Supplementary Information

A metal-organic framework enhanced single network organohydrogel with superior low-temperature adaptability and UV-blocking capability towards human-motion sensing

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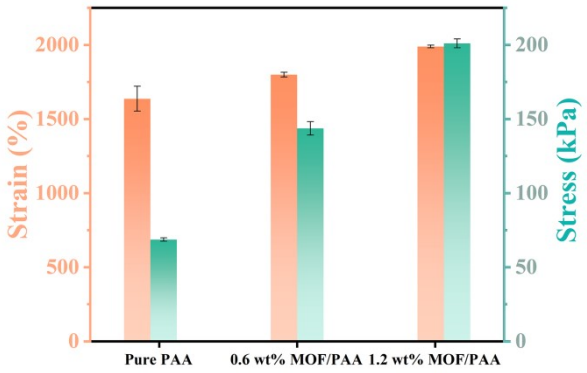

Fig. S1. The tensile strain and stress of the pure PAA, 0.6 wt% MOF/PAA and 1.2 wt% MOF/PAA SN organohydrogels.

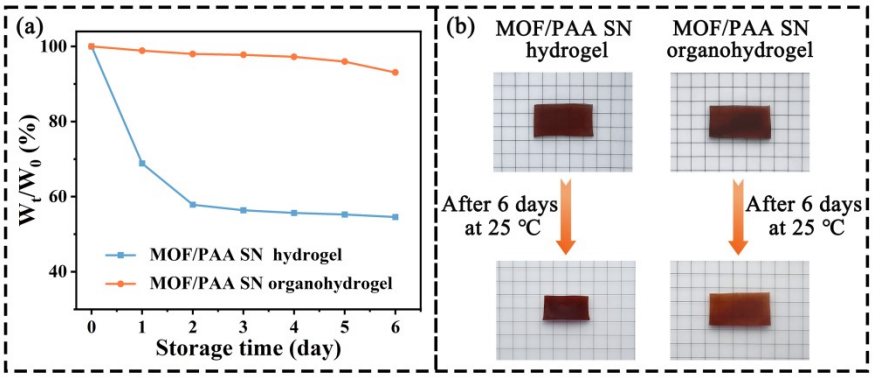

Fig. S2. (a) The weight variation of the MOF/PAA SN hydrogel and organohydrogel during 6 days at 25 °C. (b) Photographs showing the volume variation of the MOF/PAA SN hydrogel and organohydrogel after 6 days at 25 °C.

The water retention property of as-prepared gel samples (40 mm × 25 mm × 2 mm) have been investigated in an incubator at 25 °C by weighing method. As shown in Fig. S2 and S3, due to the evaporation of internal water, it can be clearly seen that the MOF/PAA SN hydrogel without glycerol could only retain 54% of its original weight and display a significant reduction in volume after 6 d at 25 °C. However, the MOF/PAA SN organohydrogel could possess 93% weight-retention ratio and still maintain its excellent flexibility, indicating that the strong hydrogen bonding interactions between glycerol and water molecules effectively impeded the evaporation of internal water, and thus endowing the MOF/PAA SN organohydrogel with superior moisturizing property.

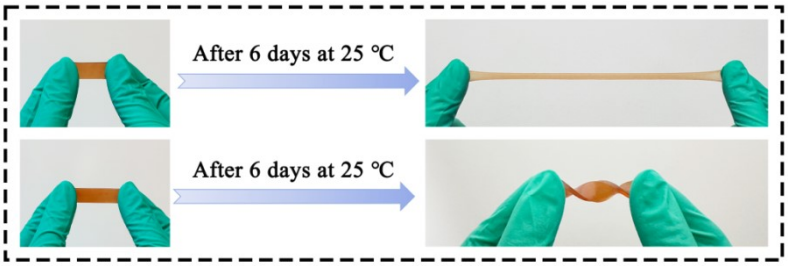

Fig. S3. Photographs showing the excellent flexibility of the MOF/PAA SN organohydrogel after 6 days at 25 °C.