Supporting Information

DNA-inspired hydrogel mechanoreceptor with skin-like mechanical behavior

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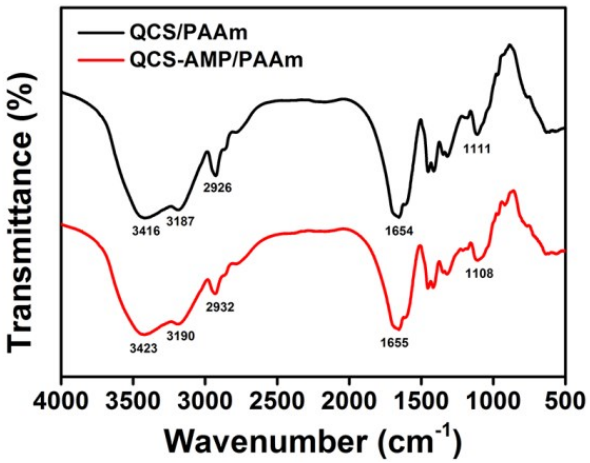

Figure S1. FTIR spectra of QCS/PAAm and QCS-AMP/PAAm hydrogels.

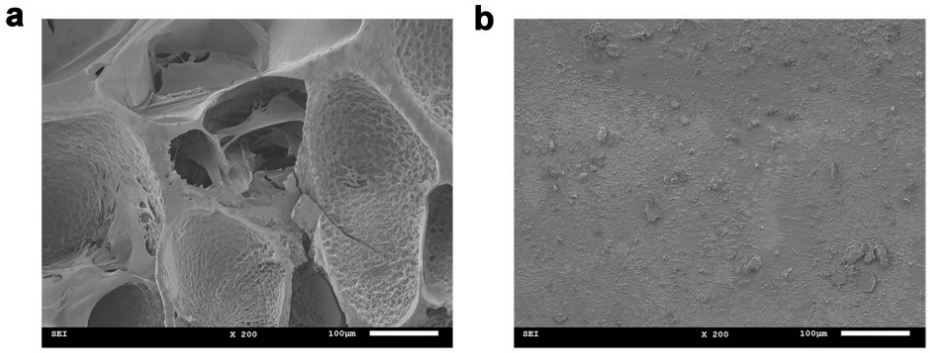

Figure S2. SEM images of QCS/PAAm (a) and QCS-AMP/PAAm hydrogels (b).

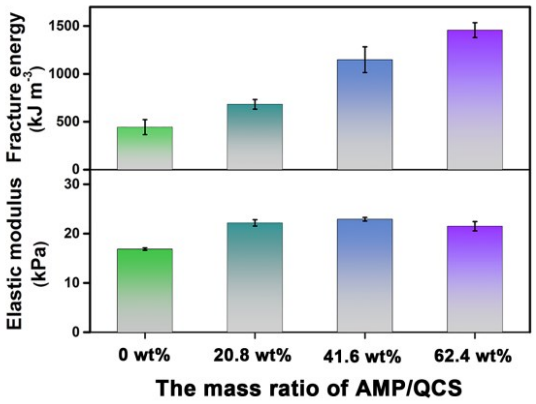

Figure S3. Elastic modulus and fracture energy of the hydrogels with different mass ratio of AMP/QCS.

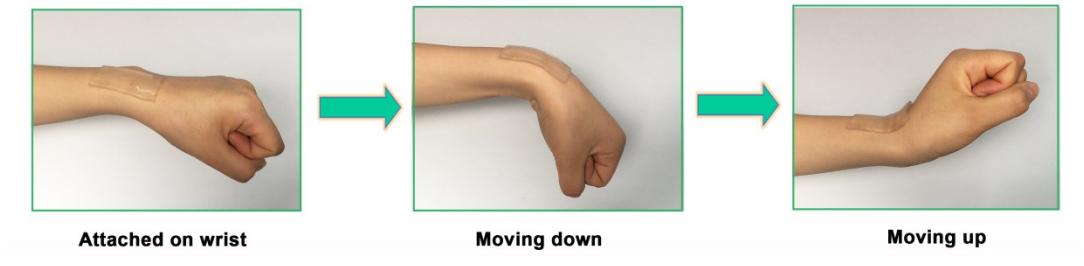

Figure S4. Photos of the QCS-AMP/PAAm hydrogel sensor attached to wrist moving down and up.

