Supporting Information for

Potential-Induced Wetting and Dewetting in pH-Responsive Block Copolymer Membranes for Mass Transport Control

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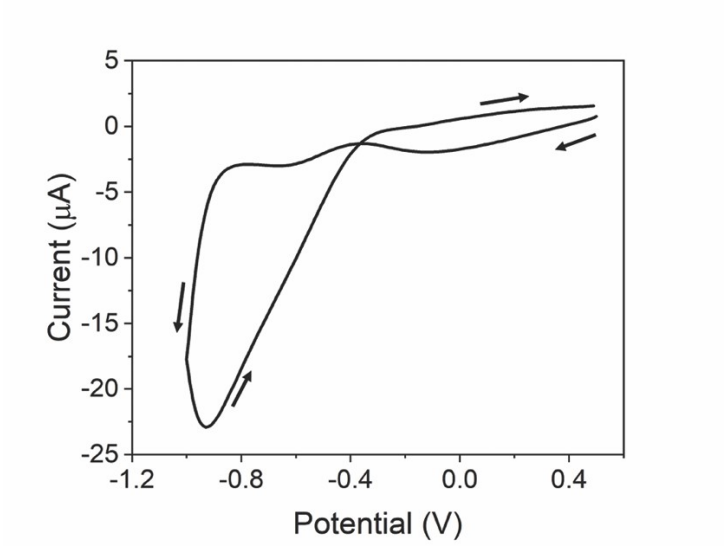

Figure S1. Voltammetric response of 5 mM $Fe(CN)_6^{3-}$ in 0.1 M KCl on a BCP-coated Au electrode at pH 8.4 showing only the first potential scan in panel (a) of **Figure 2**.

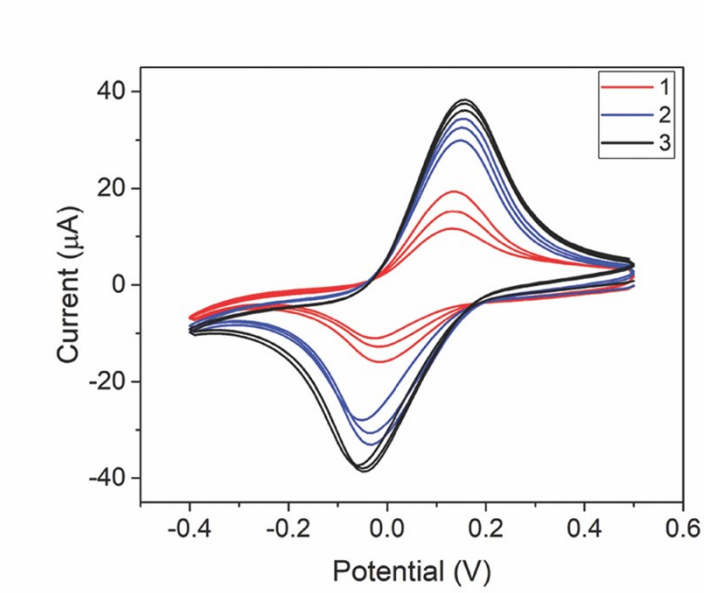

Figure S2. Consecutive voltammograms of 1 mM $Fe(CN)_6^{3-}$ in 0 mM KNO_3 at pH 3.1 on BCP-coated Au electrode after switching electrolyte solution from pH 8.4. The numbers indicate the order in which the voltammograms were obtained. Each voltametric set consists of 3 potential cycles.

