Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Electronic Supplementary Information

Conductive hydrogels with core-shell structures to realize super-stretchable, highly sensitive, anti-dehydrating, non-freezing and self-adhesive capabilities

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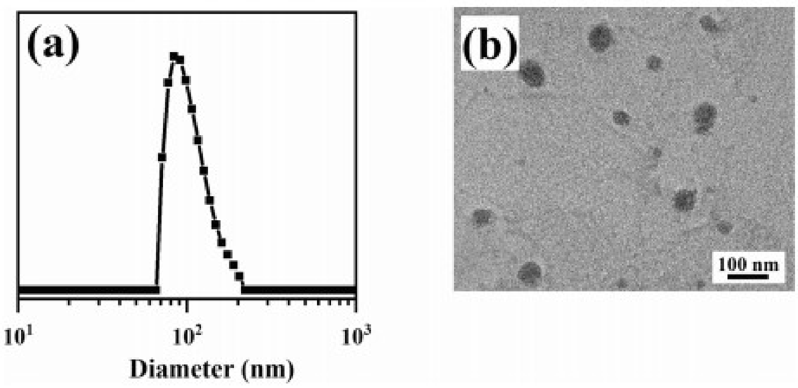

Fig. S1. The DLS result (a) and TEM image (b) of micelle-like aggregates.

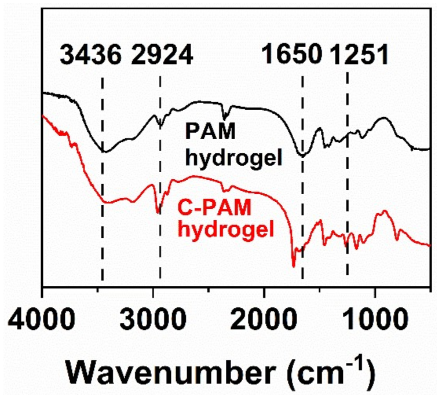

Fig.S2 FT-IR spectra of PAM gel and C-PAM gel.

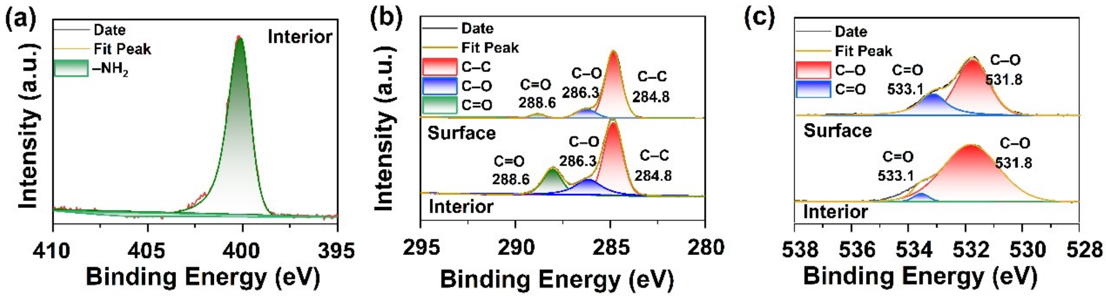

Fig.S3 Curve-fitted N1s XPS spectra interior C-PAM hydrogel (a). Curve-fitted C1s (b) and O1s (c) XPS spectrum interior and surface C-PAM hydrogel.

Fig.S4 C-PAM hydrogel upon stretching.

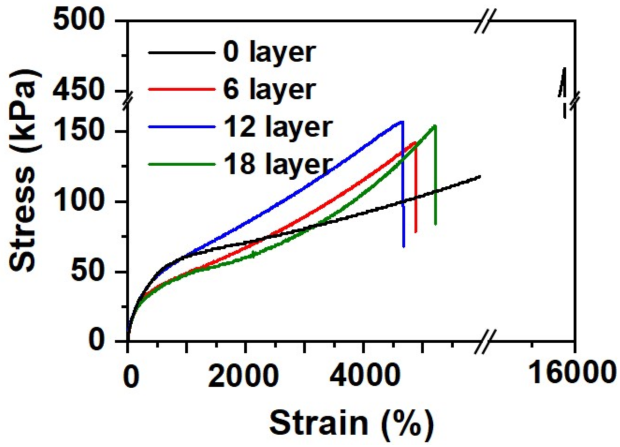

Fig.S5 Stress-strain curves of PAM hydrogel with different PBA layers.

