Electronic Supplementary Material (ESI) for Nanoscale Advances.

Highly Stretchable and Sensitive Strain Sensors with Ginkgo-Like Sandwiched Architectures

Supplementary Information

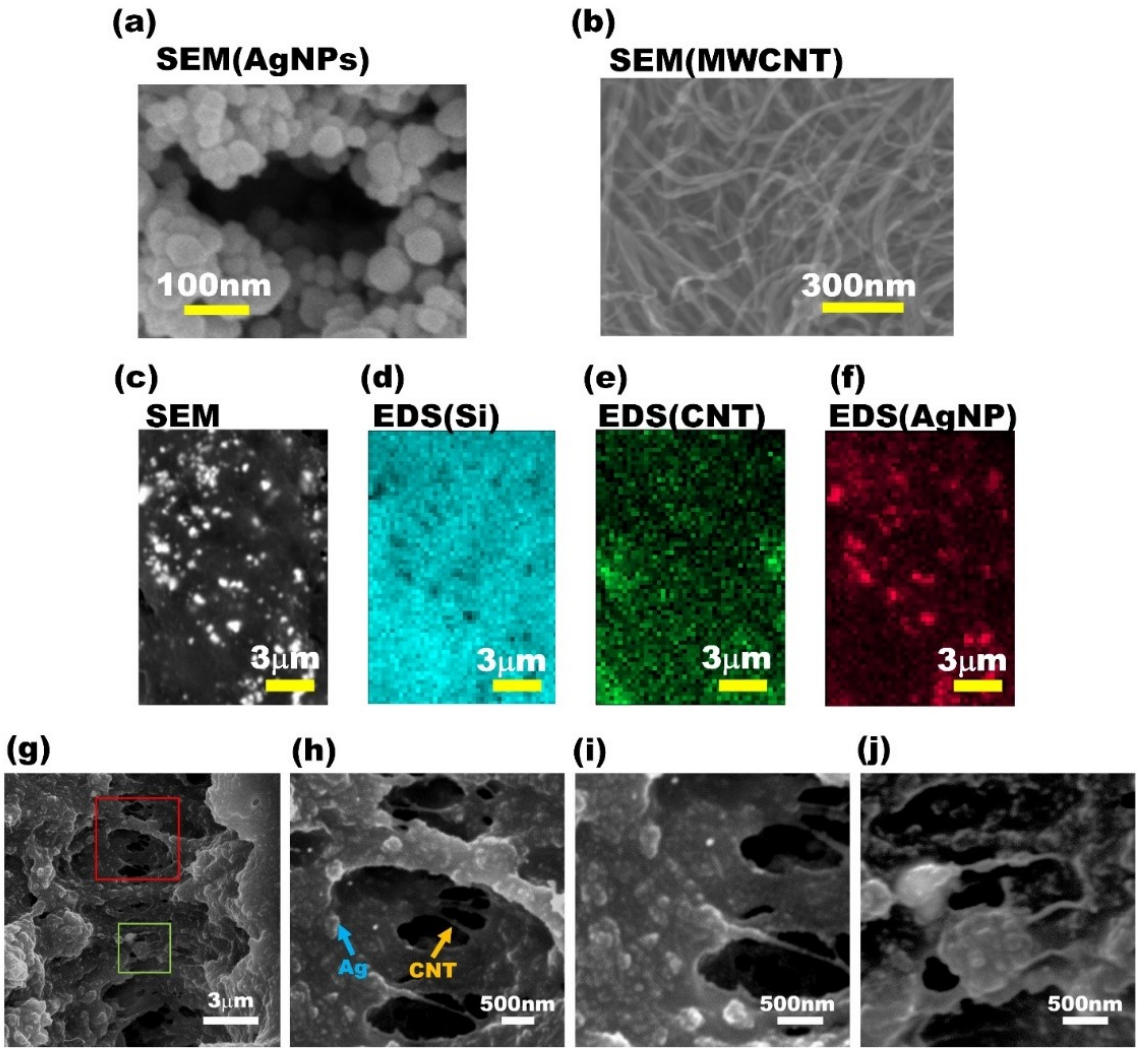

Figure.S1 SEM images. (a) Ag nanoparticles. (b) Multi-wall carbon nanotubes. (c) Nanocomposites and the EDS maps of (d) Si, (e) MWCNT and (f) Ag NPs. (g) SEM image of the schismatic area of the nanocomposites. (h)(i) A larger view of the red box in (g). (j) A larger view of the green box in (g).

