

# SUPPLEMENTARY INFORMATION FOR

## Self-Healable PEDOT:PSS-PVA Nanocomposite Hydrogel Strain Sensor for Human Motion Monitoring

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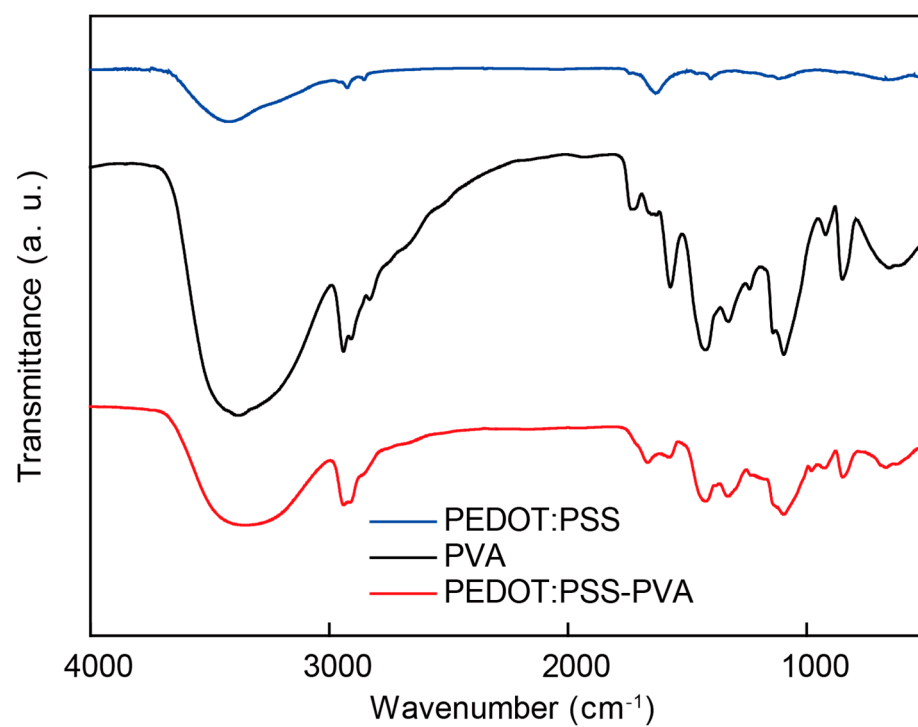
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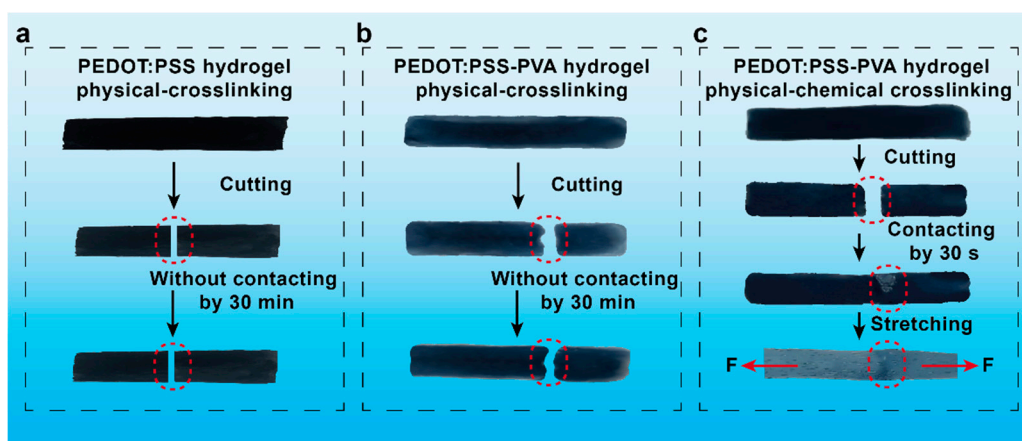
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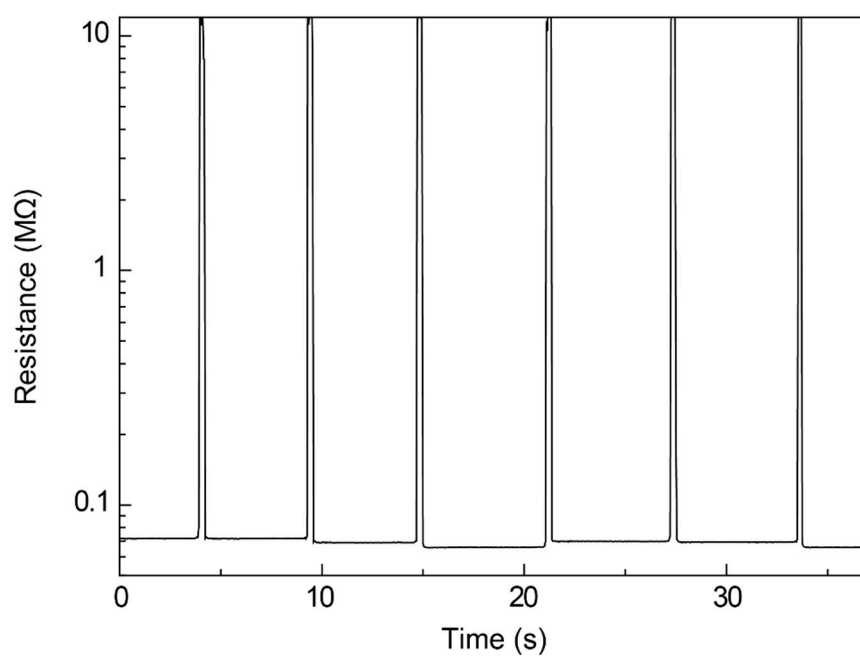
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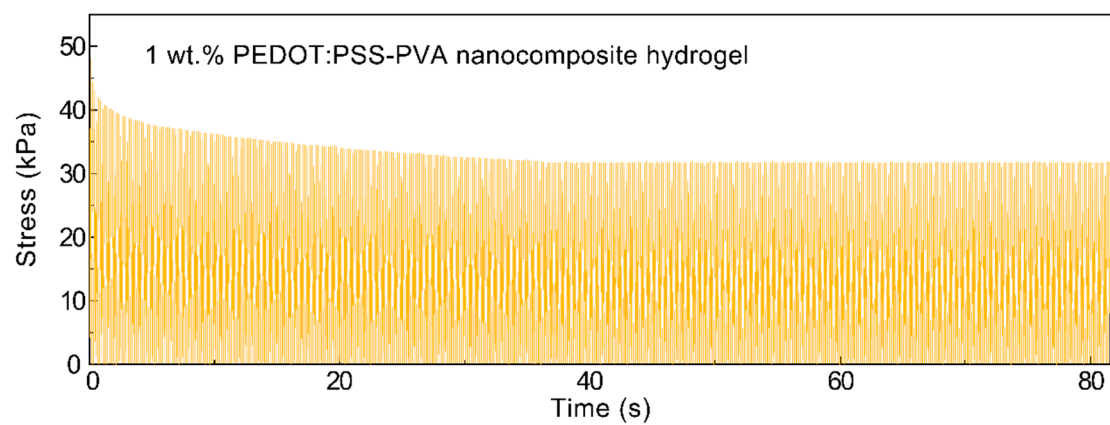
**Figure S1.** FTIR spectra of PVA, PEDOT:PSS, and PEDOT:PSS-PVA nanocomposite hydrogel.



