Electronic Supplementary Information (ESI)

For

Achieving a highly-safe supercapacitor via the combination of temperature-responsive hydrogel-electrolyte and electrochromic electrodes

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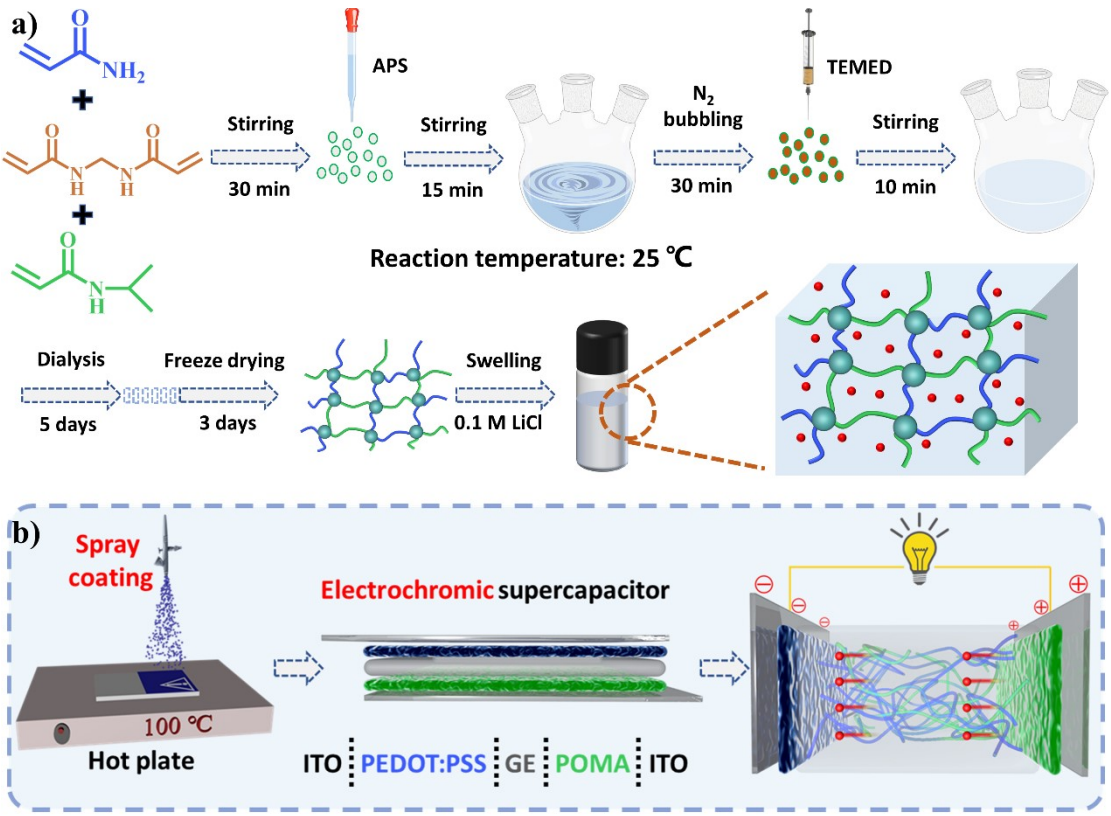

Figure S1. The schematic fabrication process of a) the thermal-responsive gel electrolyte, and b) the smart supercapacitor.

