

Supporting Information

Self-Powered, Non-Toxic, Recyclable Thermogalvanic Hydrogel Sensor for Temperature Monitoring of Edibles

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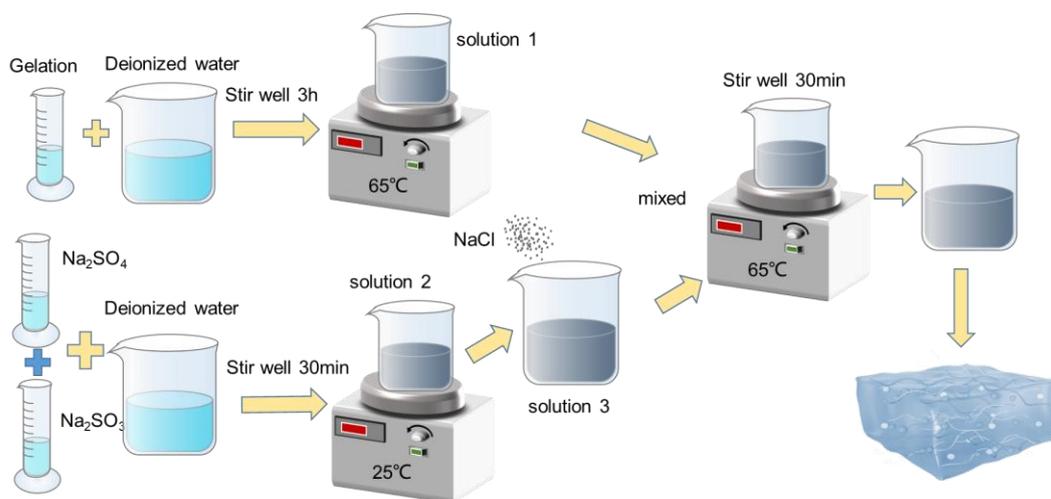


Figure S1. Preparation process of Gel- $\text{SO}_3/4^2$ gel

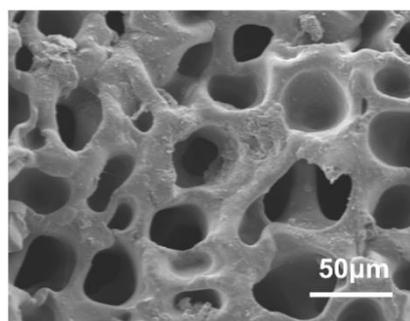


Figure S2. SEM image of a Gelatin gel after freeze-drying.



Figure S3. Self-healing photo of $\text{Gel-SO}_3/4^{2-}$ gel.
(a) Initial state; (b) Cut off status; (c) Healing status.

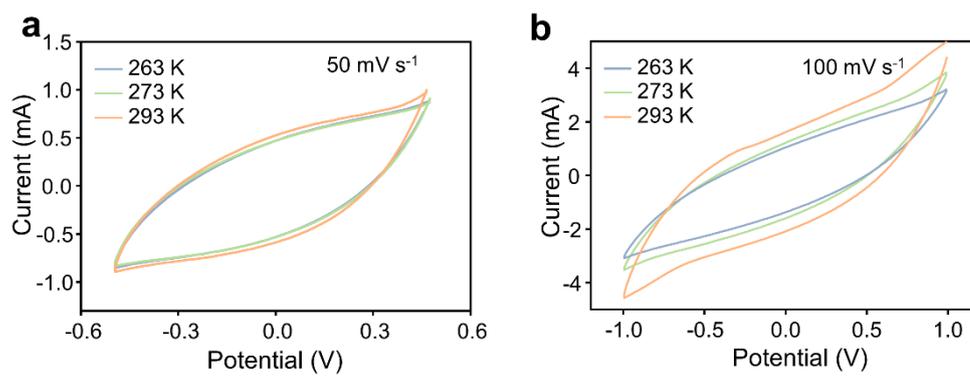


Figure S4. Cyclic voltammetry (CV) curves scanned at different temperatures.