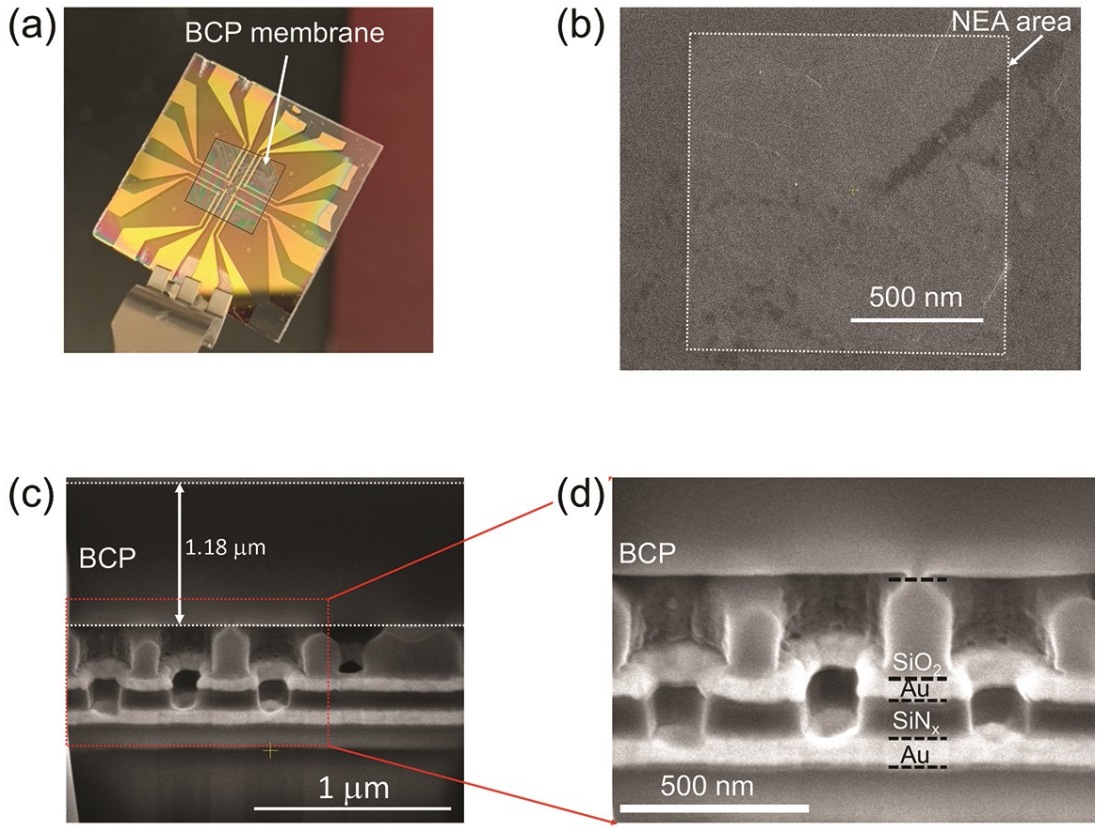

Figure S3. (a) Photographic image of a BCP@NEA device. (b) Top view SEM image of the BCP membrane-coated NEA. (c,d) Cross-sectional SEM images revealing membrane thickness (c) and the detailed nanopore structures beneath the BCP membrane (d). The physical integrity of the nanopores in contact with the BCP membranes is apparent from these images.

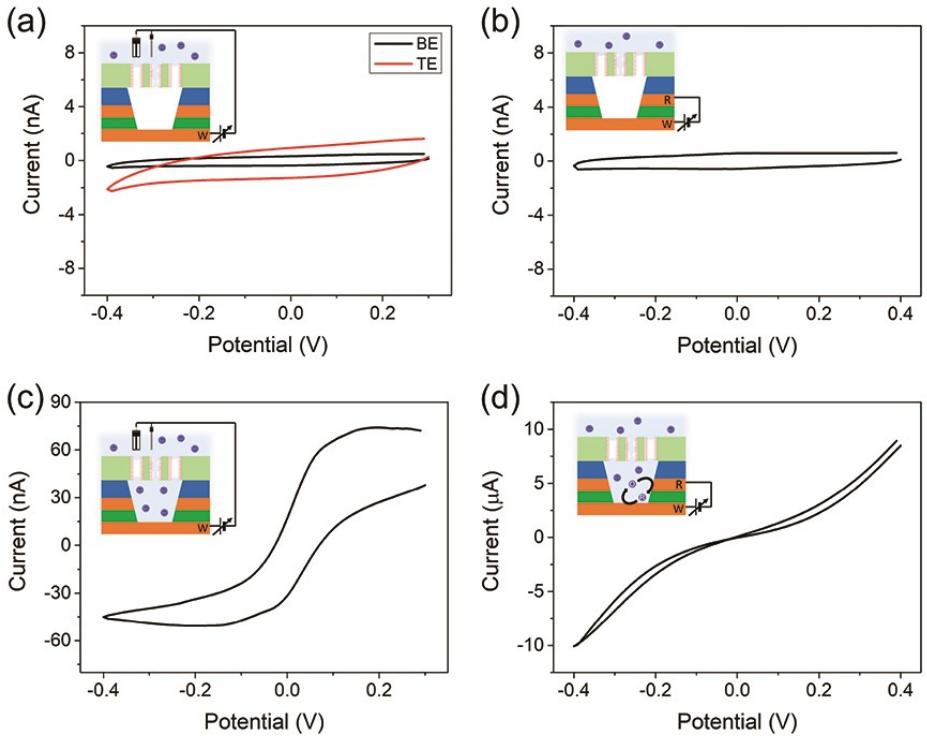

Figure S4. (a,c) Non-GC mode and (b,d) GC mode voltametric responses of 50 mM $Fe(CN)_6^{3/4-}$ in no SE at pH 7.6 in the 3-electrode (a,c) and 2-electrode (b,d) configurations. Voltammetric responses were obtained in the presence of the BCP membrane before (a,b) and after (c,d) potential-induced solution introduction into the nanopores. Non-GC current was obtained either with BE or TE in the 3-electrode configuration with a Pt wire counter and Ag/AgCl reference electrode, situated outside the NEAs. GC operation was conducted in a 2-electrode configuration, where BE and TE were used as working and reference/counter electrodes, respectively.