Supplementary Materials for

Reconfiguring the endogenous electric field of a wound through the conductive hydrogel for effective exudate management to enhance skin wound healing

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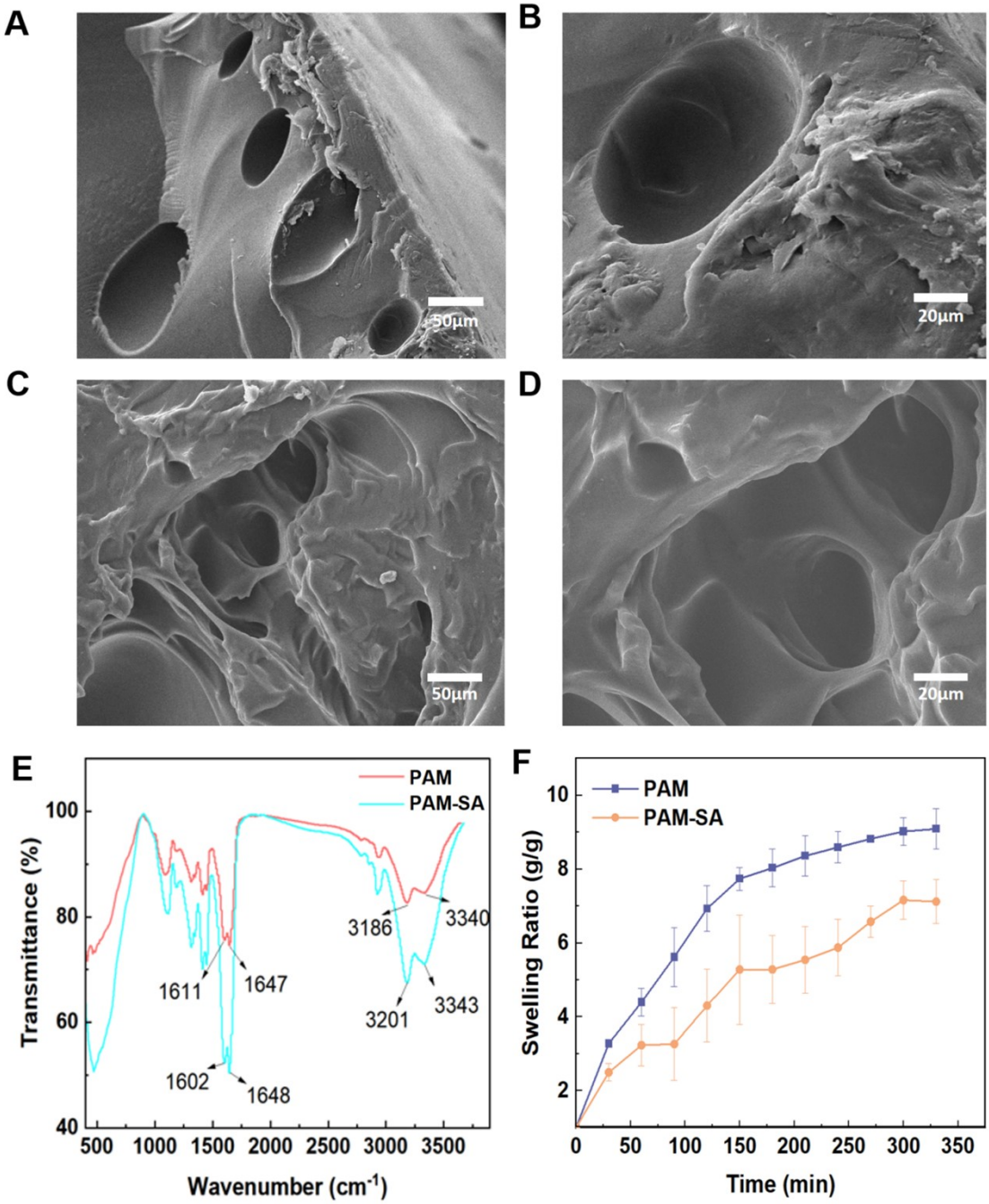

Figure S1. Characterization of Hydrogels. (A-D) SEM images of these hydrogels with different magnifications. resulting in the formation of a lamellar double network structure. (E) FT-IR of PAM-SA and PAM hydrogel.In PAM samples, the peak at 3343 and 3201 cm^{-1} corresponded to the stretching vibrations of the amino group -NH_2. The peak at 1648 cm^{-1} was attributed to the carbonyl C=O stretching band, while the peak at 1602 cm^{-1} corresponded to the amino group -NH_2. However, in PAM-SA samples, the stretching of -NH_2 group was shifted to 1611 and 1674 cm^{-1}, and N-H stretching peaks at 3343 and 3201 cm^{-1} were shifted to 3340 and 3186 cm^{-1}, respectively. Additionally, the stretching of carbonyl C=O was shifted from 1648 cm^{-1} (PAM) to 1647 cm^{-1} (PAM-SA hydrogel). (F) Swelling properties of PAM-SA and PAM.

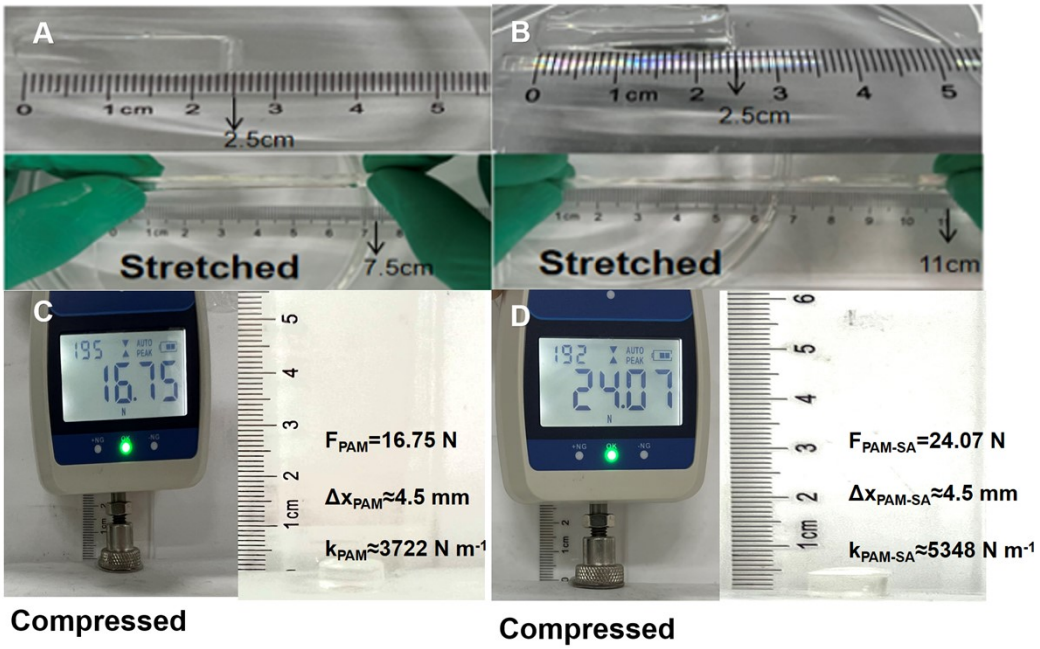

Figure S2. Characterization of Toughness of Hydrogels. (A) Tensile properties of PAM. (B) Tensile properties of PAM-SA. (C) Compression performance of PAM. (D) Compression performance of PAM-SA.

Movie S1. This movie shows the detailed process of electric field reconstruction for the wound site