micromachines

Supplementary Materials

Strain-Insensitive Elastic Surface Electromyographic (sEMG) Electrode for Efficient Recognition of Exercise Intensities

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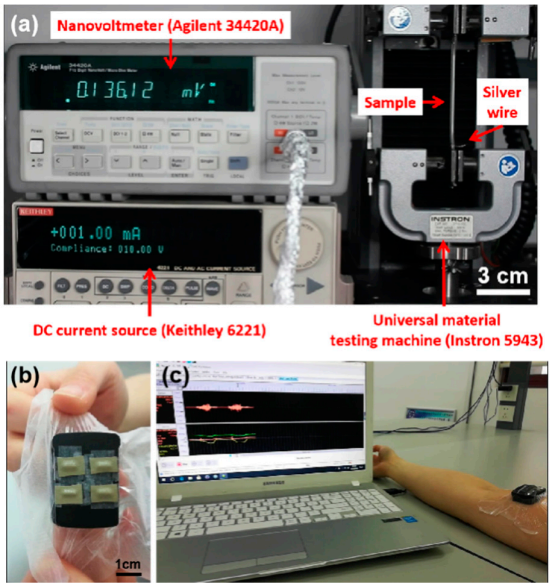

Figure S1. Photos of (**a**) electromechanical measurement, (**b**) the connection between electrode and surface electromyography (sEMG) device, and (**c**) sEMG signal collection.

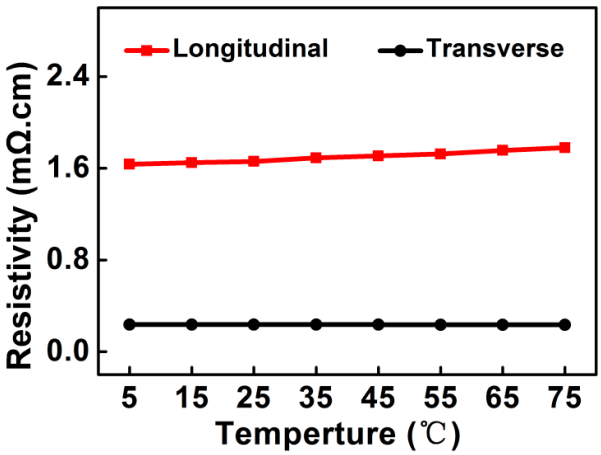

Figure S2. Resistivity variation of electrode at different temperatures.

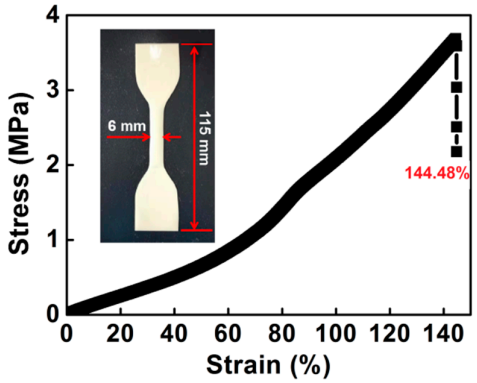

Figure S3. Tensile stress–strain curve of our sEMG electrode.