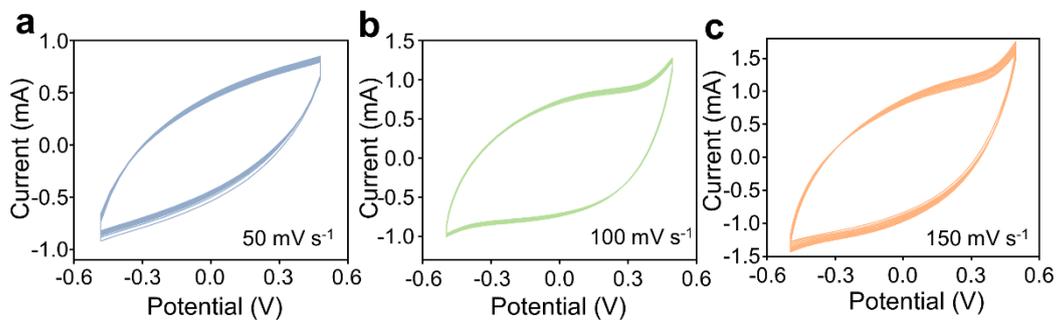


Figure S5 Cyclic voltammetry (CV) curves scanned at 50 mV s^{-1}
 (a), 100 mV s^{-1} (b), 150 mV s^{-1} (c), respectively.

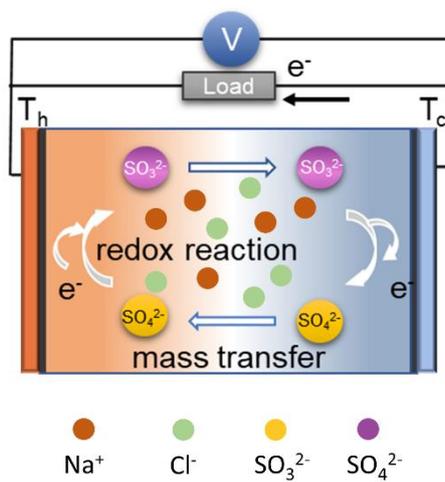


Figure S6. The overall working mechanism and equivalent circuit.

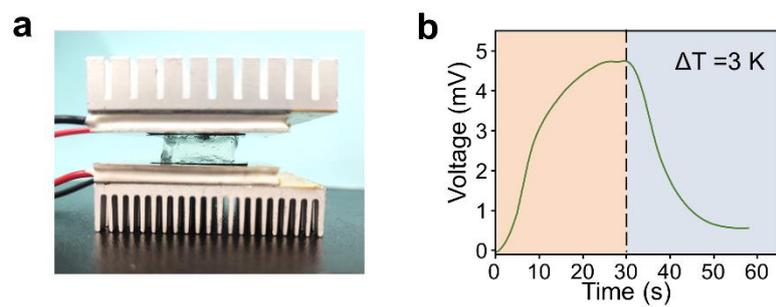


Figure S7. (a) Physical photo of thermoelectric measurement platform.
(b) Time-voltage curve for a temperature difference of 3K between the two ends of the gel.



Figure S8. Gel-SO_{3/4}²⁻ gel encapsulated and unencapsulated optical photos



Figure S9. Gel-SO_{3/4}²⁻ gel for measuring water temperature.

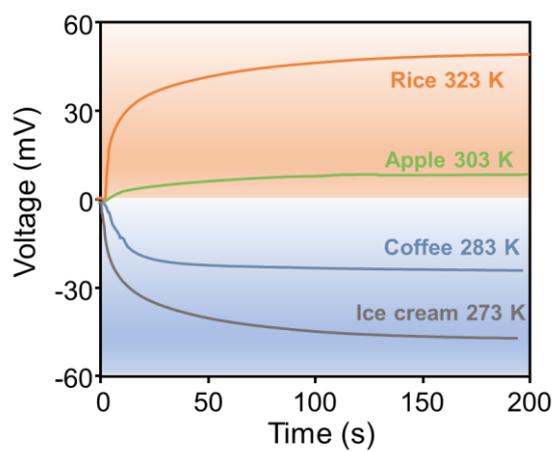


Figure S10. Gel-SO_{3/4}²⁻ gel for temperature detection of different foods.