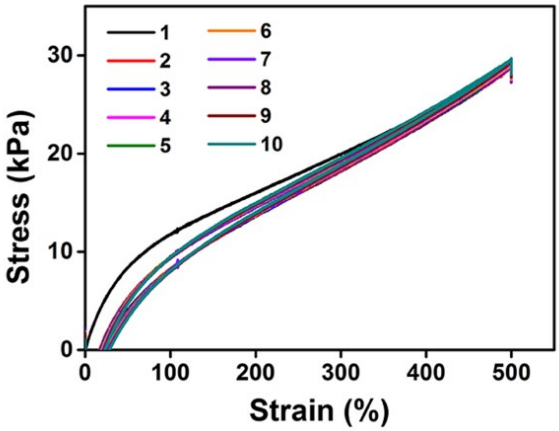

Figure S5. 10 times successive tensile cyclic loading-unloading curves of the same QCS-AMP/PAAm hydrogel at a maximum strain of 500%.

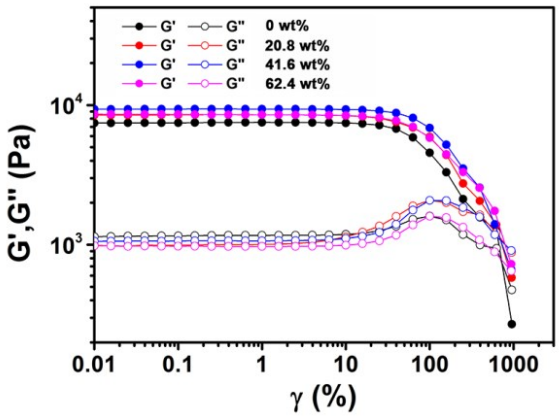

Figure S6. G′ and G″ as a function of frequency for the hydrogels with different AMP contents.

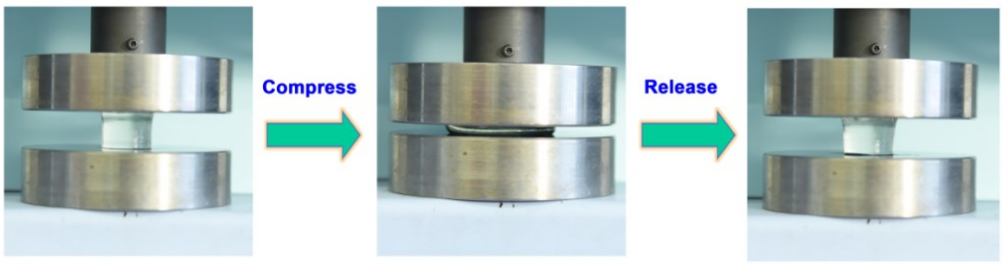

Figure S7. The QCS-AMP/PAAm hydrogels could immediately recover its original shape after releasing from 90% compression strain.

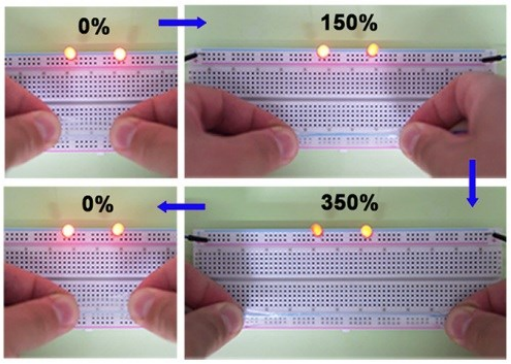

Figure S8. (a) Photographs of luminance changes of a LED bulb as the length of QCS-AMP/PAAm hydrogels increased.

