

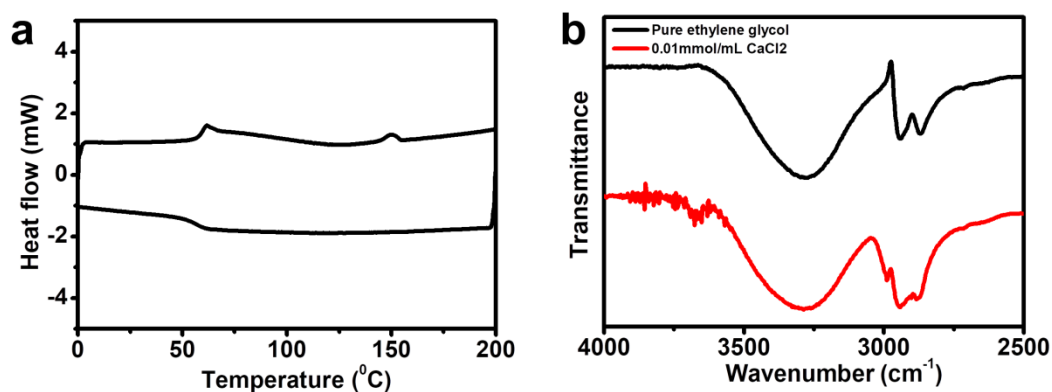
Supporting Information

Body Compatible Thermometer Based on Green Electrolytes

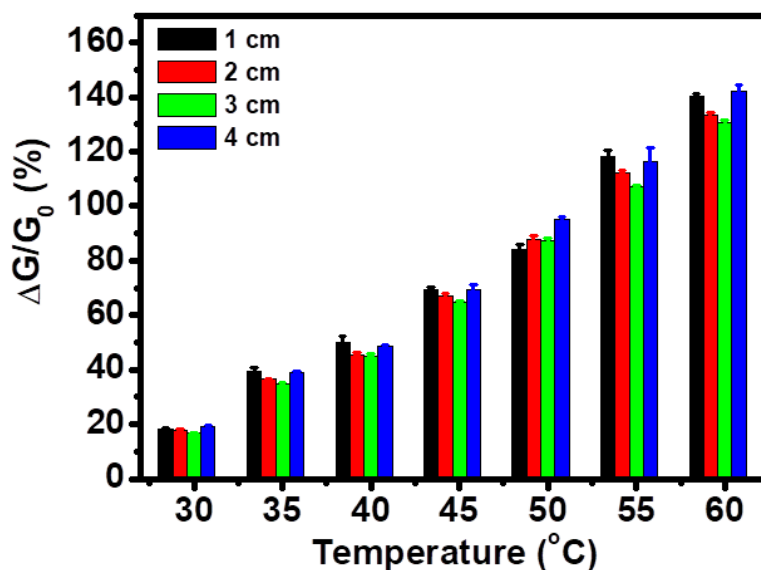
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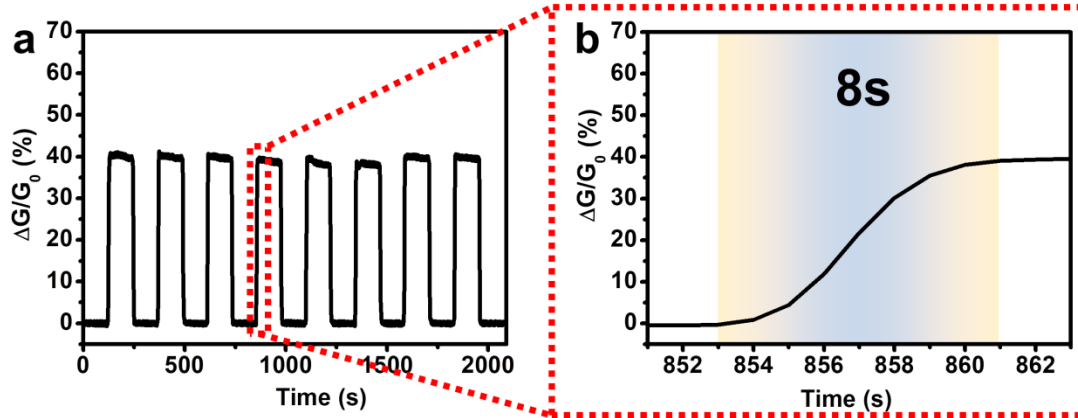
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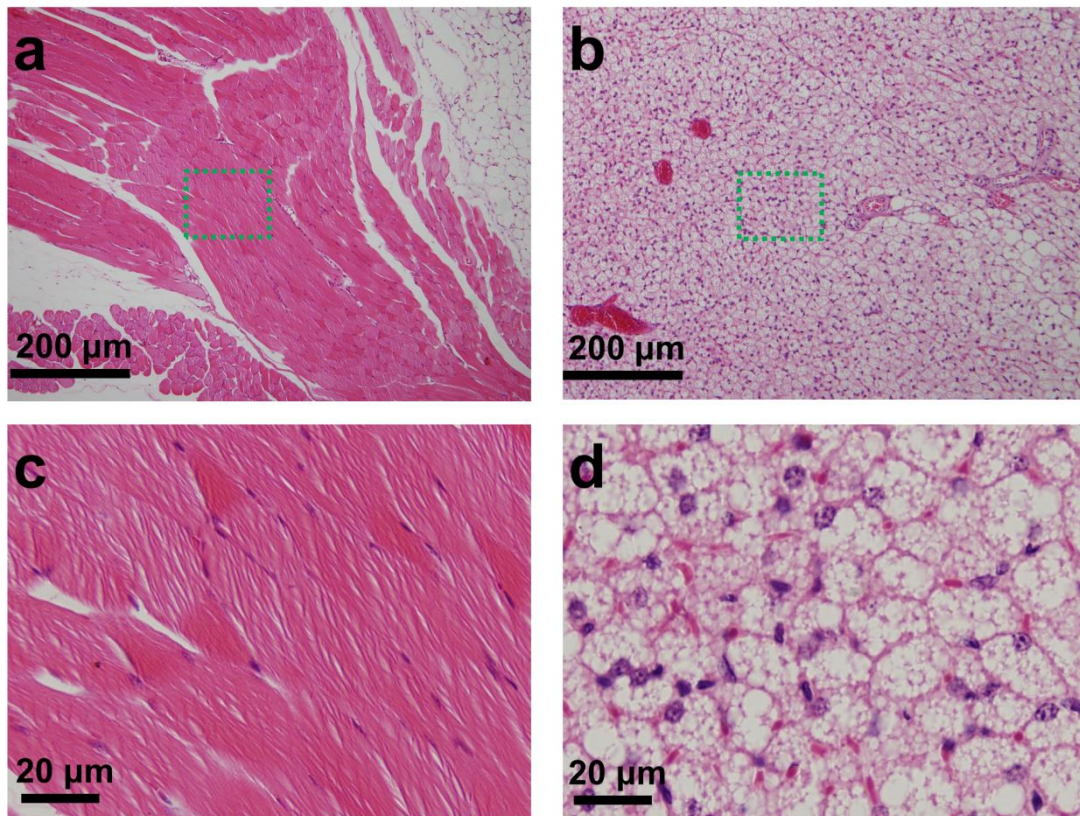
Supporting Figure S1. (a) DSC curve of unmodified PLA slice. (b) FT-IR spectra of pure ethylene glycol (black) and ethylene glycol dissolving 0.01 mol/L CaCl₂ (red).



