

Supplementary Information

“Soft and Hard” Bioinspired Hydrogel for Enhanced Pressure Sensing

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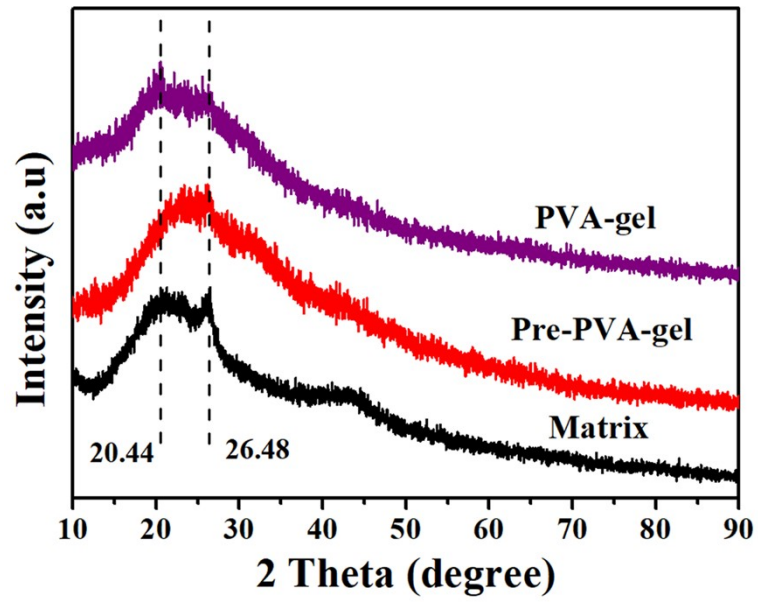


Fig. S1. XRD patterns of each product of PVA/MWCNT/CF gel transformation.

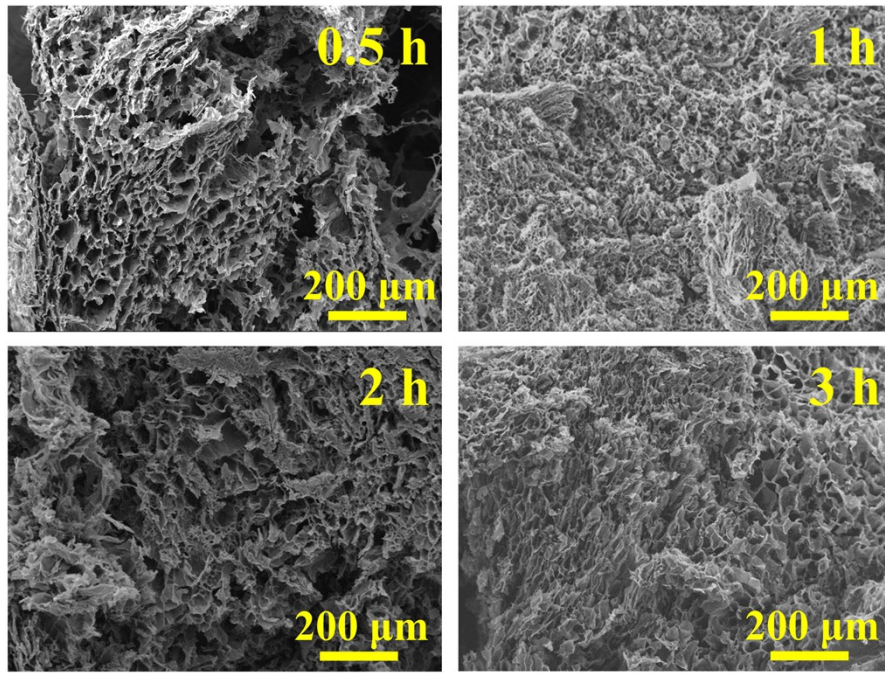


Fig. S2. SEM images of the cross-section of PVA/MWCNT/CF gels with different immersion times.

Table S1. XPS elemental analysis of PVA/MWCNT/CF gels with different immersion times.

Atomic %	0.5 h	1 h	2 h	3 h	1 h-PVA/CF
C	65.9	67.91	66.32	65.78	63.1
N	10.86	10.01	10.66	10.62	12.45
O	19.46	17.86	18.81	19.89	22.4
S	1.37	1.6	1.49	1.37	0.49
Na	1.59	1.71	1.71	1.65	0.74
Cr	0.81	0.91	1	0.69	0.82