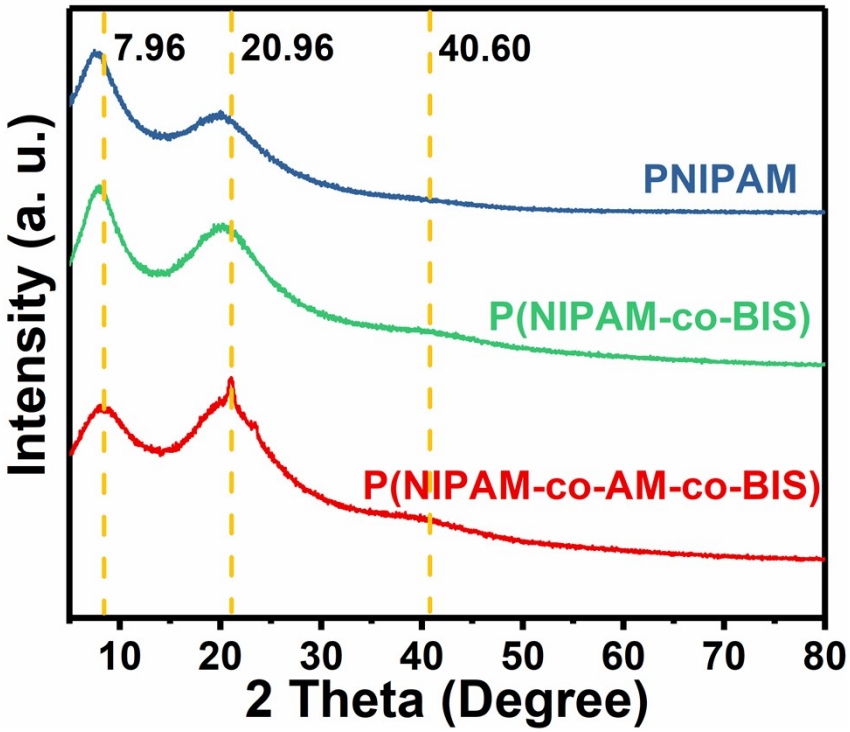

Figure S2. XRD curves of all the PNIPAM-related polymers

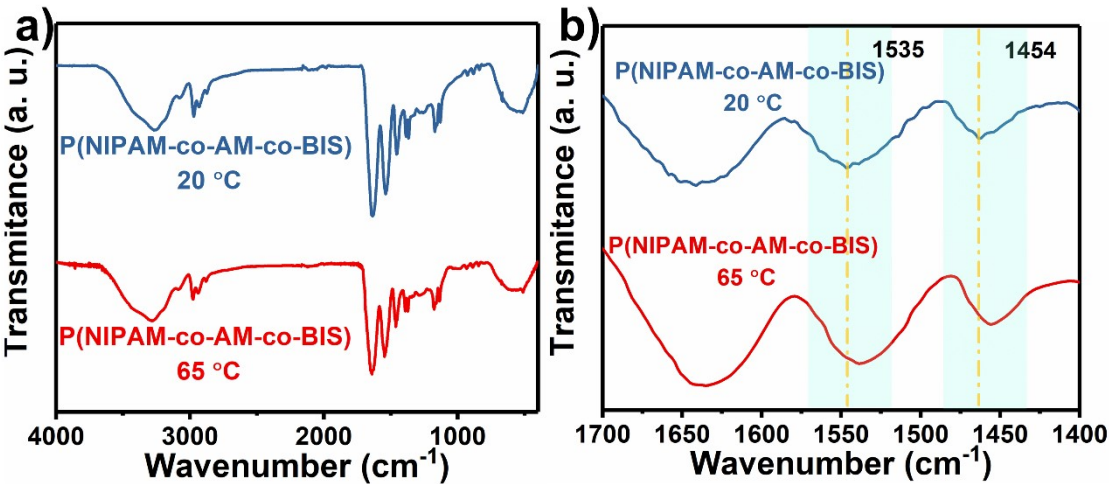

Figure S3. FTIR spectra of the PNAB copolymer at HT and RT.

