

Supporting Information

Strong and Tough Agar Organohydrogels for Strain, Humidity and Temperature Sensors

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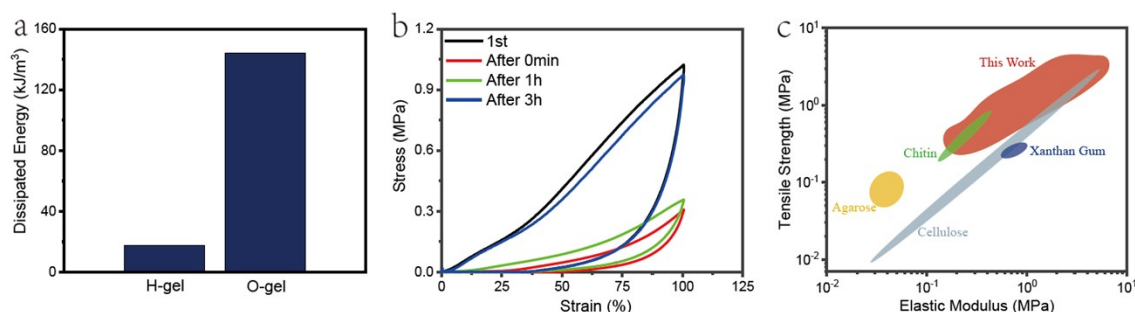


Figure S1 (a) dissipated energy of the agar hydrogel and agar organohydrogel. (b) Recovery curves of the Agar organohydrogel for different durations. (c) The Ashby chart of elastic modulus and tensile strength for different polysaccharide-based organohydrogels.

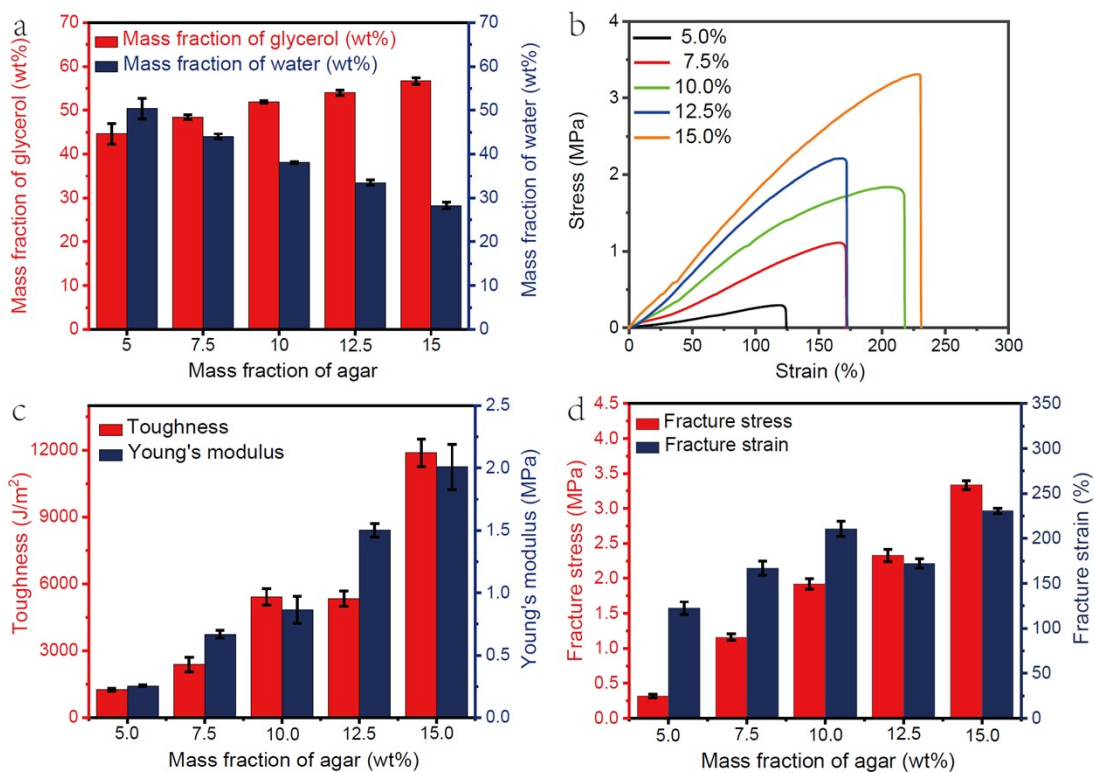


Figure S2 (a) Mass fraction of glycerol and water, (b) Tensile stress–stretch curves, (c) Elastic modulus and toughness, (d) Fracture stress and fracture strain of the agar organohydrogel (soaking time of 6 hours) with various mass fraction of agar.