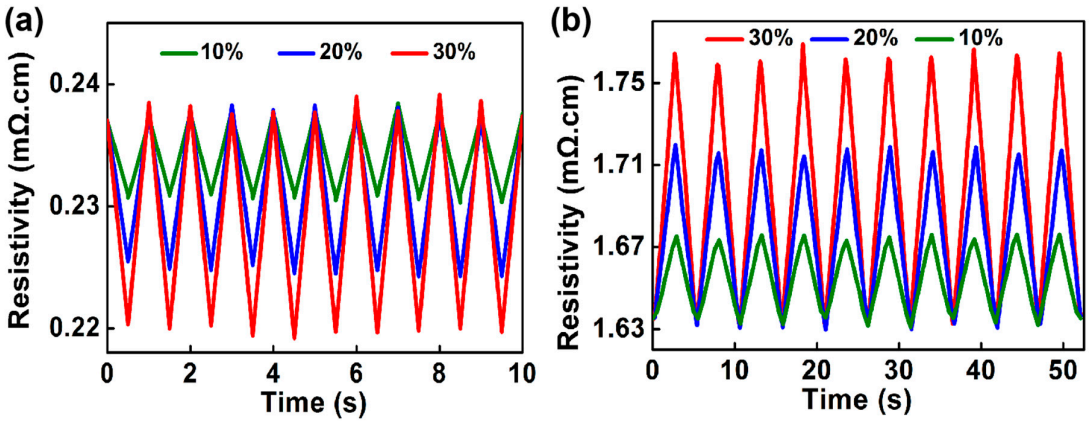

Figure S4. Resistivity change of three-layered sEMG electrode in different directions with the repeated loading and unloading of various strains: (**a**) transverse resistivity and (**b**) longitudinal resistivity.

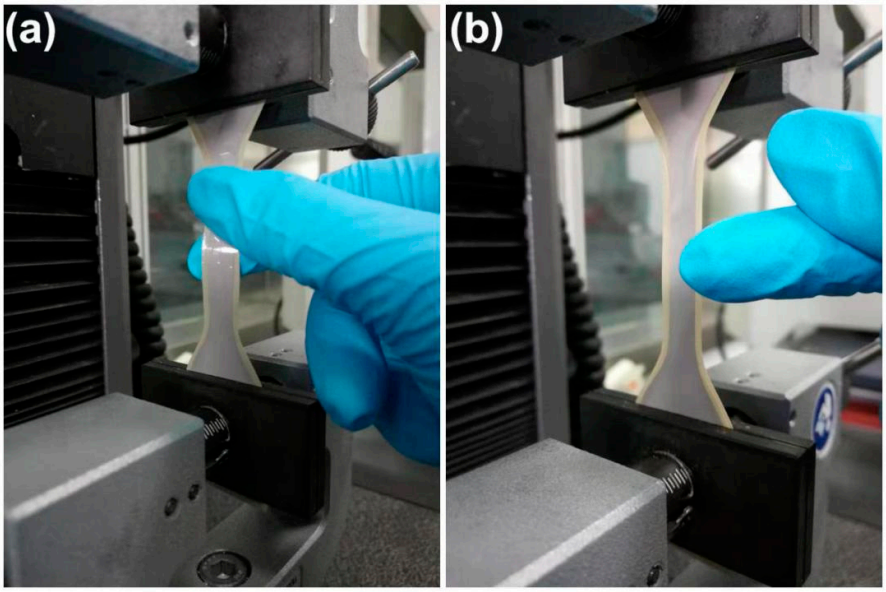

Figure S5. Verification of LM(LM means galinstan) leakage. (**a**) Repeated stretching of sEMG electrode for 100 times (at 30% stretching strain). (**b**) After stretching and rubbing no sign of LM is found, which indicates the high skin-friendliness of the electrode.

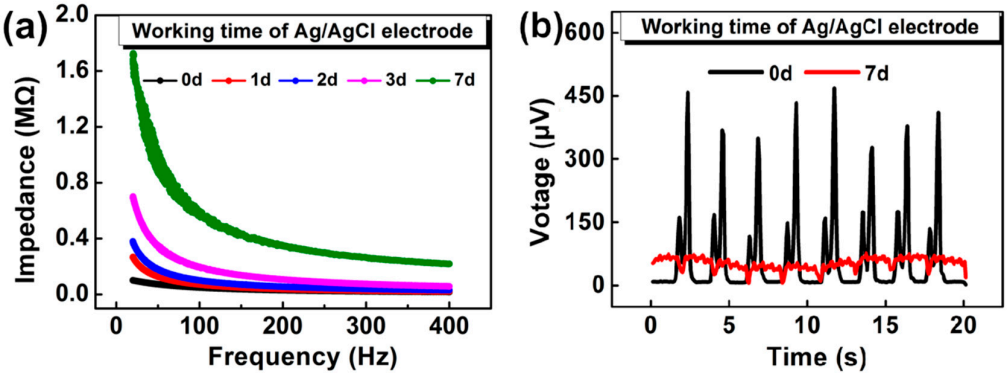

Figure S6. Stability test of Ag/AgCl electrode. (**a**) Time-dependent impedance increase of Ag/AgCl electrode. (**b**) sEMG signal of fresh Ag/AgCl electrode and after the passage of 7 days.