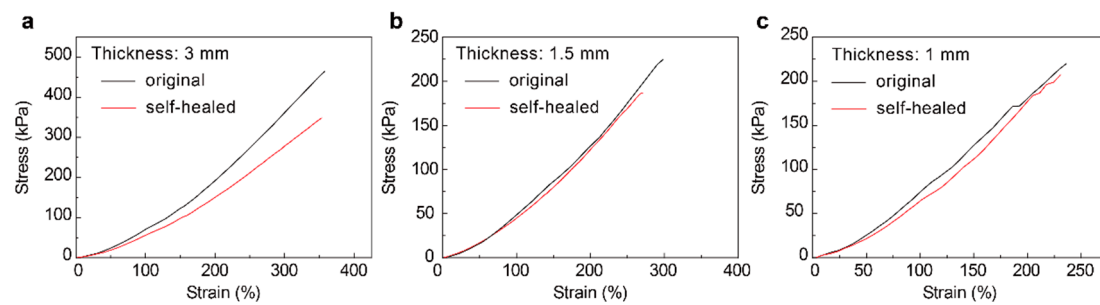
**Figure S2.** Photographs of the self-healing behavior of physical-crosslinked pure PEDOT:PSS hydrogel (a), PEDOT:PSS-PVA composite hydrogel (b), and physical-chemical crosslinked PEDOT:PSS-PVA nanocomposite hydrogel in this work (c).