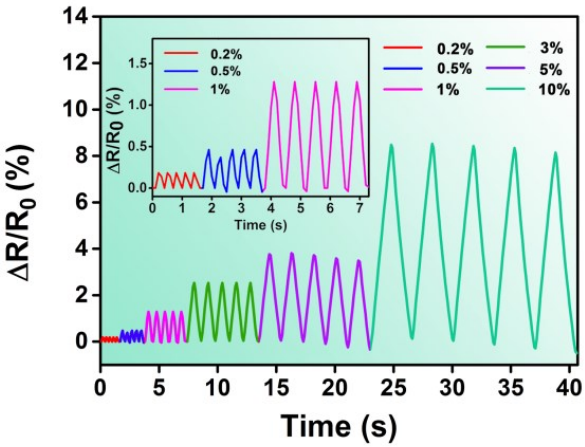

Figure S9. Relative resistance variations of the hydrogel strain sensor by stretching to various small strains.

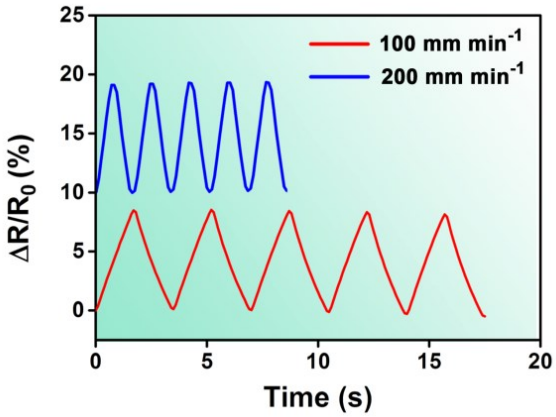

Figure S10. Relative resistance variation of the hydrogel strain sensors versus time under different tensile speed at a tensile strain of 10%.

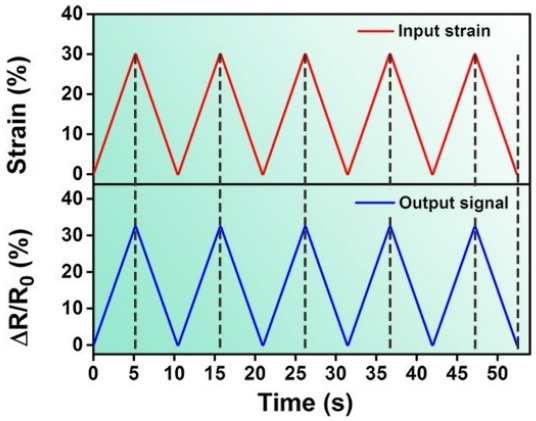

Figure S11. The hydrogel strain sensors exhibit great synchronism with negligible electrical hysteresis under an input strain of 30%.

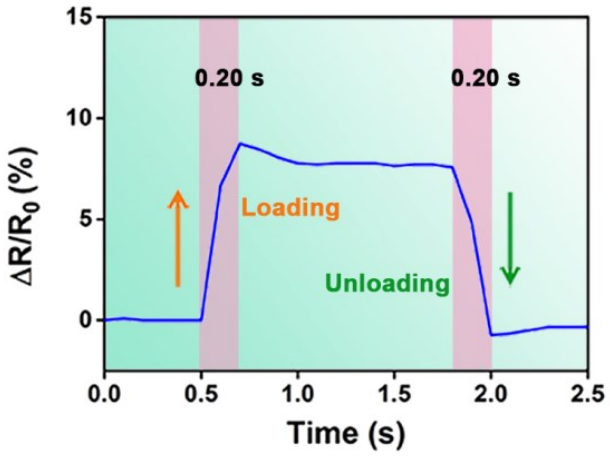

Figure S12. The response and recovery time of the hydrogel pressure sensors.