Supporting Figure S2. Thermal responses of thermal sensing fluids (ethylene glycol + 0.01 mol/L CaCl₂) encapsulated in capillary tube with different length, including 1.0, 2.0, 3.0 and 4.0 cm.



Supporting Figure S3. (a) On-off cycles of thermal responses of liquid thermometer operated under 35 °C and room temperature (25 °C) alternatively. (b) Enlarged view of one on-off sensing curve highlighted with red box in (a).



Supporting Figure S4. H&E staining of histological sections of muscular tissue (a) and adipose tissues (b) 2 weeks after the sensor was implanted into the mouse. The green dotted box region marked in (a) and (b) is magnified as (c) and (d), respectively.

Supporting Table S1. Thermal Sensitivity comparison between reported temperature sensors and our liquid-based thermometers.

Temperature sensors	Measurement range (°C)	Sensitivity
CNWs/PDMS-based temperature sensor	35-45	0.214 °C ⁻¹
Ni microparticle-filled binary polymer composite	-	0.1-0.90 °C ⁻¹
Graphite powders in PDMS	30-110	0.286 °C ⁻¹
rGO/PU temperature sensor	-	0.0134 °C ⁻¹
CNTs powder deposited on elastic polymer tape	20-70	-1.26% °C ⁻¹
Water proof and vapor permeable temperature sensor	22-45	0.002778 °C ⁻¹
Pt/PI temperature sensor	20-60	0.00219 °C ⁻¹
Temperature sensing fabric with Ni fibers	0-100	0.0048 °C ⁻¹
Temperature sensor including Au as the sensing layer	30-80	0.8 Ω °C ⁻¹
A chemiresistor consisting of AuNP film	10-42	0.41MΩ °C ⁻¹
Ferroelectric rGO/PVDF composite film	-2-64	1.58% C ⁻¹
PET/PEDOT:PSS/P3HT:PCBM /EGaIn	20-150	3.6% C ⁻¹
Ionic liquid	25-60	3.025% °C ⁻¹
This work	10-60	3.618-8.032% C ⁻¹