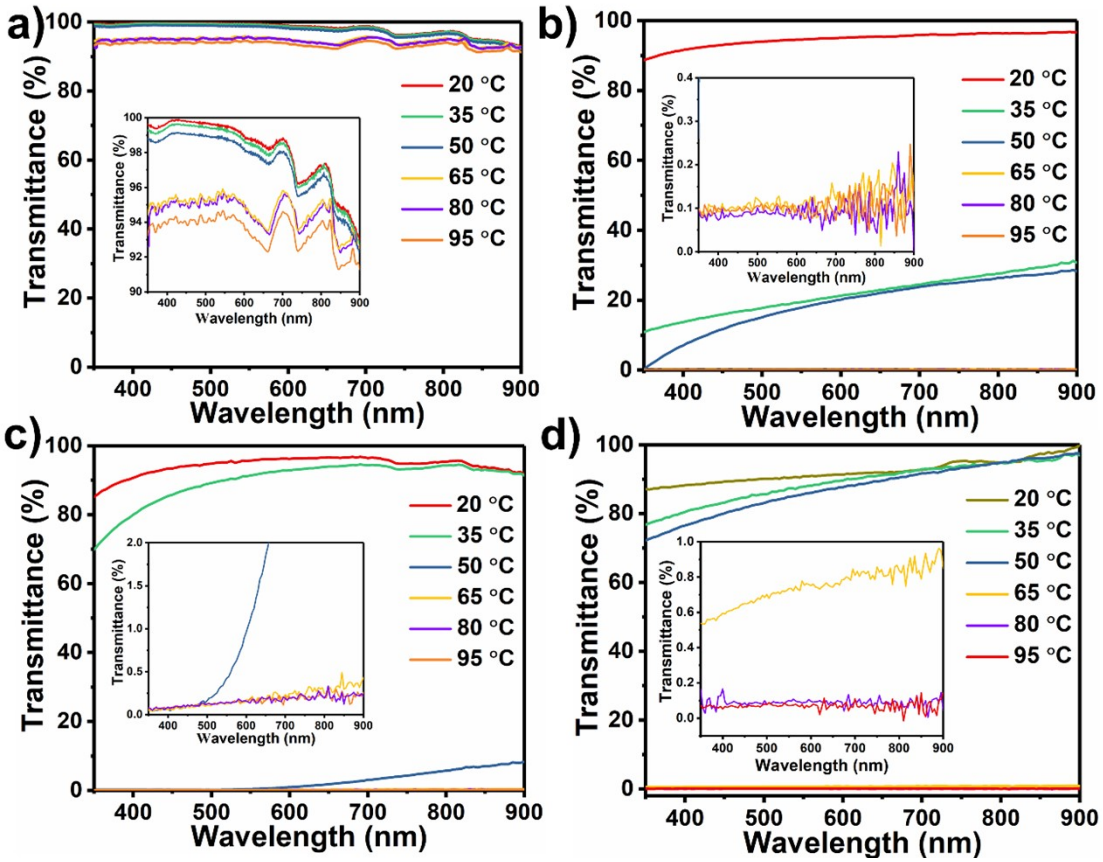

Figure S4. UV-vis spectra of a) LiCl, b) PN, c) PNBL, and d) PNAB as the temperature rises.

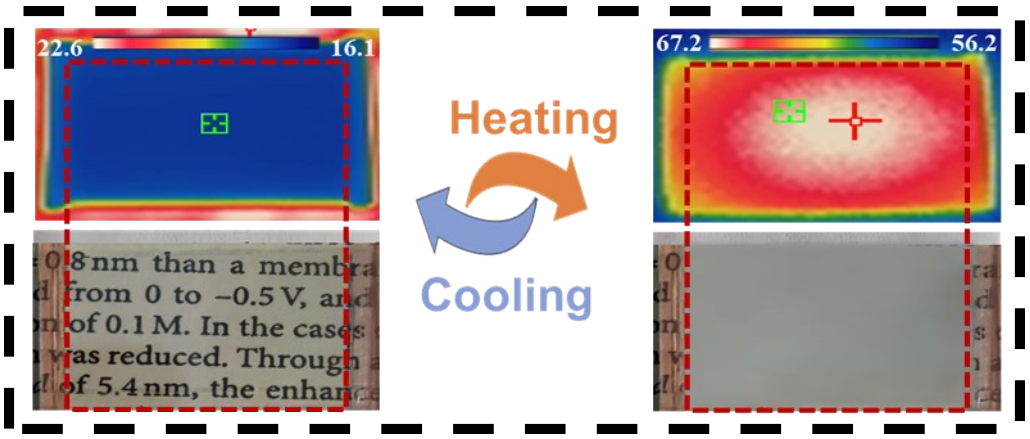

Figure S5. Infrared thermal images and their corresponding digital photos of the PNAB-based blank device.

