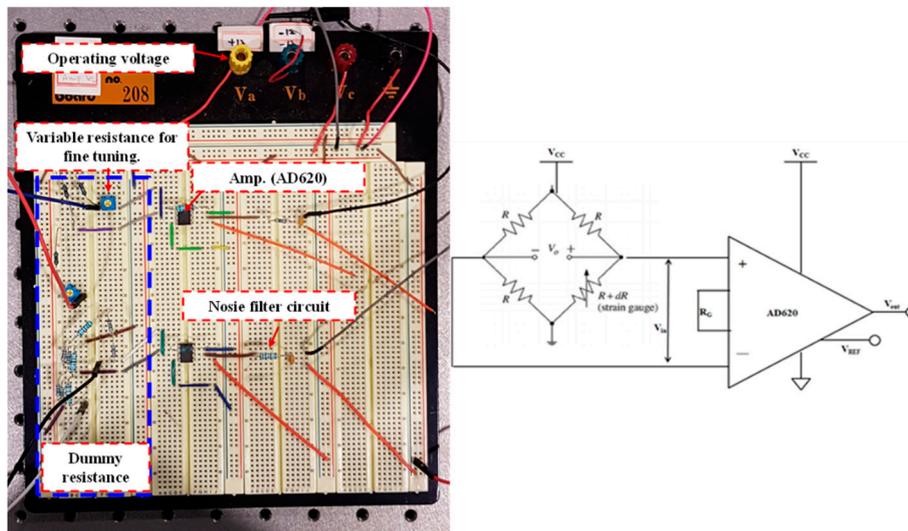
18 **Figure S3.** Engraved pattern made by drilling machine and linear stage for making constant pattern.



19 **Figure S4.** Resistance variation of MWCNT/epoxy composite strain sensor when deflection occurs at
 20 beam end: (a) steady state, (b) tension direction, and (c) compression direction.



21 **Figure S5.** Experimental setup for testing measurement frequency response of sensor under free
 22 vibration of acrylic beam.



23 **Figure S6.** Amplifier circuit by non-inverter amplification for signal processing and Wheatstone
 24 bridge circuit for stabilizing output voltage generated by sensor.