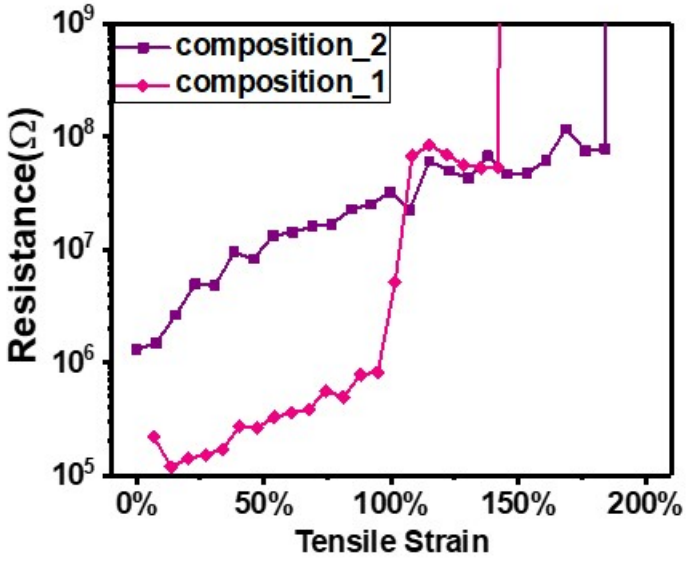

Figure.S2. Influence of composition on material properties.

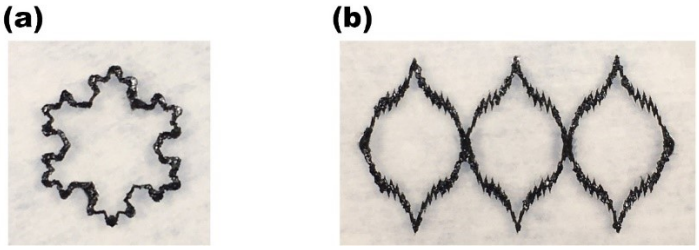

Figure.S3 Optical photos of samples with fractal pattern.(a) Koch curves. (b) Fold-Rhombus pattern.

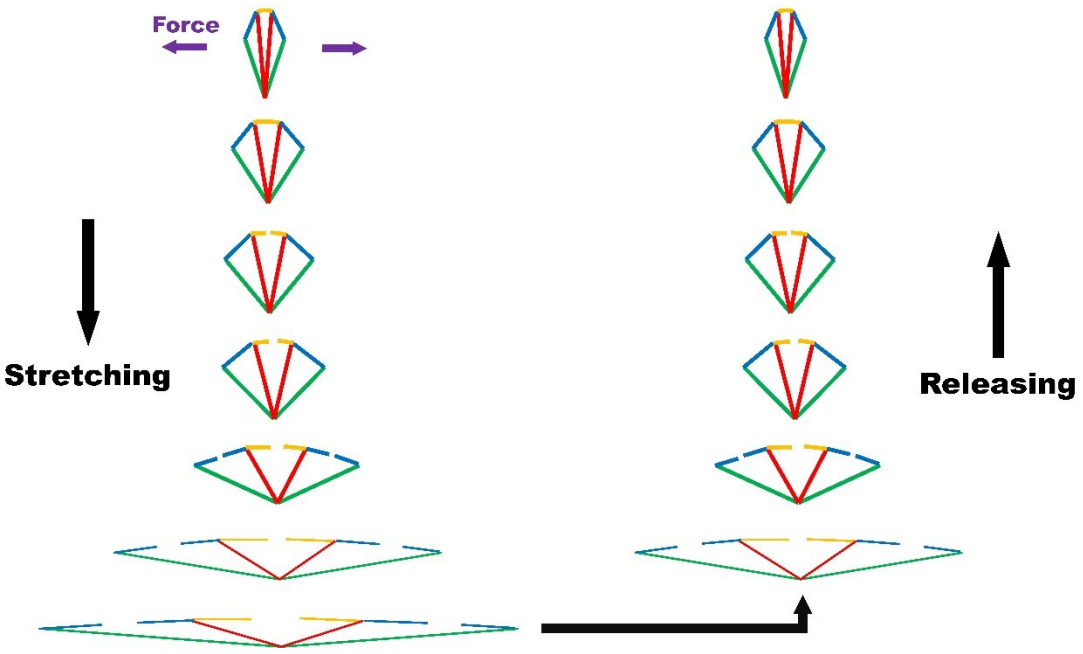

Figure.S4 Evolution of ginkgo-like patterns during stretching and releasing.

