Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information for

Highly sensitive, tunable, and durable gold nanosheet strain sensors for human motion detection

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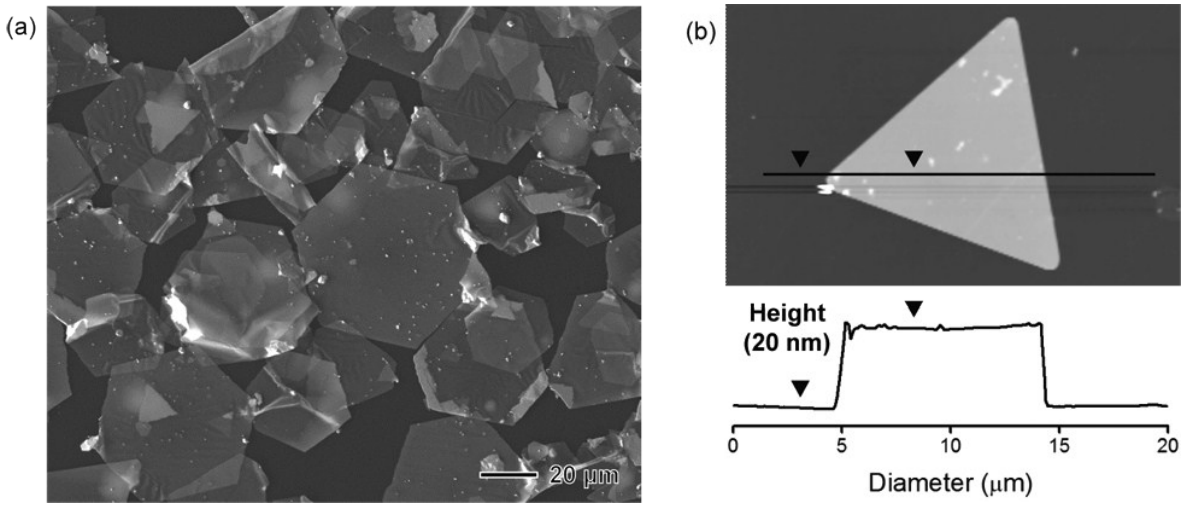

Fig. S1 (a) Scanning electron microscopy (SEM) image of Au nanosheets. (b) Atomic force microscopy (AFM) image of a single Au nanosheet, showing its thickness of about 20 nm.

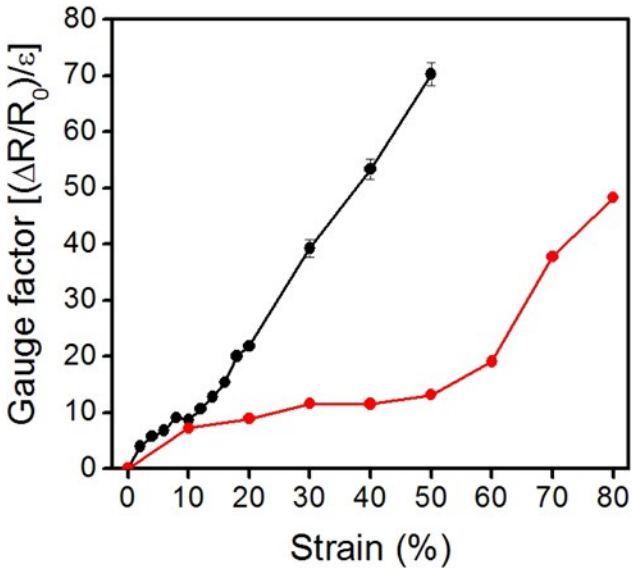

Fig. S2 Gauge factors of Au nanosheet strain sensors based on bilayer (black line) and eight-layer (red line) Au nanosheet films according to tensile strain.

