

Supporting Information

A salt-triggered multifunctional smart window derived from dynamic polyampholyte hydrogel

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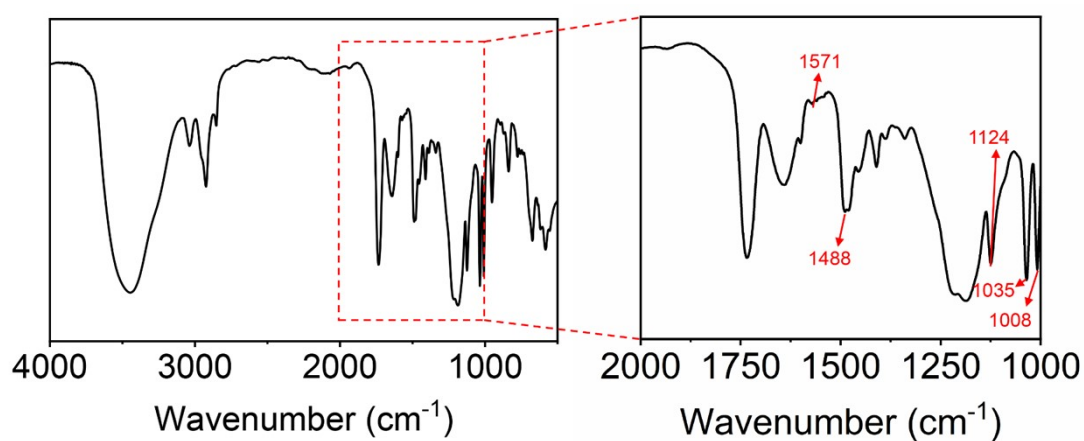


Fig. S1. The spectrum of Fourier transform infrared spectroscopy (FT-IR) of PAH.

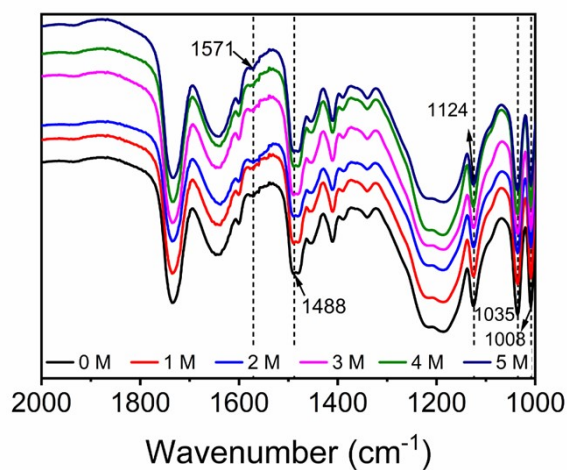


Fig. S2. The spectra of Fourier transform infrared spectroscopy (FT-IR) of PAH in 0, 1, 2, 3, 4, and 5 M NaCl(aq.).

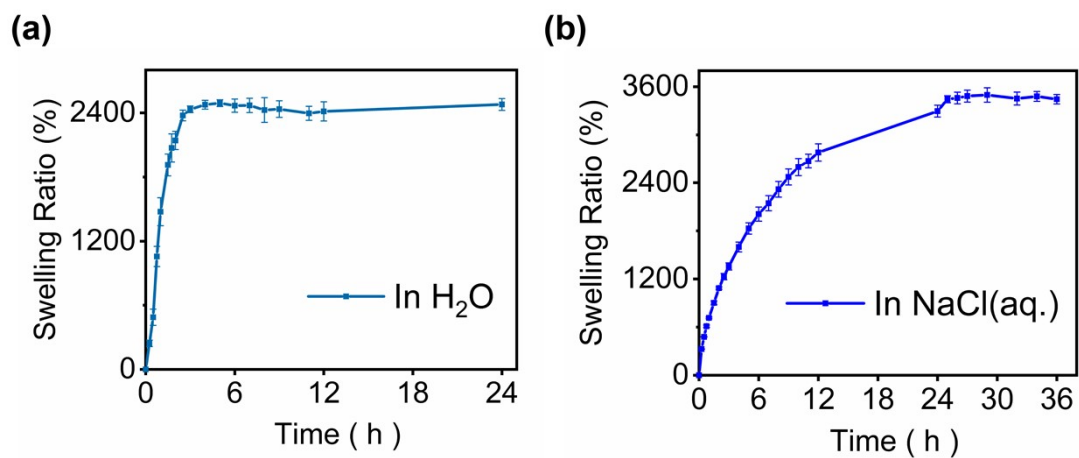


Fig. S3. The swelling curves of PAH in H_2O (a) and NaCl(aq.) (b). The calculation of the swelling

ratio was based on the weight of the dehydrated PAH.