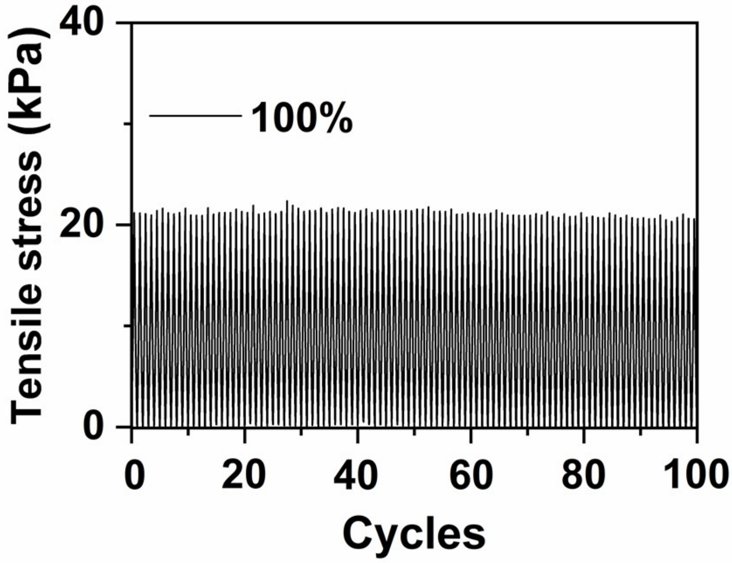

Fig. S6 100 loading–unloading cycles of the C-PAM hydrogel at a tensile strain of 100%.

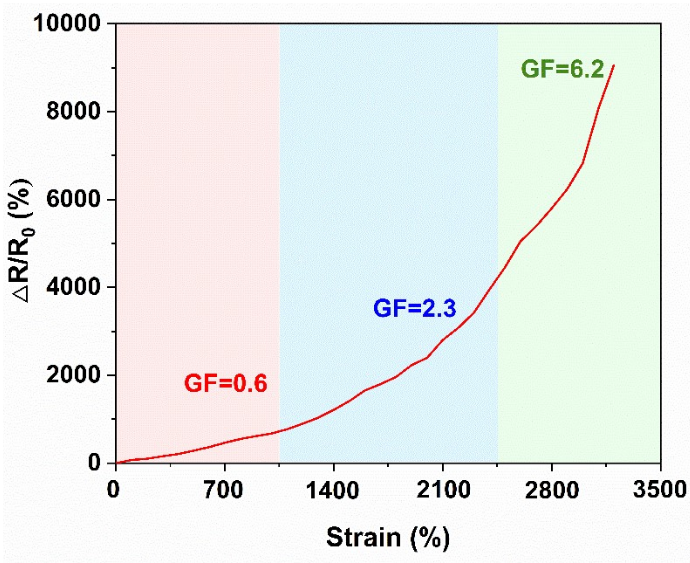

Fig.S7 GF of C-PAM hydrogel after storing at ambient conditions for 7 days.

Table S1. Comparison of existing gels in terms of GF, strain, self-adhesion, freeze-resistant, and anti-drying property.

Sample	GF	Strain (%)	Self-adhesion	Freeze-resistant	Anti-drying property	Reference
C-PAM	6.41	5200	Yes	Yes	84% (after 7 days)	This Work
PEG/$CaCl_2$	1.87	400	No	Yes	85% (after 1day)	[1]
AM/$CaCl_2$/NaBr	3.13	773	No	Yes	70% (after 7 days)	[2]
PVA/AMY/NaCl	2.55	706	No	Yes	85% (after 7 days)	[3]
AA/MEA/CMC	3.60	865	No	Yes	76% (after 15 days)	[4]
NaSS/APS/TEMED	0.75	1000	No	Yes	~60% (after 7 days)	[5]

Sodium alginate /DMEM/$CaCl_2$	4.11	300	Yes	Yes	~85% (after 7 days)	[6]
Clay/MEO_2MA/TEMED	2.23	1392	No	Yes	~51% (after 2 days)	[7]

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