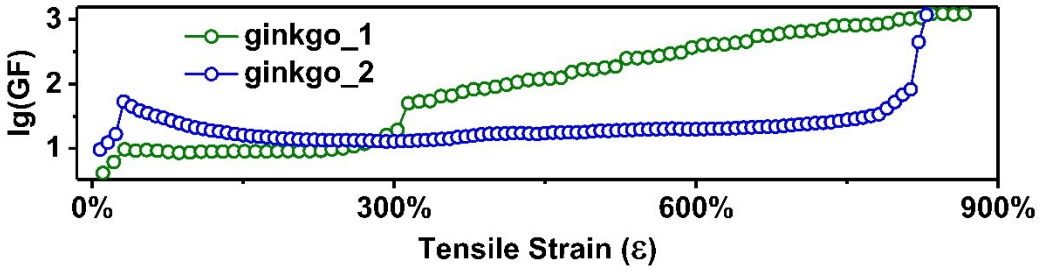

Figure.S5. Logarithmic sensitivity.

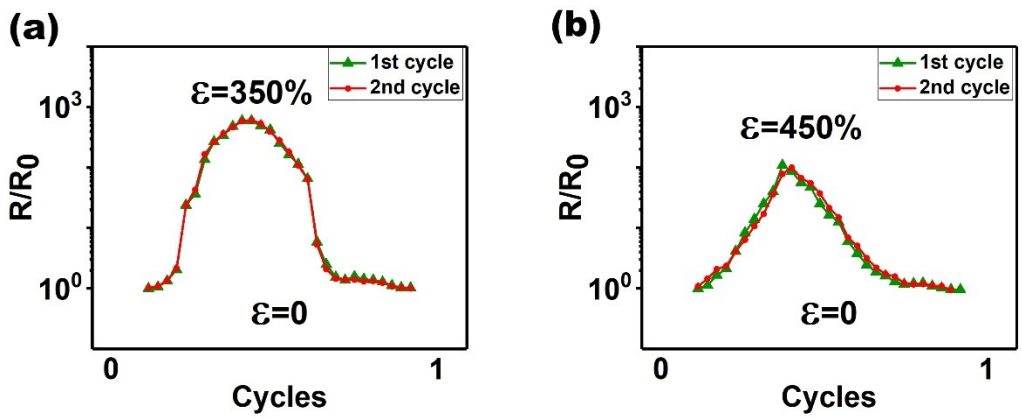

Fig.S6. The coincidence degree and error of different stretching cycles.

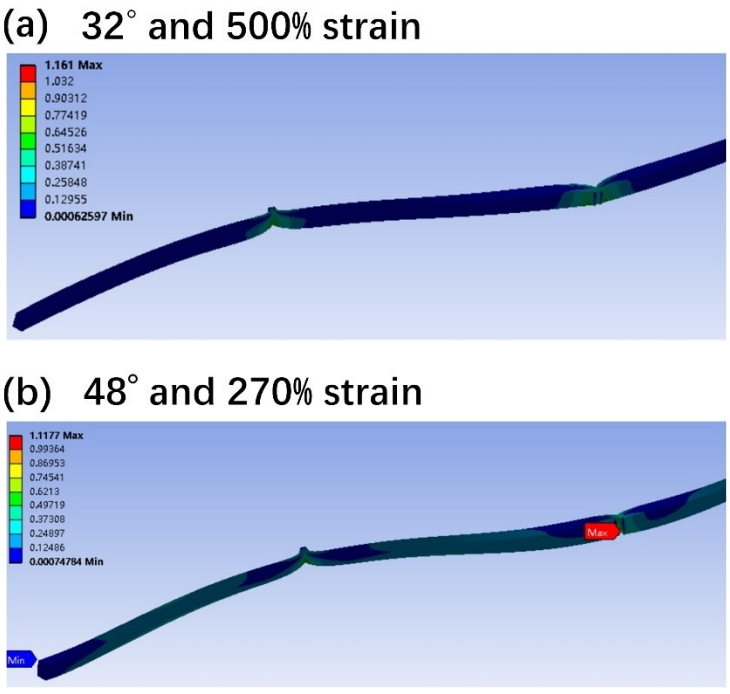

Fig.S7. ANSYS simulation of 32° and 48° foldling.