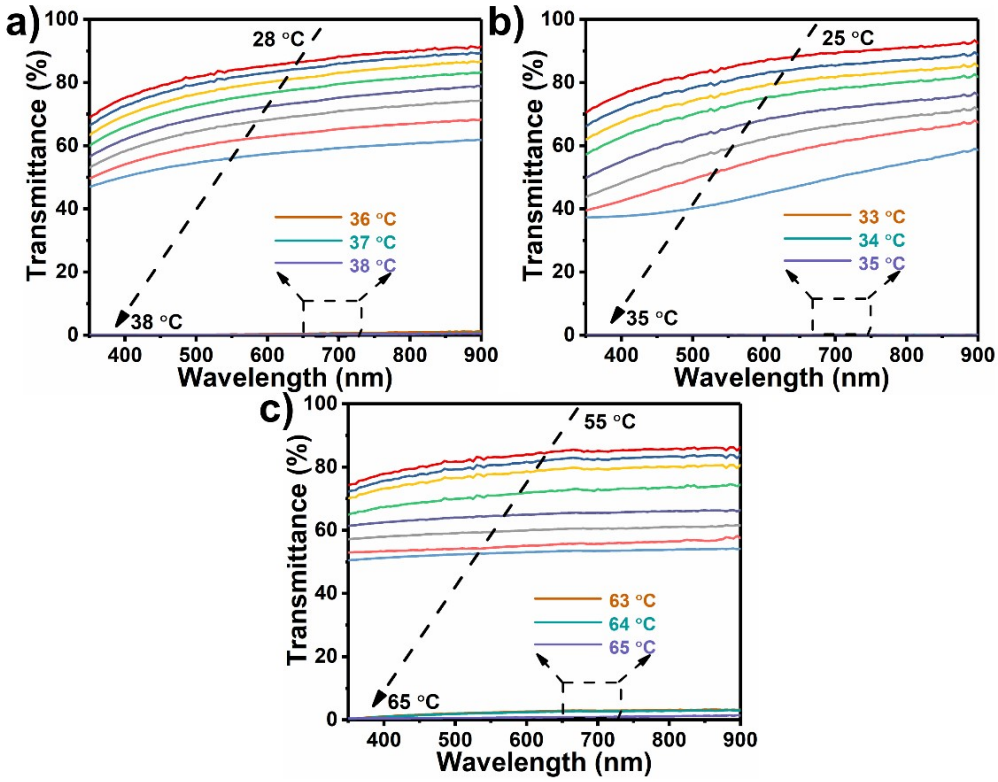

Figure S6. UV-vis spectra of the blank device based on a) PN, b) PNB, and c) PNAB as the temperature rises.

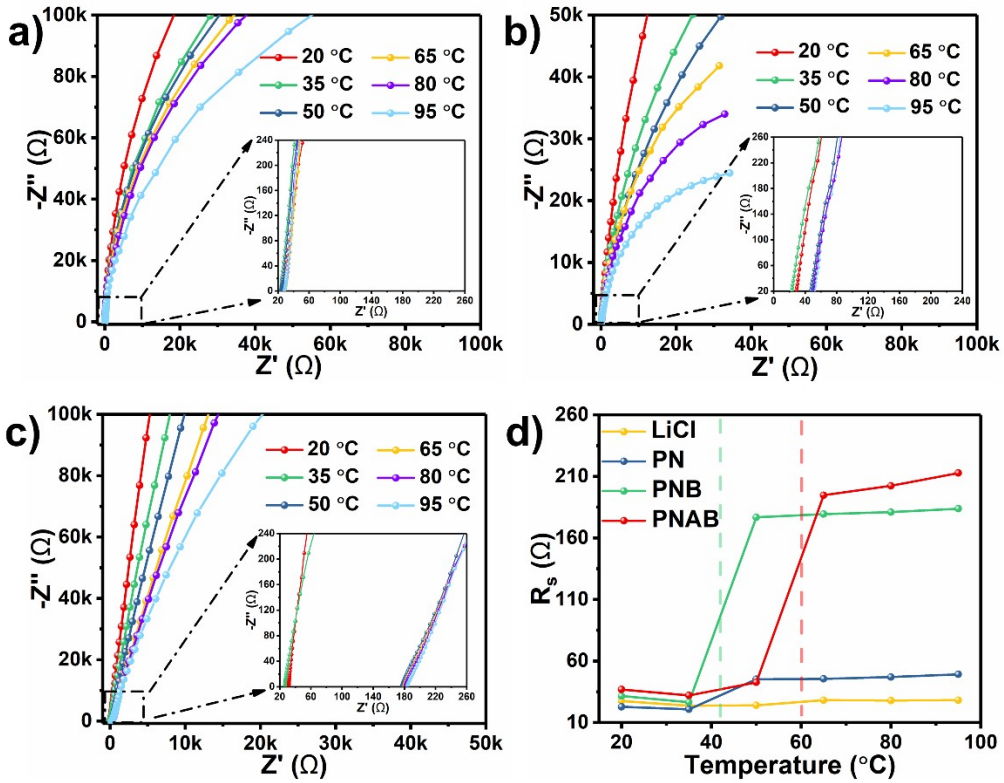

Figure S7. Nyquist plots of a) LiCl, b) PN, and c) PNB from 20 °C to 95 °C; d) Calculated solution resistance of four electrolytes.