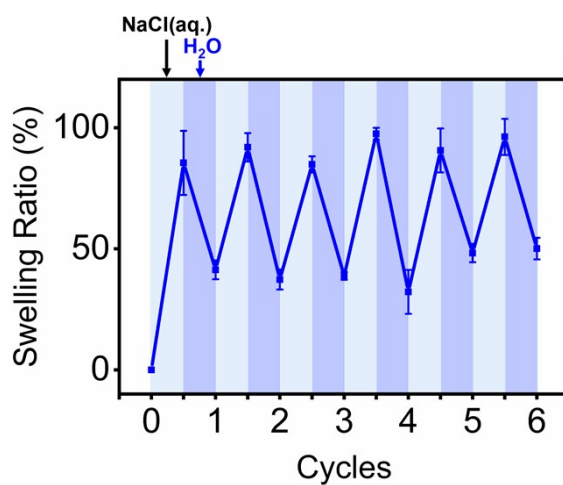


Fig. S4. The swelling ratio of PAH in alternate H₂O and NaCl(aq.). The calculation of the swelling ratio was based on the weight of the PAH equilibrating in H₂O.

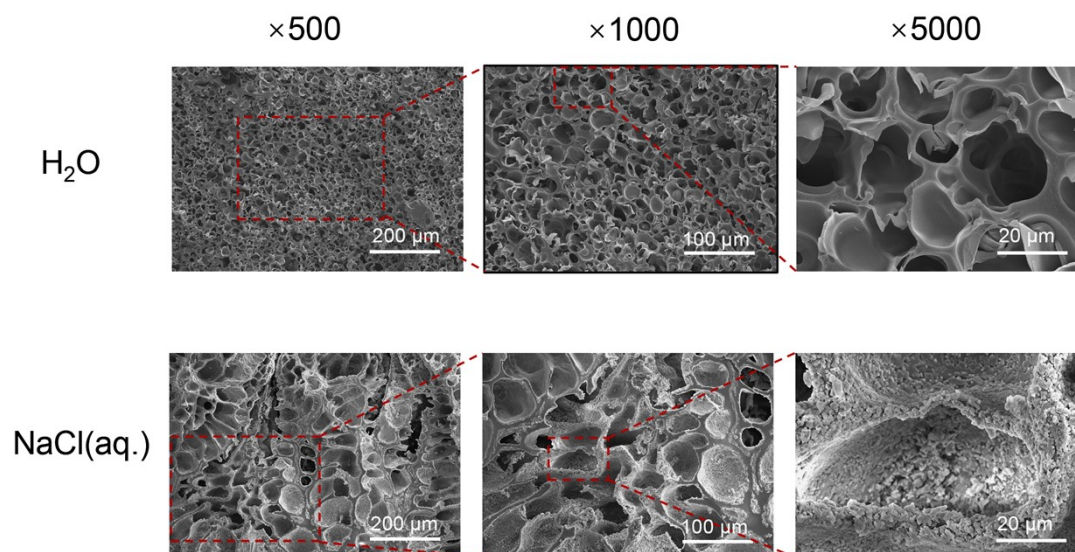


Fig. S5. The scanning electron microscopy (SEM) images of PAH in H₂O and NaCl(aq.).

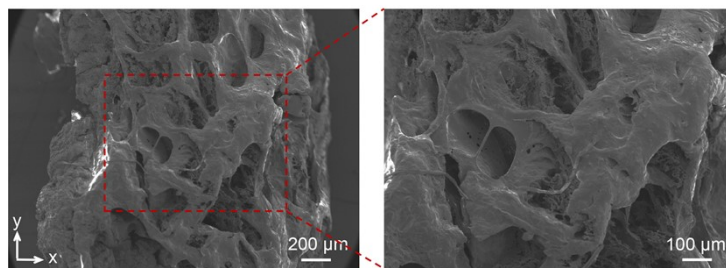


Fig. S6. SEM images showing cross section morphologies of self-healed PAH, and the direction of the crack before self-healing is along X axis.

Table S1 A comparison of light transmittance modulation efficiency of hydrogel smart windows reported recently

Materials	Mechanism	Transmittance modulation	Refs
Polyampholyte Hydrogel	Salt-triggered	~ 88 %	This work
PNIPAm/AgNW composite	Thermochromic	78.3%	1
W-doped VO ₂ -PMMA/spacer/low-E stack	Thermochromic	27.8 %	2
Redox metal ions/switchable dyes	Electrochromic	74%	3
PNIPAm/PAM/transparent wood	Thermochromic	82.7%	4
MBV [TFSI]/ferrocene/poly [VNIm][TFSI]	Electro- and thermo-chromic	74.9%	5
Ag/W ₁₈ O ₄₉ NM film and Al sheet	Electrochromic	41%	6
PNIPAm-BIS-crosslinked hydrogel	Thermochromic	~ 30%	7
Zn-Cu bimetals/prussian blue film	Electrochromic	~ 55%	8
PNIPAm Hydrogel particles	Thermochromic	~ 90%	9
PNIPAm-AEMA microparticles	Thermochromic	~ 80%	10
PNIPAm particles/Si-Al gel matrix	Thermochromic	~ 80%	11
PAAm-LiCl hydrogel	Electrochromic	70%	12

Supplementary References

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Supplementary Movies

Movie S1. The transparency shift of PAH in NaCl(aq.) with different concentrations

Movie S2. The application of PAH-derived smart window in modulating a landscape

Movie S3. The application of PAH-derived smart window in information management