

Anti-swelling hydrogels based on surfactant-polymer interactions for underwater sensing with excellent mechanical properties

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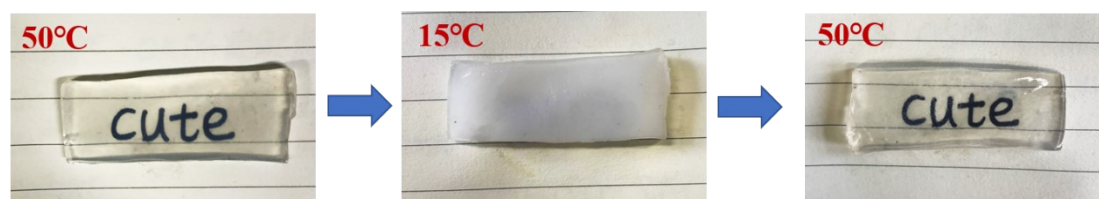


Figure S1. Transparent/opaque state of P(AA-SMA)-CMC-Na hydrogels at different temperatures.

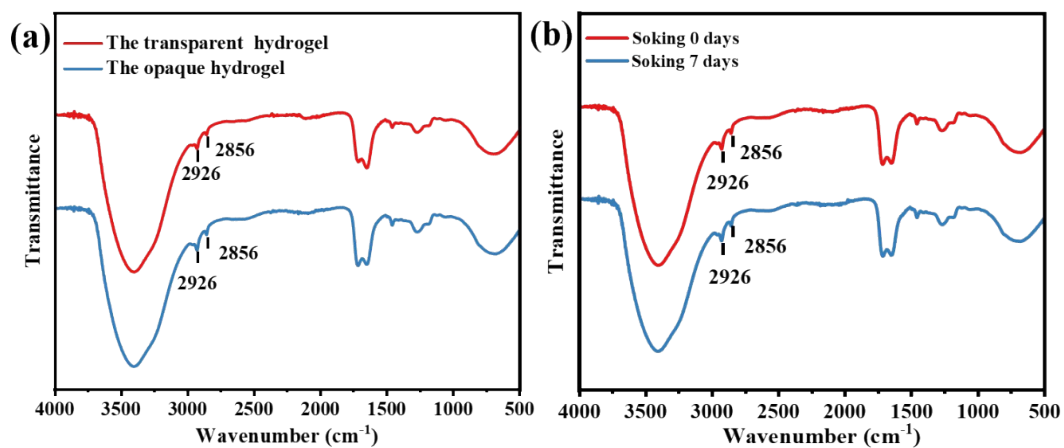


Figure S2. FTIR spectra of (a)transparent and opaque P(AA-SMA)-CMC-Na hydrogels,(b)freshly prepared hydrogel P(AA-SMA)-CMC-Na and P(AA-SMA)-CMC-Na hydrogel after soaking in water for seven days.

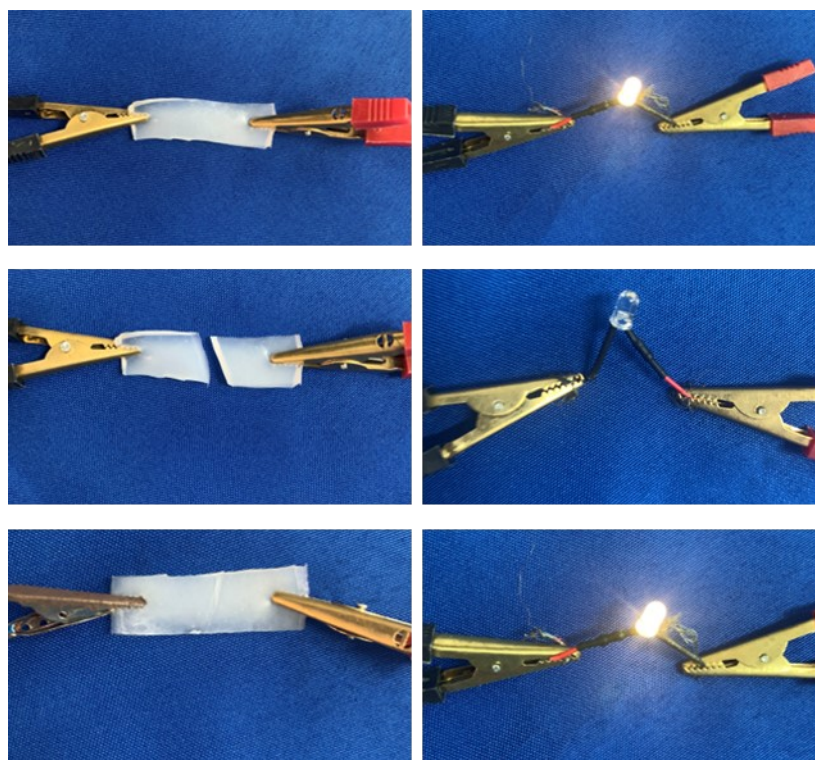


Figure S3. Self-repair of the conductive properties of P(AA-SMA)-CMC-Na hydrogels.

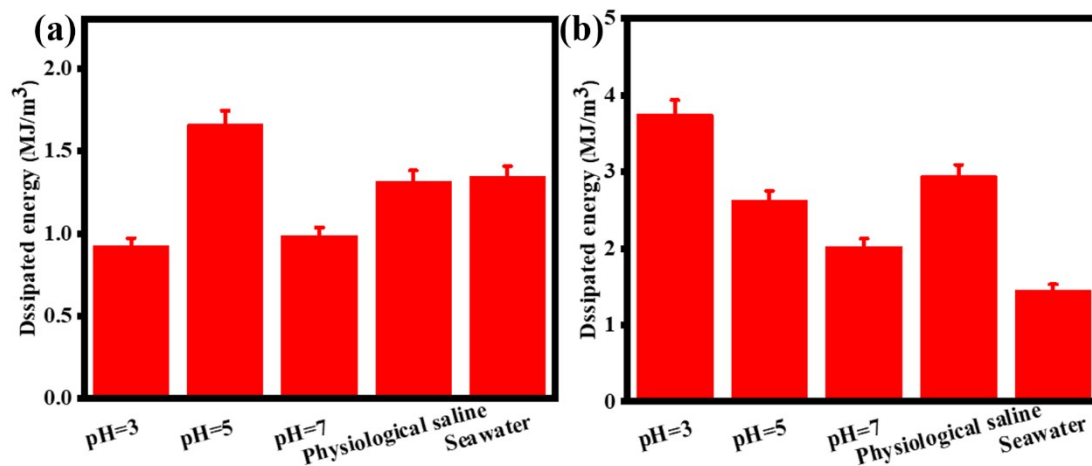


Figure S4. Toughness of P(AA-SMA)-CMC-Na hydrogels. (a) After one day of immersion in different solutions and (b) after 7 days of immersion.

Table S1. Status of mechanical properties of hydrogels after seven days of immersion in H₂O or saline.

Samples	Stress increase	Strain increase
DN-FT-HCl ¹	no	no
PU-5 ²	no	no
P(AA-MEA)-CS ³	yes	no
HP(AAm/AA)-CS ⁴	yes	no
NC-G40 ⁵	yes	no
This work	yes	yes

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