

Supporting Information

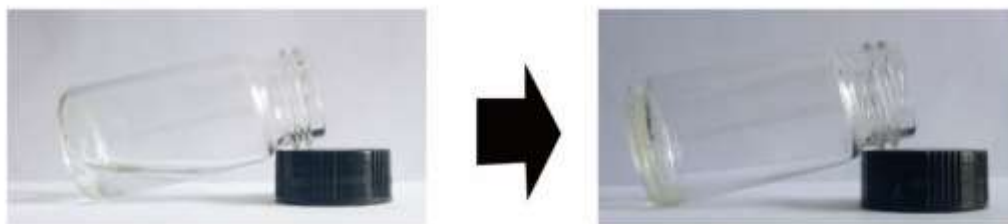


Figure S1. Photographic images that showed the transition of PAM hydrogel (left to right)

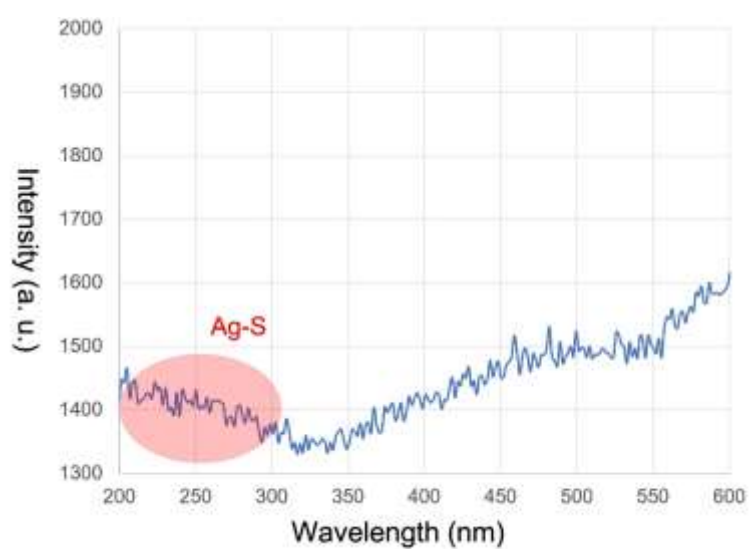


Figure S2. Raman curve of the PAM-Ag⁺ hydrogel

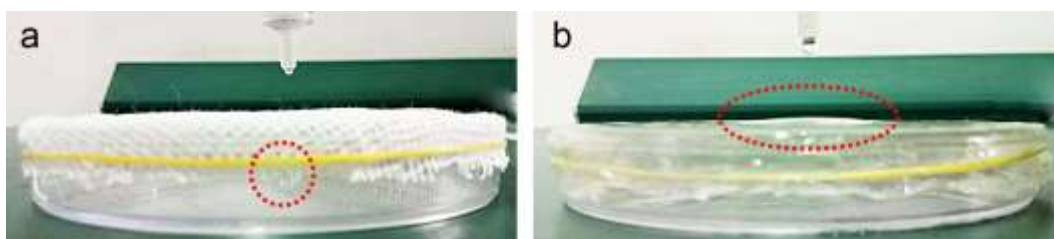


Figure S3. Water resistance of gauze(a) and PAM-Ag⁺ hydrogel (b).

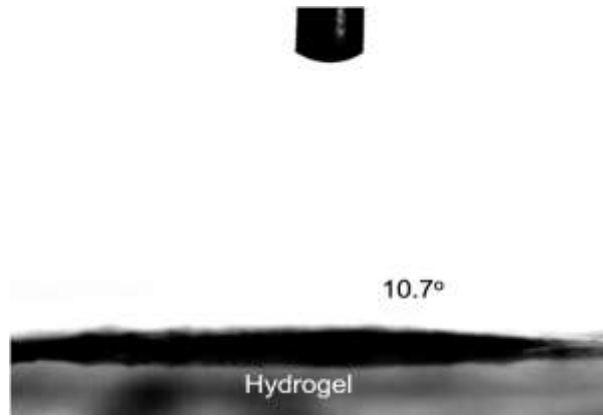


Figure S4. The contact angle of the PAM-Ag⁺ hydrogel

Table S1. Swelling properties of PAM-Ag⁺ hydrogels (n=3)

	Silver ion concentration of PAM-Ag ⁺ hydrogel (mM)			
	0	0.115	0.23	1.15
SR (%)	445.77 ± 31.46	512.76 ± 8.48	503.85 ± 3.34	495.15 ± 5.27

Table S2. The results of short-term skin irritation on complete (C) and damaged (D) skin of Guinea pig (n=8)

groups	Average skin irritation response score		
	0 h	24 h	48 h
Hydrogel (C)	0.125	0	0
Control (C)	0	0	0
Hydrogel (D)	0.250	0.125	0
Control (D)	0	0	0

Table S3 The standard of skin irritation

Skin irritation (spiloplaxia)	score	Skin irritation (hydroncus)	score
No	0	no	0
Barely visible	1	Barely visible	1
moderate	2	Clear skin contour	2
serious	3	Edema bulge 1 mm and wider	4
mauve	4	Total score	8

Table S4 The evaluation of skin irritation

intensity	score
No irritation	$0 \leq x < 0.5$
Mild irritation	$0.5 \leq x < 2$
Moderate irritation	$2 \leq x < 6$
Strong irritation	$x > 6.0$

Table S5 The results of long-term skin irritation on complete(C) and damaged (D)skin of Guinea pig (n=8)

groups	Average skin irritation response score		
	0 h	24 h	48 h
Hydrogel (C)	0	0	0
Control (C)	0	0	0
Hydrogel (D)	0.125	0	0
Control (D)	0	0	0

Table S6 The classification of sensitization rate

Sensitization rate (%)	Allergic reaction intensity	level
0-10	weak	I
20-30	mild	II
40-60	moderate	III
70-80	high	IV
90-100	extreme	V

Table S7 The results of skin sensitization on the skin of Guinea pig (n=10)

Groups	Average skin irritation response score		
	24 h	48 h	72 h
Hydrogel	0	0	0
Positive	3.8	3.4	2.8

Table S8 The standard of skin sensitization

Skin sensitization	score	Skin sensitization	score
(spiloplaxia)		(hydroncus)	
no	0	no	0
mild	1	mild	1
moderate	2	moderate	2
severe	3	severe	3
dropsical	4	Total score	7