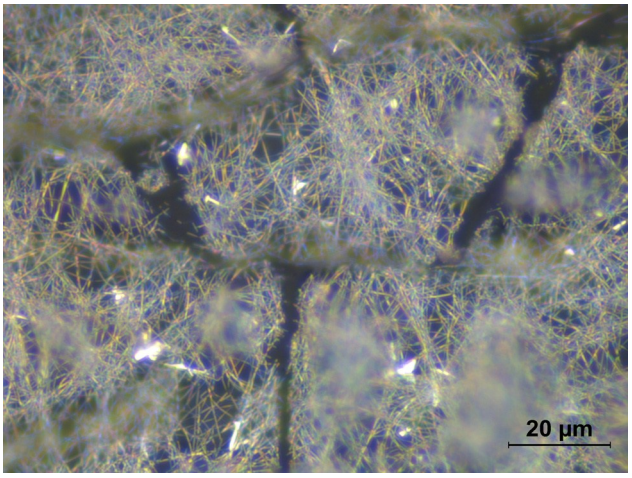

Fig. S3 OM image of Ag nanowire film on Ecoflex substrate taken after 10,000 cycles of stretching at $\varepsilon = 0.5$, showing the generation of cracks in the film.

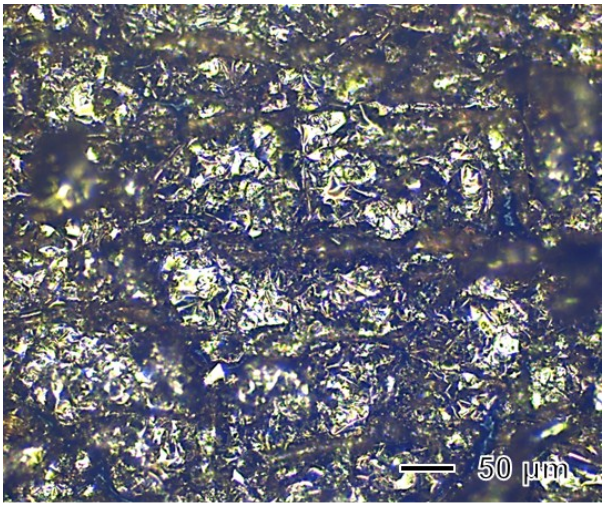

Fig. S4 OM image of eight-layer Au nanosheet film on Ecoflex substrate taken after 10,000 cycles of stretching at $\varepsilon = 0.5$.

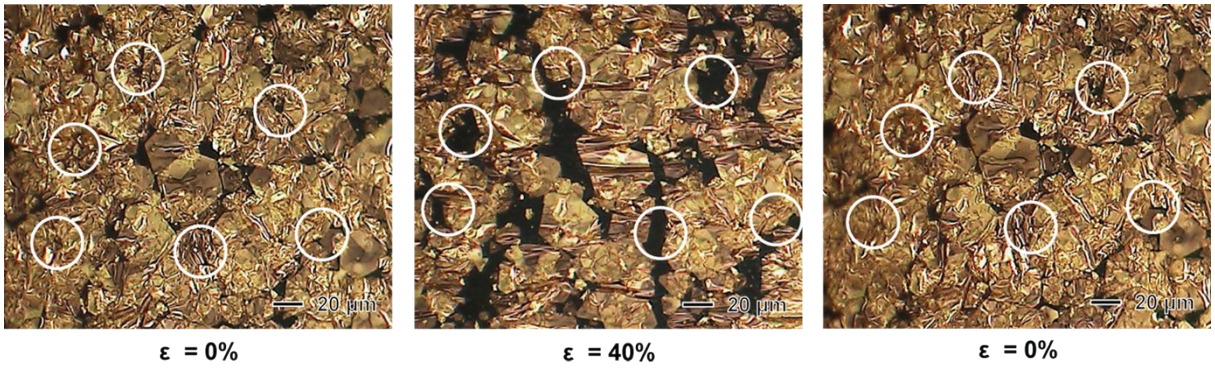

Fig. S5 OM images showing the reversible sliding of Au nanosheets during a stretching and releasing cycle.