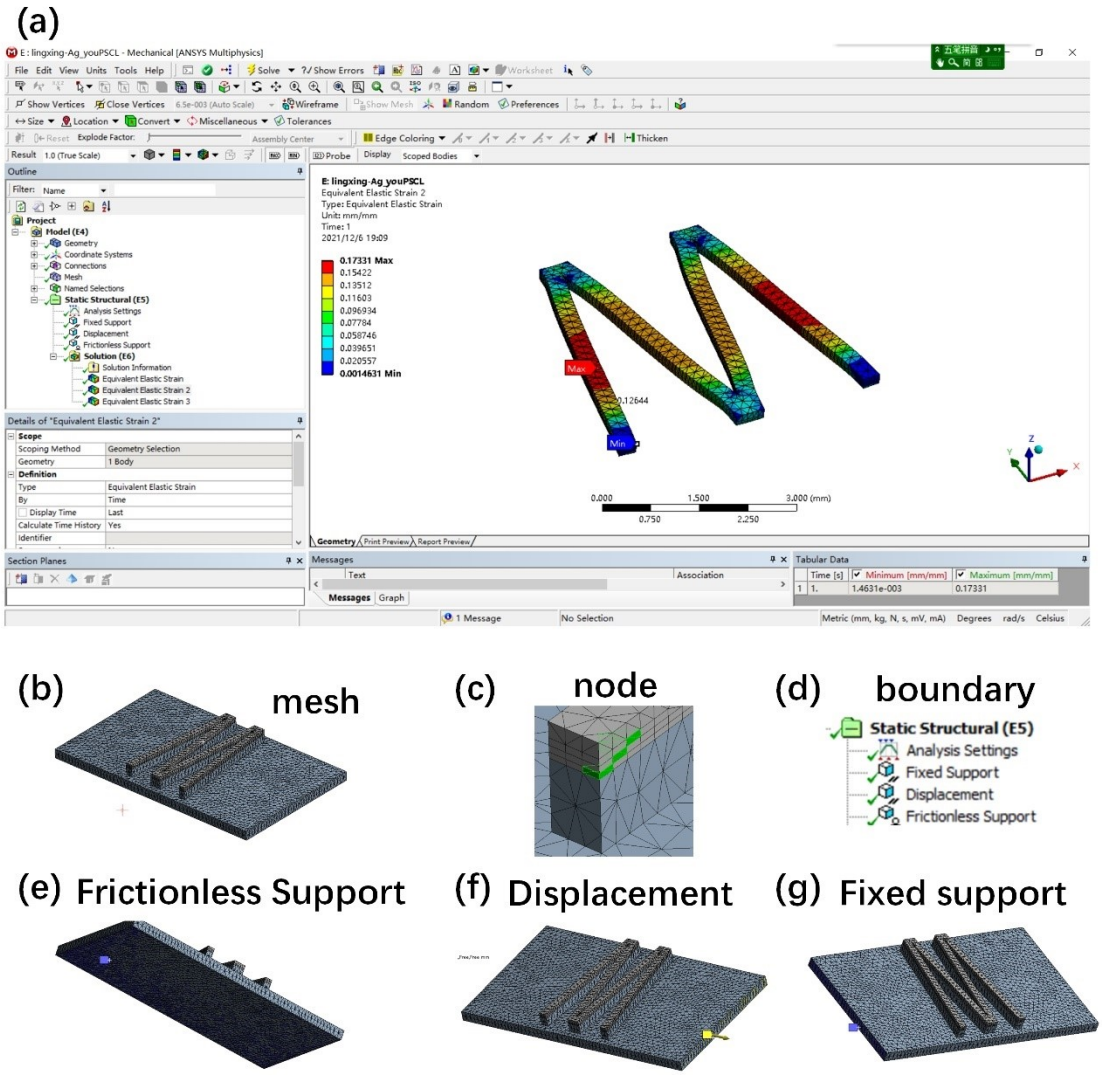

Fig.S8. Details of ANSYS simulation.