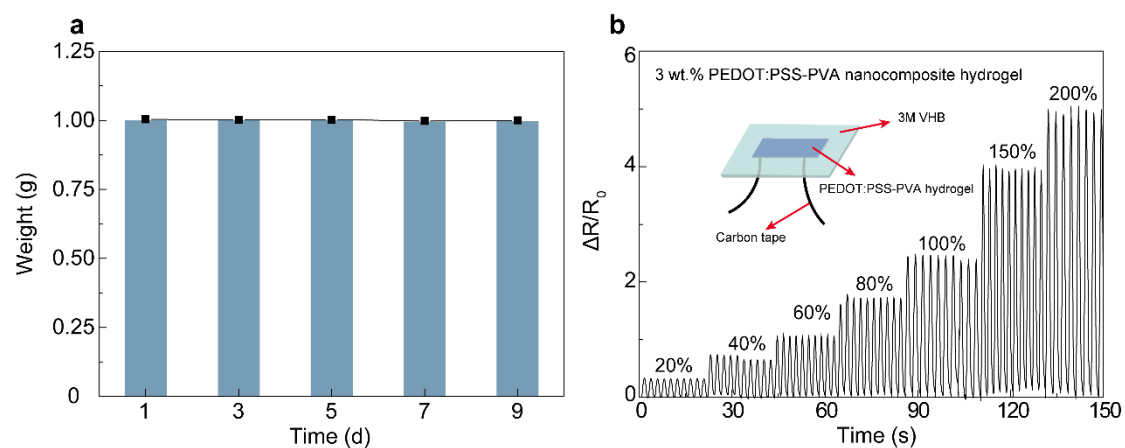
**Figure S3.** Resistance recovery of the PEDOT:PSS-PVA nanocomposite hydrogel during the cutting-healing cycle.



**Figure S4.** Loading-unloading mechanical performance of 1 wt.% PEDOT:PSS-PVA nanocomposite hydrogels at 400 cycles.



**Figure S5.** Typical stress-strain curves of the original and healed PEDOT:PSS-PVA nanocomposite hydrogels with (a) 1 mm, (b) 1.5 mm, and (c) 3mm.



**Figure S6.** (a) Weight changes of PEDOT:PSS-PVA nanocomposite hydrogel strain sensors within 9 days. (b) Strain sensing performance of 3 wt.% PEDOT:PSS-PVA nanocomposite hydrogel strain sensor under various strains after 9 days.

**Table R2 (as Table S1).** Compositions of PEDOT:PSS-PVA nanocomposite hydrogels

Hydrogel sample	m (7wt.% PEDOT:PSS)	m (7wt.% PVA)
1 wt.% PEDOT:PSS-PVA	1 g	99 g
3 wt.% PEDOT:PSS-PVA	1 g	32.33 g
5 wt.% PEDOT:PSS-PVA	1 g	19 g
10 wt.% PEDOT:PSS-PVA	1 g	9 g
15 wt.% PEDOT:PSS-PVA	1 g	5.66 g