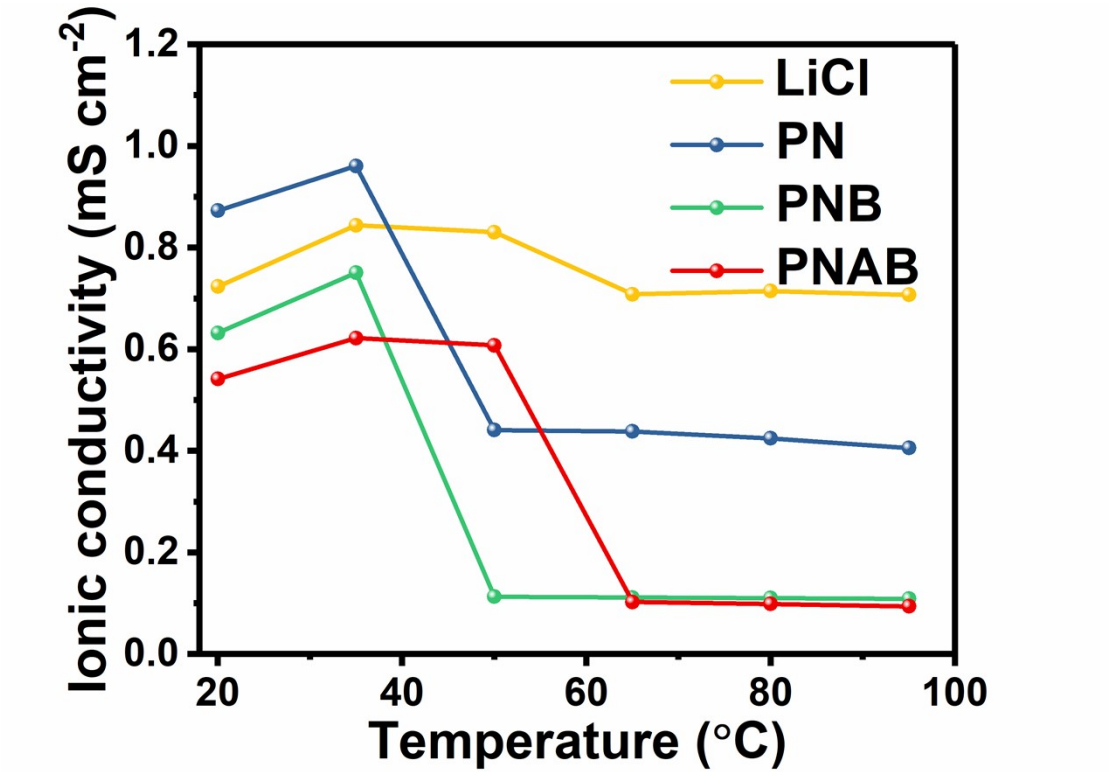

Figure S8. Ionic conductivity curves of these four electrolytes with temperature.