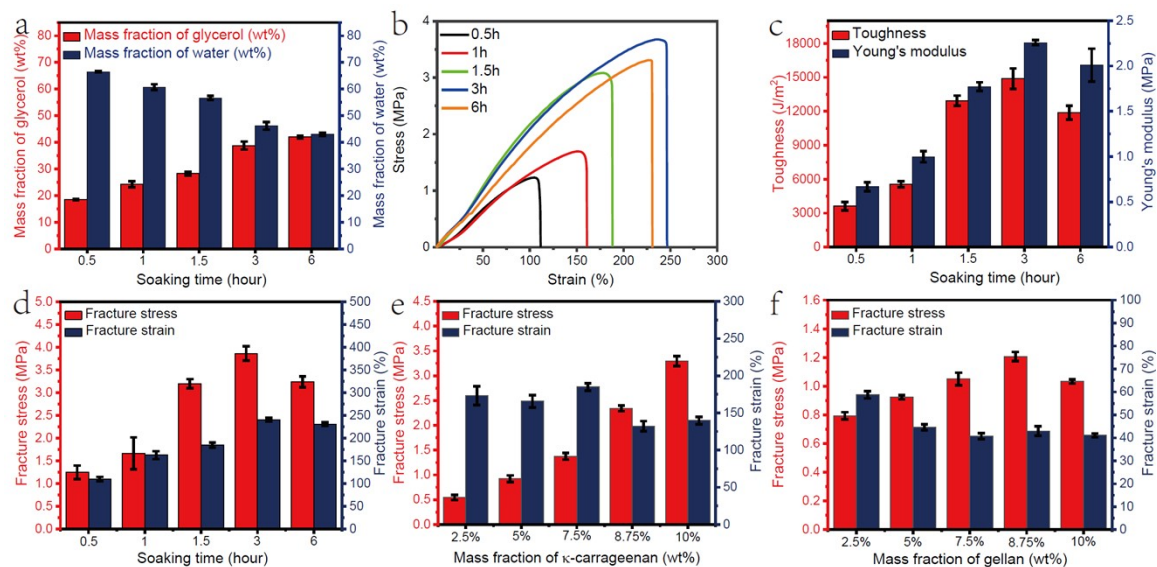


Figure S3 (a) Mass fraction of glycerol and water, (b) Tensile stress–stretch curves, (c) Elastic modulus and toughness, (d) Fracture stress and fracture strain of the agar organohydrogel with various soaking time. (e) Fracture stress and fracture strain of the κ -carrageenan organohydrogel with various mass fraction of κ -carrageenan. (f) Fracture stress and fracture strain of the gellan organohydrogel with various mass fraction of gellan.

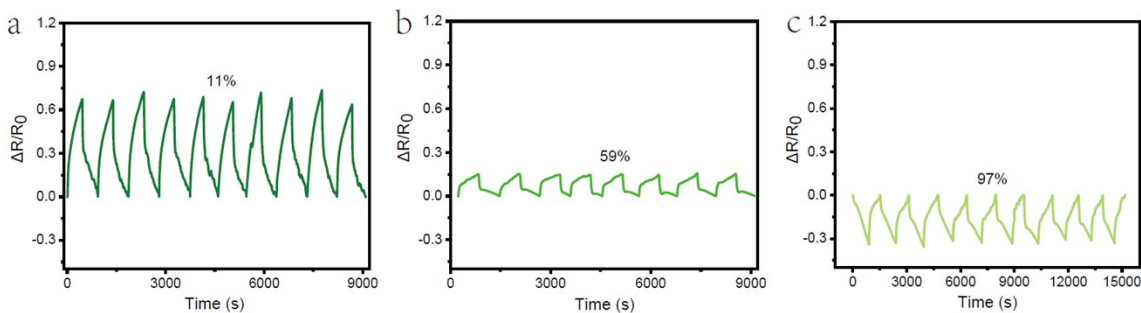


Figure S4 Cycling performance tests of the agar/NaCl organohydrogel-based humidity sensor under humidity of (a) 11%, (b) 59%, and (c) 97%.