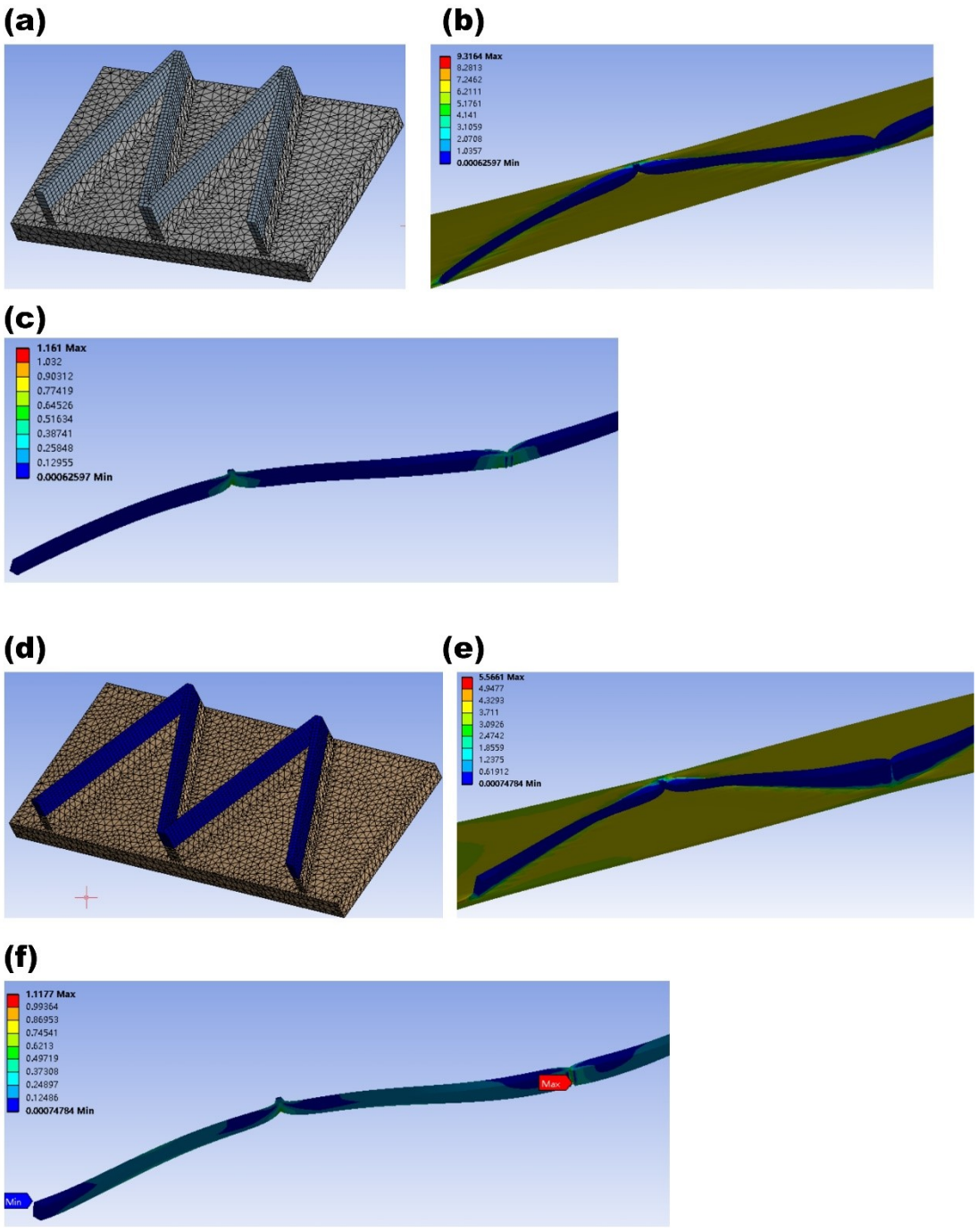

Figure.S9 ANSYS simulation of fold-line patterns. (a) The three-dimensional model with an included angle of 32˚ and the simulation results of the whole (b) and nanocomposites (c). (d) The 3D model with an included angle of 48˚ degrees and the simulation results of the whole (e) and nanocomposites (f).