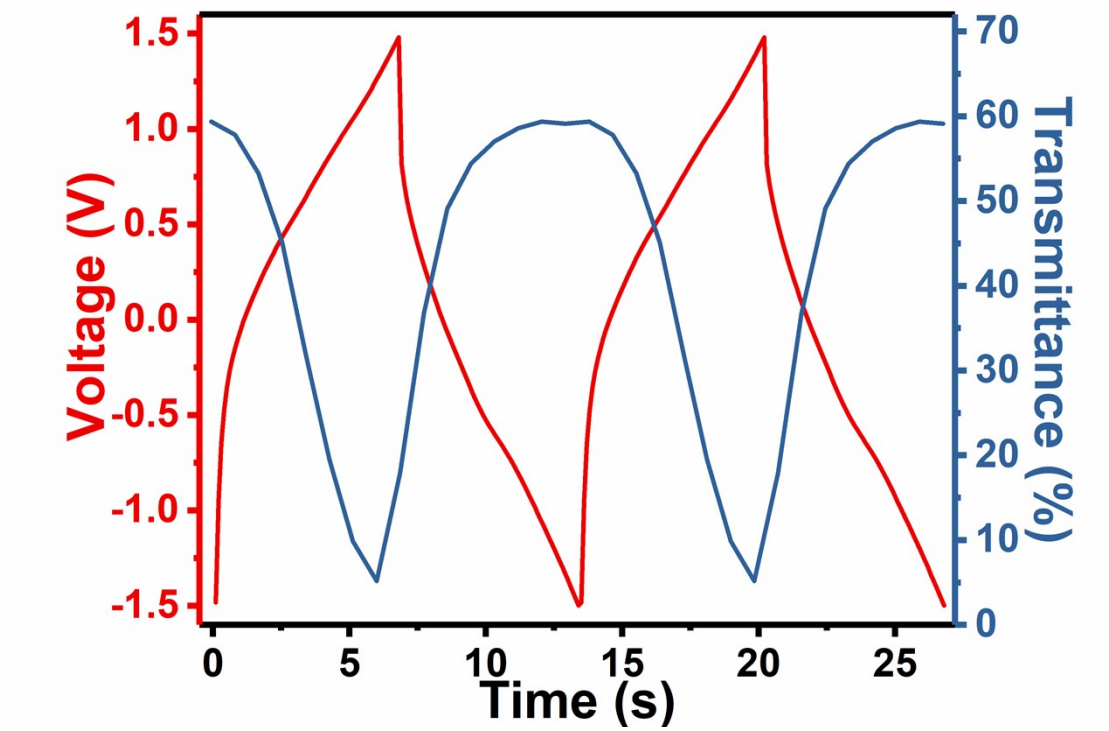

Figure S9. GCD properties and the transmittance changes at 1.0 mA cm^{-2}.

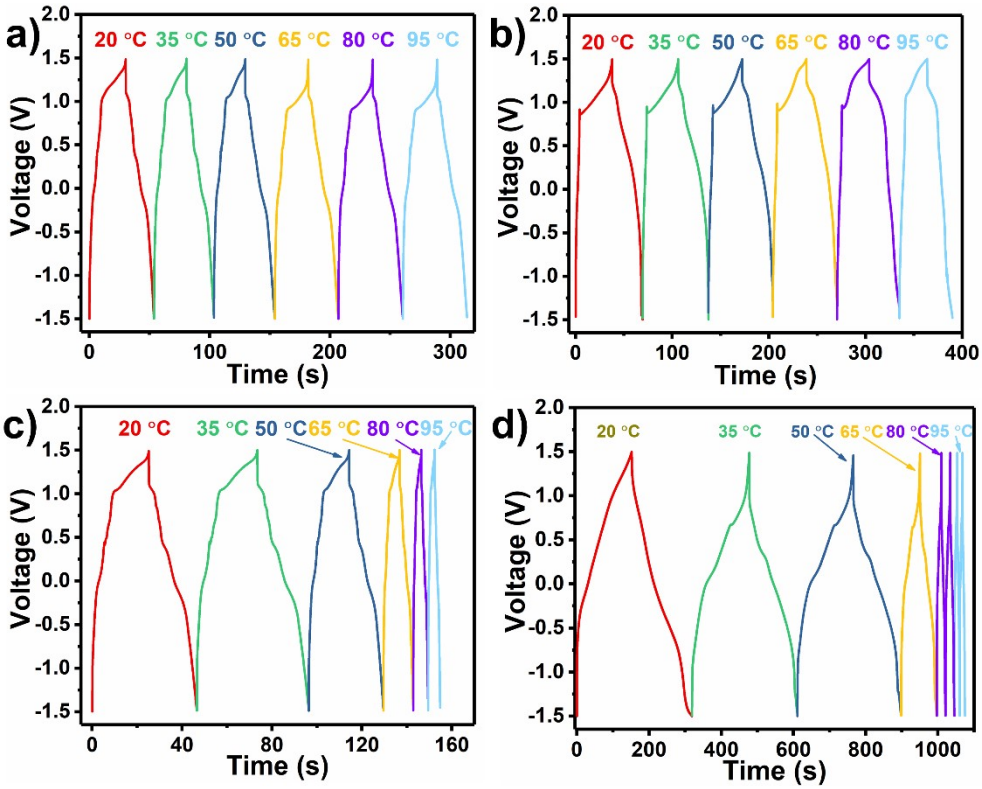

Figure S10. GCD curves of a) LiCl-SSC, b) PN-SSC, c) PNB-SSC, and d) PNAB-SSC from 20 °C to 95 °C.

