Supporting Information

Flexible Semitransparent Dual-electrode Hydrogel based Triboelectric Nanogenerator with Tough Interfacial Bonding and High Energy Output

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In order to enhance the interfacial adhesion between PAM hydrogel and TPU/PDMS layer, the effect of BP concentration and treatment time was investigated. As shown in Figure S1, it was found that the BP modification showed similar trends when modifying TPU and PDMS. The tear strength generally increased as the increase of BP concentration and treatment time. However, it was found that when the treating time exceeds 5 min, the improvement is very limited, and when the solution concentration is greater than 10%, the BP on the interface could not be fully reacted and would affect the transparency of the composite film. Therefore, the BP concentration of 10% and treatment time of 5 min were used as the optimum parameter in the experiments.

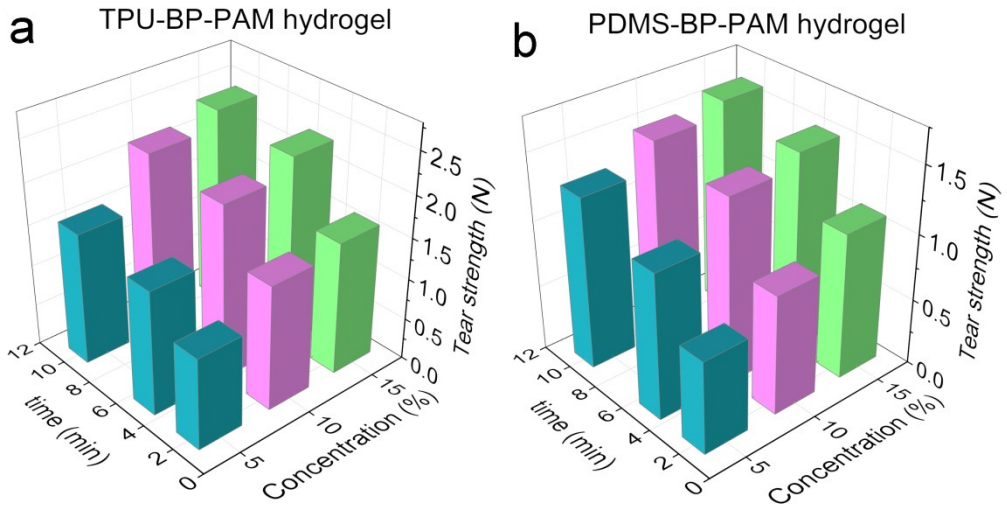

Figure S1. Tear strength of (a) TPU and (b) PDMS with PAM hydrogel with BP modification for different time at different BP concentration.

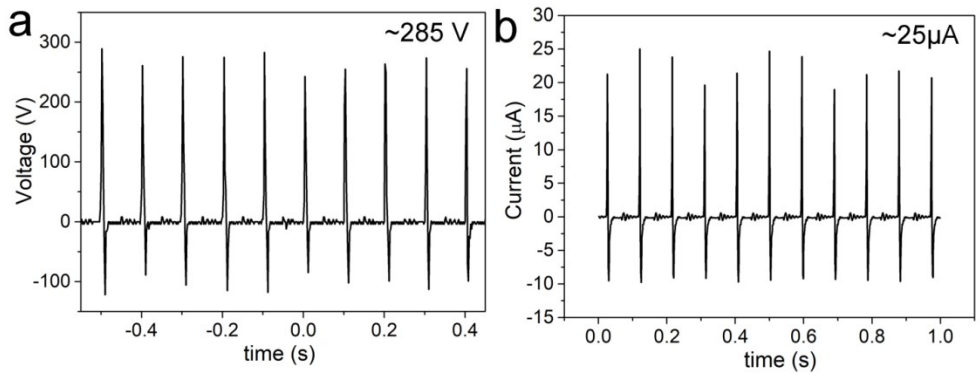

Figure S2. Output (a) voltage and (b) current of DH-TENG without BP modification. Both voltage and current are lower than the BP modified counterpart, and the signals have lower stability.

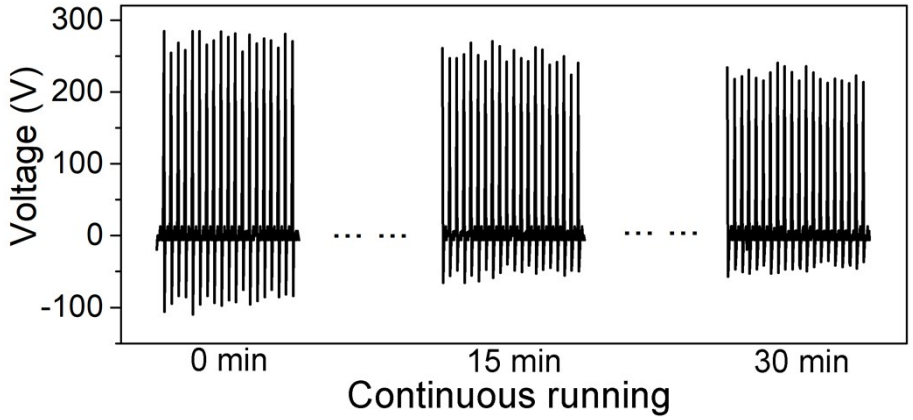

Figure S3. Continuous running performance of DH-TENG without BP modification for 30 min. The output voltage was decreased gradually due to the ineffective contact during the long term operation, which was caused by the move of PAM hydrogel when subjected to compressive force.