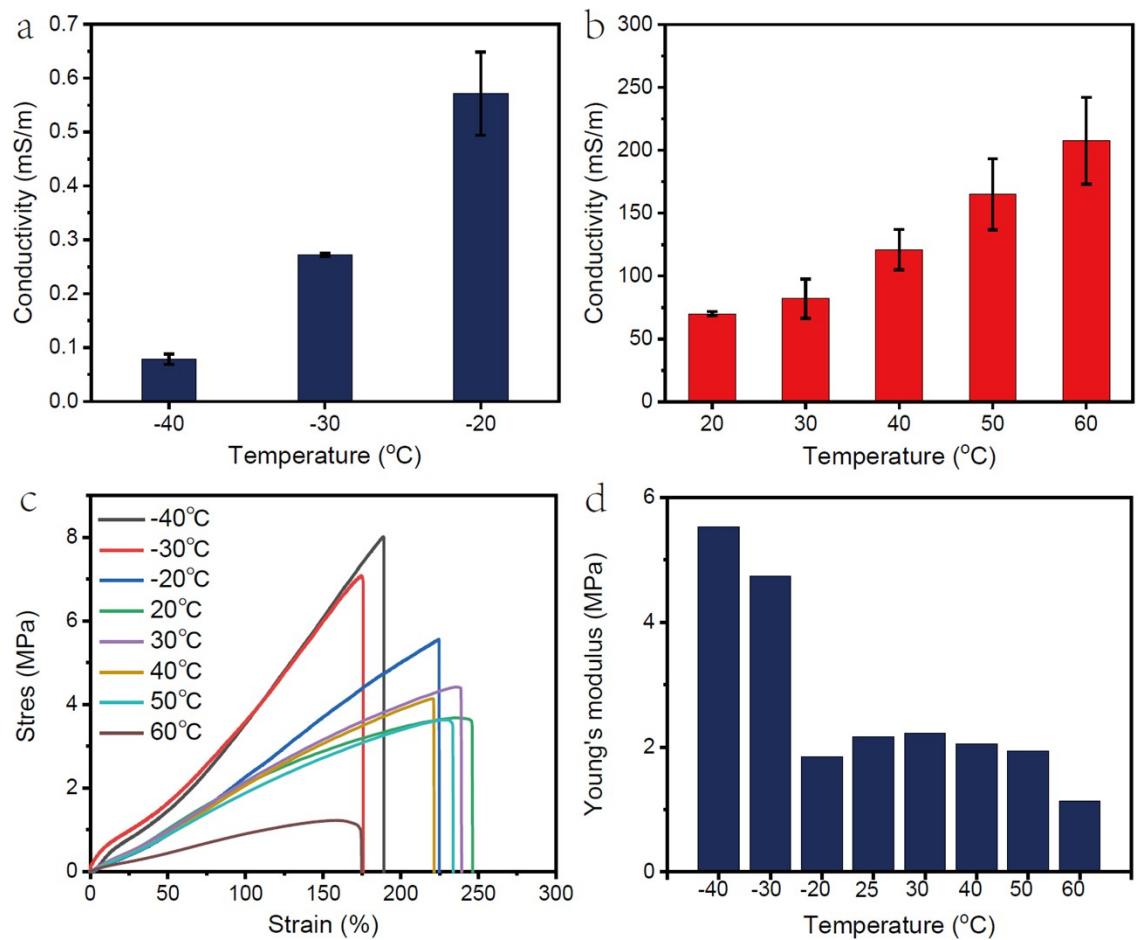


Figure S5 Conductivity of the agar/NaCl organohydrogel at (a) various temperature below zero, (b) various temperature above zero. (c) Tensile stress–strain curves and (d) Elastic modulus of the agar organohydrogel at various temperature.