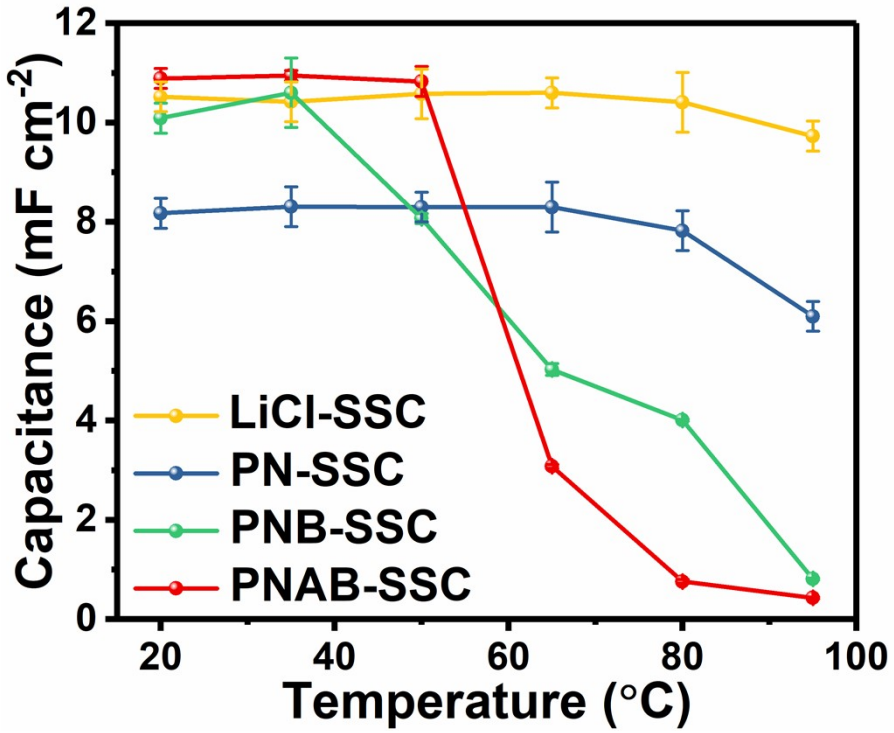

Figure S11. Capacitance curves of these four devices with temperature.

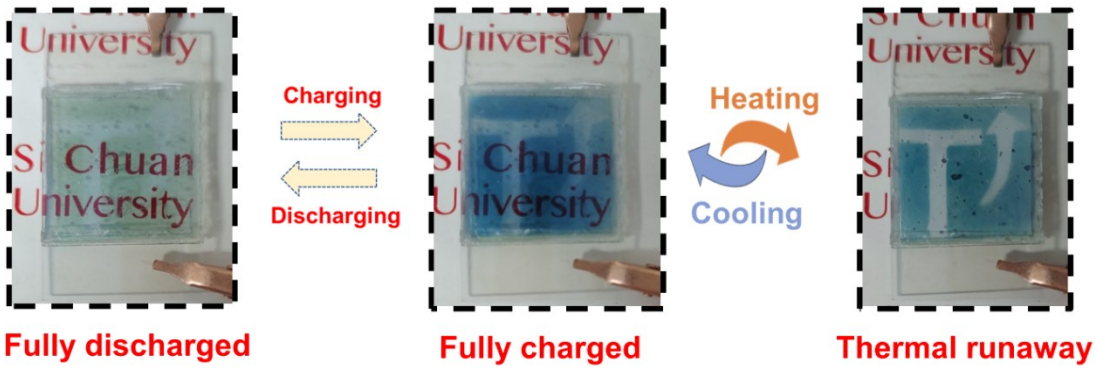

Figure S12. Digital images of charging, discharging, and thermal runaway states of PNABL-SSC with a pattern of the temperature rises (↑).