

## Supplementary material

### **Polyelectrolyte-derived adhesive, super-stretchable hydrogel for a stable, wireless wearable sensor**

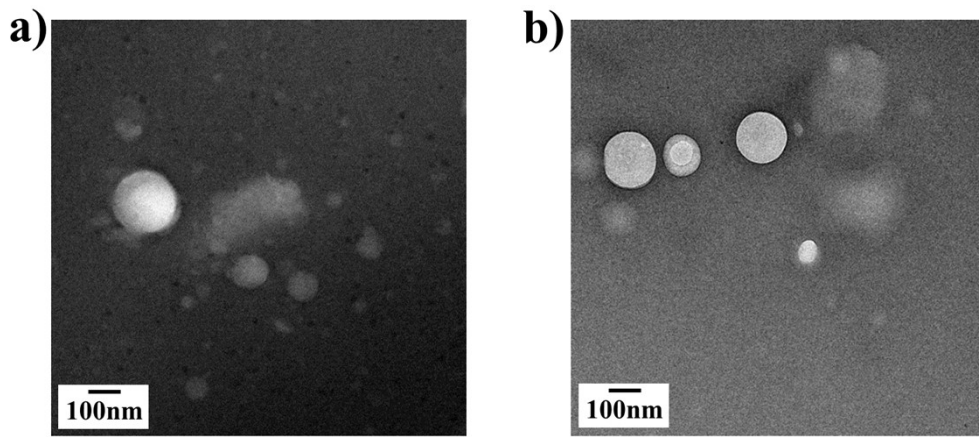
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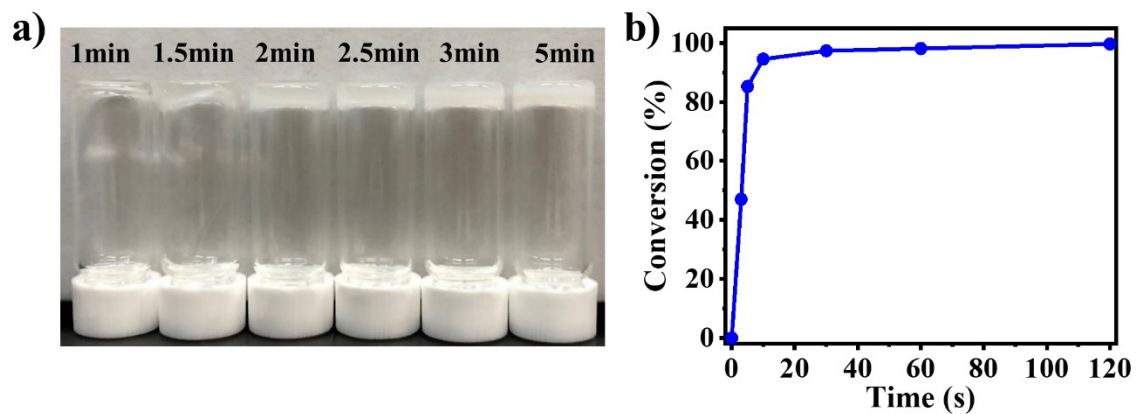
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**Fig. S1.** TEM images of SC micelle. (a) SC micelles solution in DI water, (b) SC micelles solution in precursor solution.



**Fig. S2.** (a) Photo image of P(AMPSs-co-AAm)/SC hydrogel for different UV curing times 1min, 1.5min, 2min, 2.5min, 3min and 5min, respectively. (b) UV conversion graph of P(AMPSs-co-AAm)/SC hydrogel for different UV curing times 3min, 5min, 10min, 30min, 60min and 120min, respectively.

Hydrogels	AMPS (g)	AAm (g)	SC (g)	MBAA (mL)	Irgacure2959 (g)	H <sub>2</sub> O (mL)	Water content (%)
<b>P(AMPSs-co-AAm)</b>	2	2	0	0.06	0.03	7	72.9
<b>P(AMPSs-co-AAm)-SC</b>	2	2	0.6	0.072	0.036	8.5	72.7
<b>0wt%-SC</b>	2	2	0	0.06	0.03	7	72.9
<b>10wt%-SC</b>	2	2	0.3	0.066	0.033	7.5	72.3
<b>20wt%-SC</b>	2	2	0.6	0.072	0.036	8.5	72.7
<b>30wt%-SC</b>	2	2	0.9	0.078	0.039	9	72.2
<b>AMPSs/AAm=3:1</b>	3	0.5	0	0.04	0.02	4	73.5
<b>AMPSs/AAm=1:1</b>	3	1.5	0	0.06	0.03	6.5	72.9
<b>AMPSs/AAm=1:2</b>	2	2	0	0.06	0.03	7	72.9
<b>AMPSs/AAm=1:3</b>	2	3	0	0.08	0.04	9.5	72.6

**Table. S1.** Composition ratio according to P(AMPSs-co-AAm)/SC hydrogel components.