

Silica-reinforced dual-network ionogel fibers with high mechanical properties for wearable alternating current electroluminescent device

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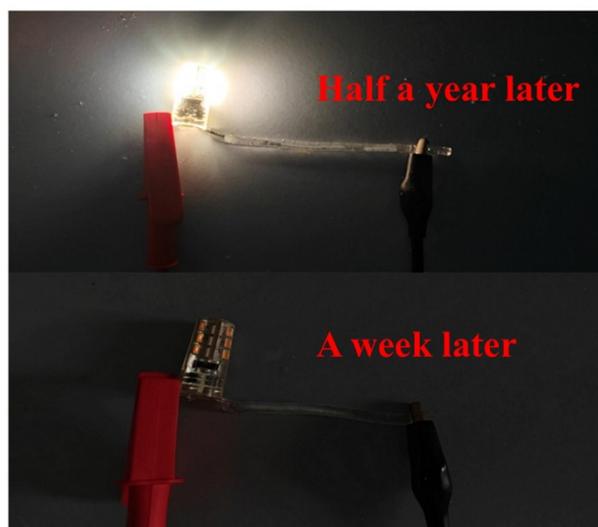
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1. Supplementary Data

Figure S1. The gel fibers subjected to glycerol displacement retain their ability to function as conductive wires and illuminate a bulb after being stored at room temperature for six months, whereas the gel fibers without glycerol displacement are unable to light up the bulb. This is attributed to glycerol's moisture-retaining property, which enables the glycerol-treated gel fibers to maintain ion conductivity even after half a year of storage.



S1. (a) Digital working photographs depicting SPHXSX and SPOHXSX functioning as conductive wires after a certain period of time. (The upper image shows SPOHXSX stored for one year, while the lower image shows SPHXSX stored for one week; both gel lengths are 5 cm.)

Figure S2. (a) Digital photograph showing the gel adhering to some common laboratory equipment. (b) Digital photograph of SPOHXSX rapidly recovering its original length after being stretched.

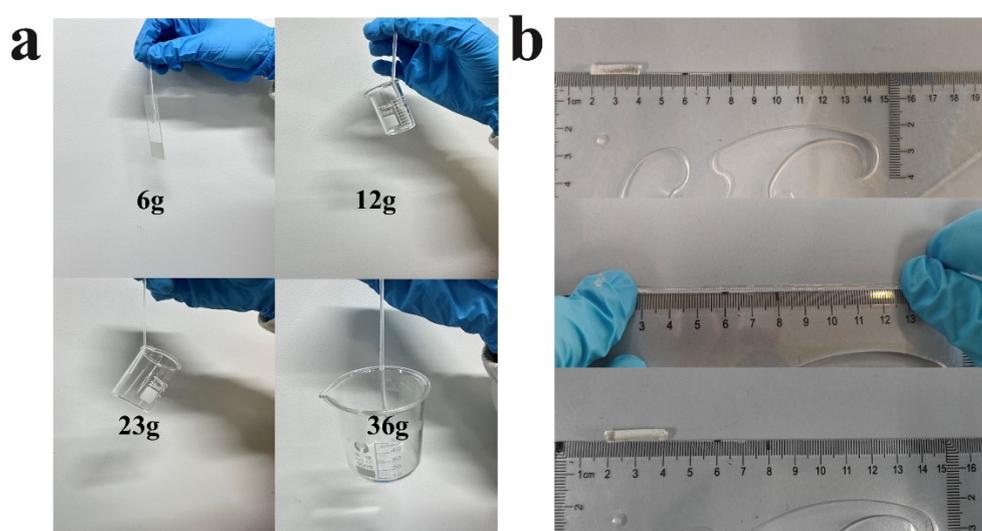


Figure S3. (a) Cyclic stability diagram of SPOH12S0.25~SPOH12S1.25 under 500 cycles of stretching. (b) Cyclic stability diagram of SPOH50S0.25~SPOH50S1.25 under 500 cycles of stretching. (c) Cyclic stability diagram of SPOH300S0.25~SPOH300S1.25 under 500 cycles of stretching.

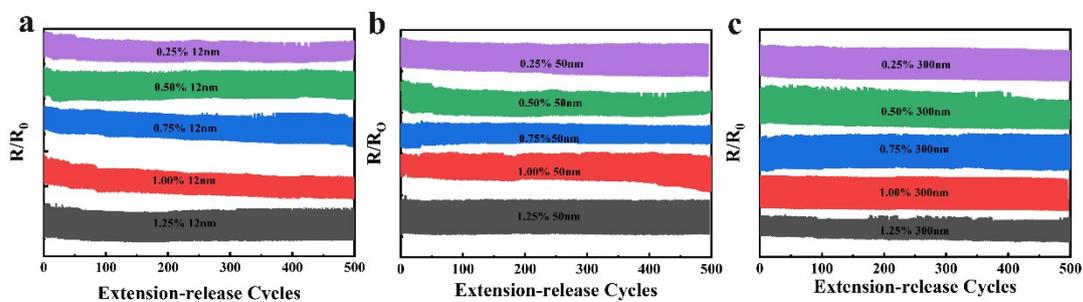


Figure S4. Equivalent crosslinking density, stress-strain curves of samples without SiO_2 and with SiO_2 of different particle sizes.