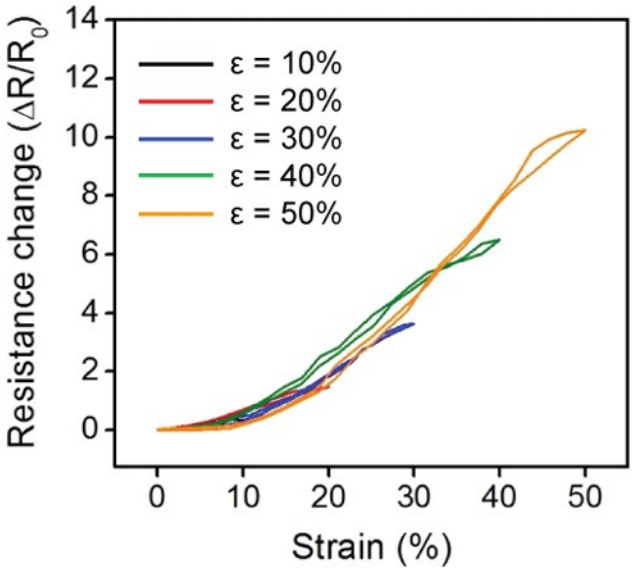

Fig. S6 Hysteresis curves of the eight-layer Au nanosheet film measured at different strains.

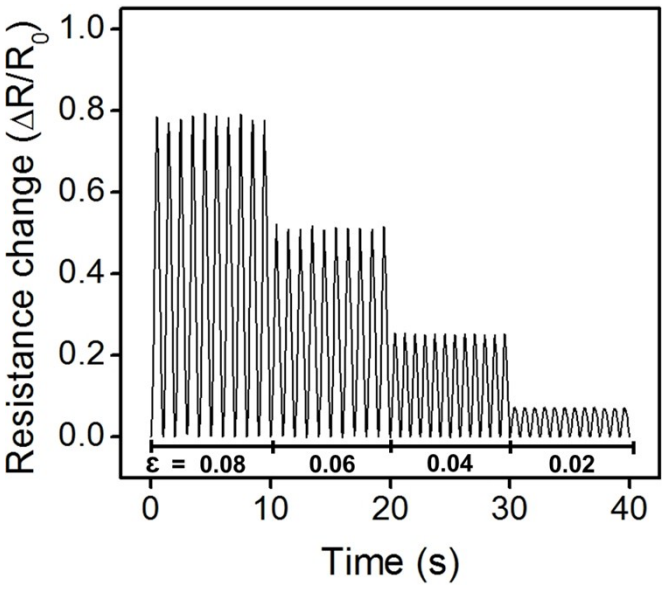

Fig. S7 Time-dependent $\Delta R/R_0$ of the sensor based on bilayer Au nanosheet film in response to repetitive stretching at strains from 8 to 0% with decrement of 2% (10 cycles per strain).

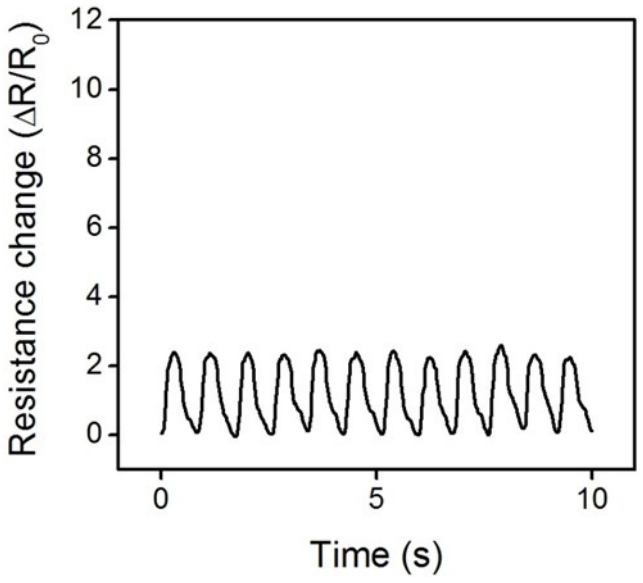

Fig. S8 $\Delta R/R_0$ response of the sensor shown in Fig. 4d measured after 1,500 steps of walking.