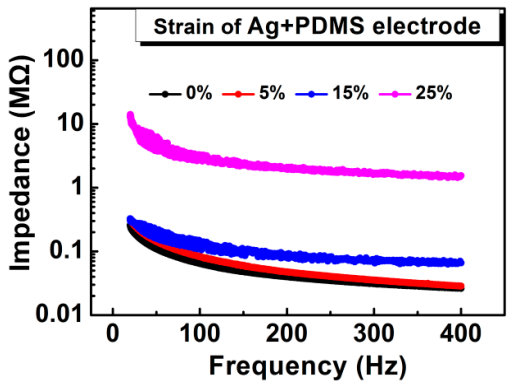

Figure S7. Impedance change of traditional Ag + polydimethylsiloxane (PDMS) electrode (1:1 mass ratio) under different stretching strains.

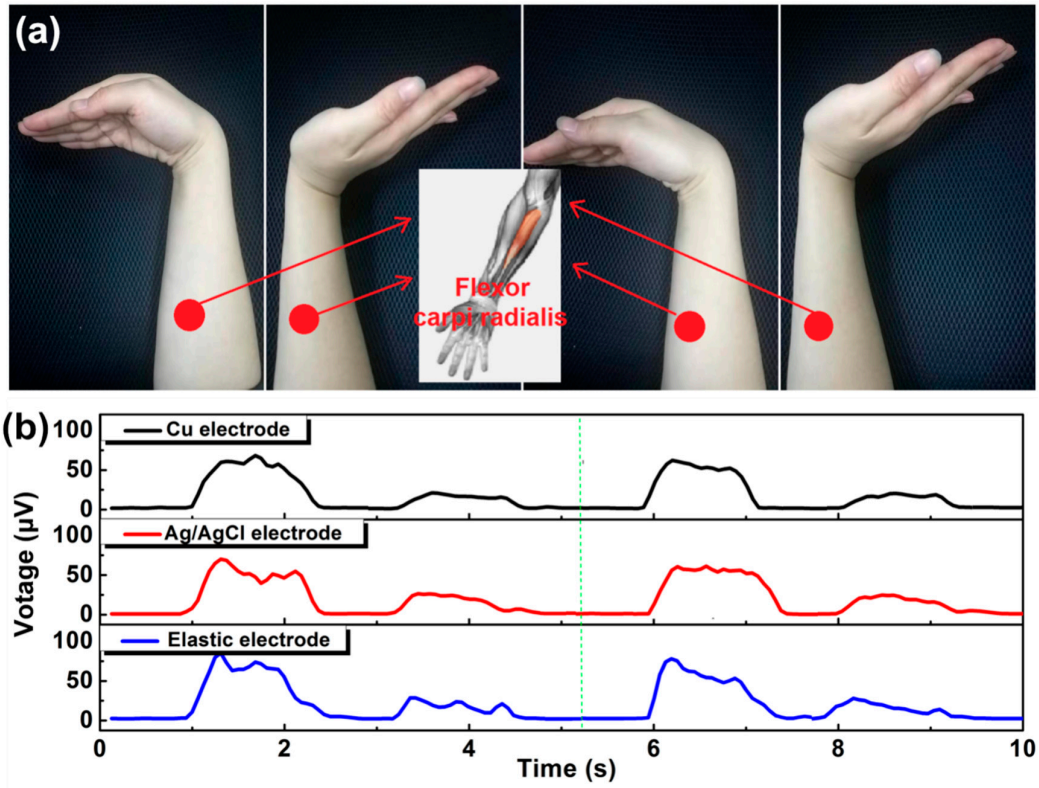

Figure S8. sEMG signal test for recording various gestures of a human hand. (**a**) Various gestures of a human hand. (**b**) Resultant sEMG signals.