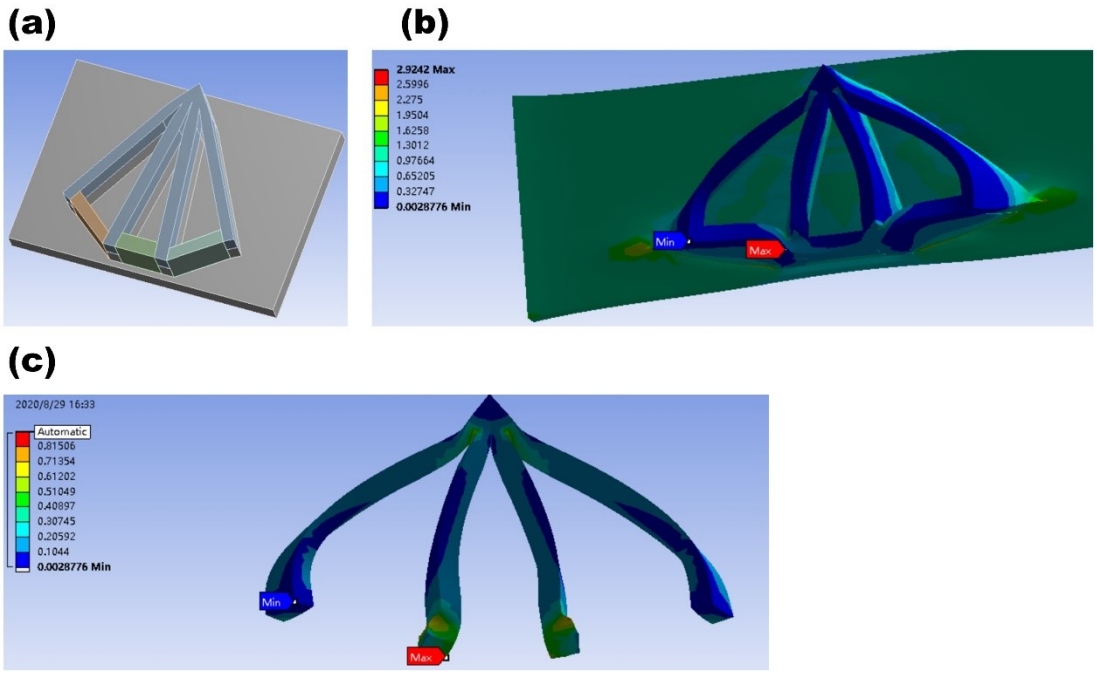

Figure.S10 ANSYS simulation of ginkgo-like patterns. (a) The three-dimensional model and the simulation results of the whole (b) and nanocomposites (c).

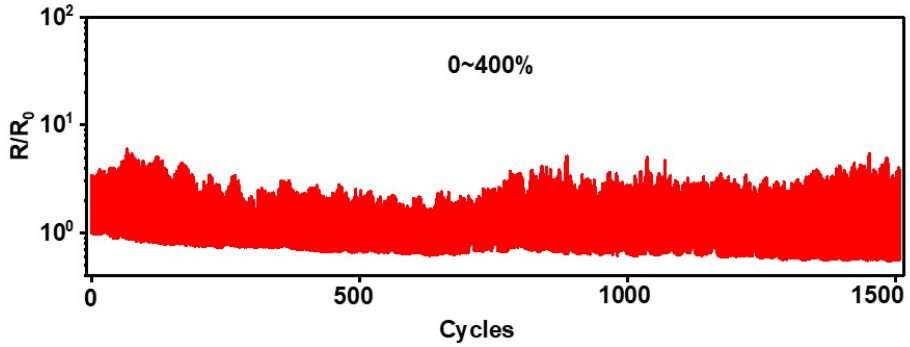

Fig.S11. 1500 stretching cycles of 0~400% strain.

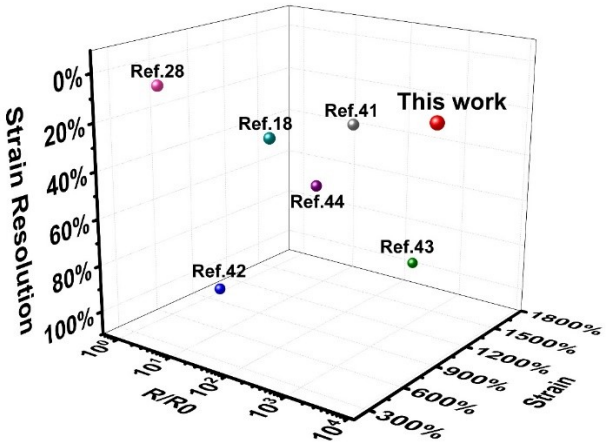

Figure.S12 A summary of the maximum detection strain, maximum resistance change, and strain resolution of seven high-performance strain sensors.