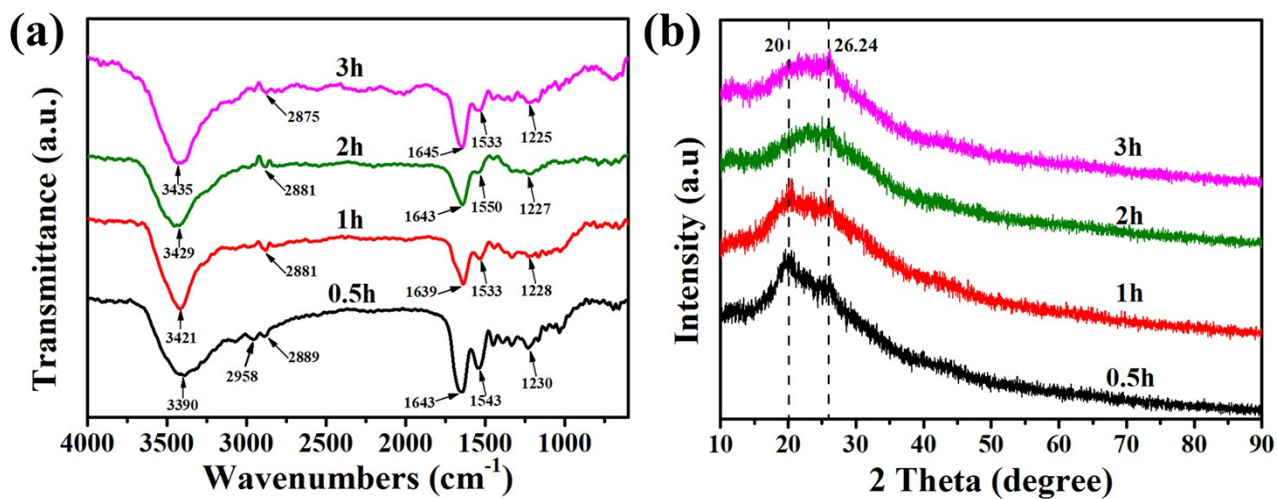


Fig. S3. (a) FTIR and (b) XRD patterns of PVA/MWCNT/CF gels with different immersion times.

Table S2. GF values of PVA/MWCNT/CF gels with different immersion times.

	0-10%	10-15%	15-40%
0.5 h	13.11	19.24	24.89
1 h	58.01	157.29	75.74
2 h	25.77	41.24	53.84
3 h	8.27	10.75	23.58

Table S3. Sensitivities of PVA/MWCNT/CF gels with different immersion times.

	I	II	III
0.5 h	0.94 kPa ⁻¹ (0-4 kPa)	0.25 kPa ⁻¹ (4-10 kPa)	0.10 kPa ⁻¹ (10-42 kPa)
1 h	4.20 kPa ⁻¹ (0-3 kPa)	1.09 kPa ⁻¹ (3-9 kPa)	0.28 kPa ⁻¹ (9-54 kPa)
2 h	1.99 kPa ⁻¹ (0-2.7 kPa)	0.73 kPa ⁻¹ (2.7-7 kPa)	0.18 kPa ⁻¹ (7-65 kPa)
3 h	0.92 kPa ⁻¹ (0-2.5 kPa)	0.36 kPa ⁻¹ (2.5-6 kPa)	0.10 kPa ⁻¹ (6-40 kPa)

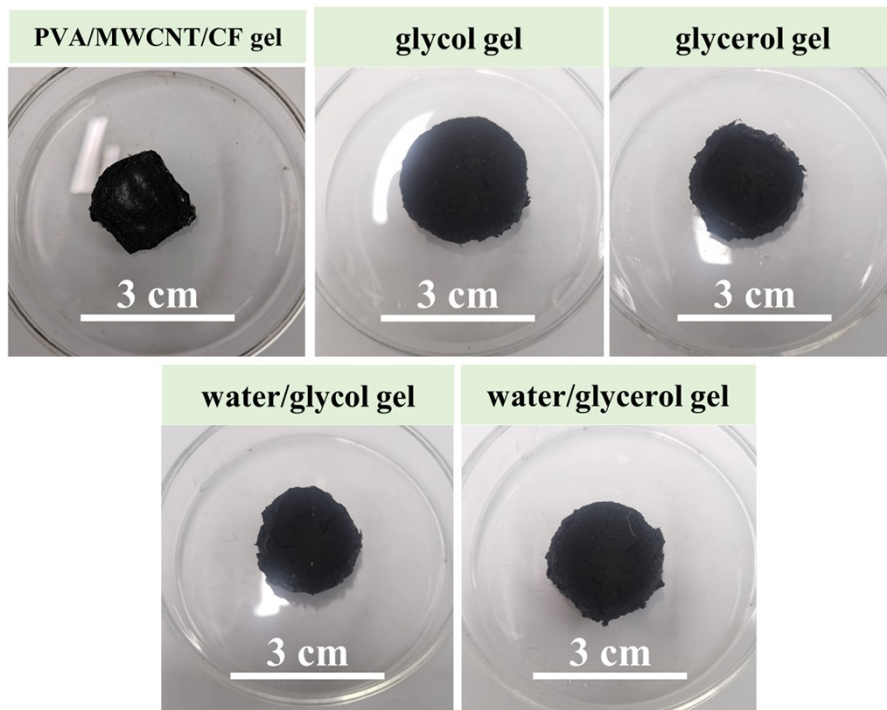


Fig. S4. Digital images of PVA/MWCNT/CF gel and various organohydrogels in ambient conditions after 7 days.

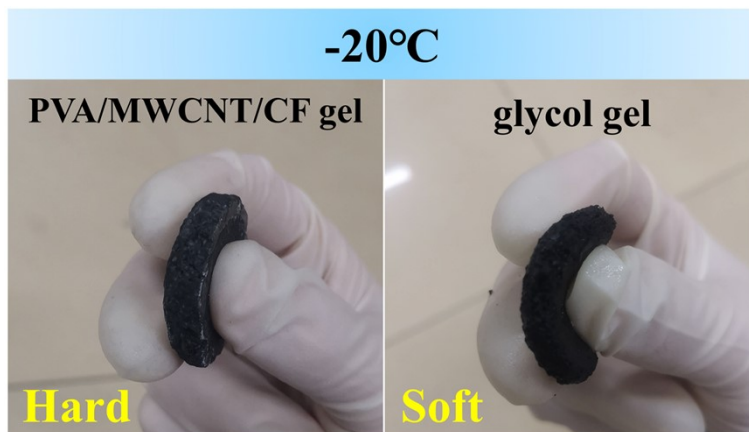


Fig. S5. Digital images of PVA/MWCNT/CF gel and glycol gel at -20°C