A Pb^{2+} Ionic Gate with Enhanced Stability and Improved Sensitivity Based on a 4'-aminobenzo-18-crown-6 Modified Funnel-Shaped Nanochannel

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Content

1. Nanochannel preparation

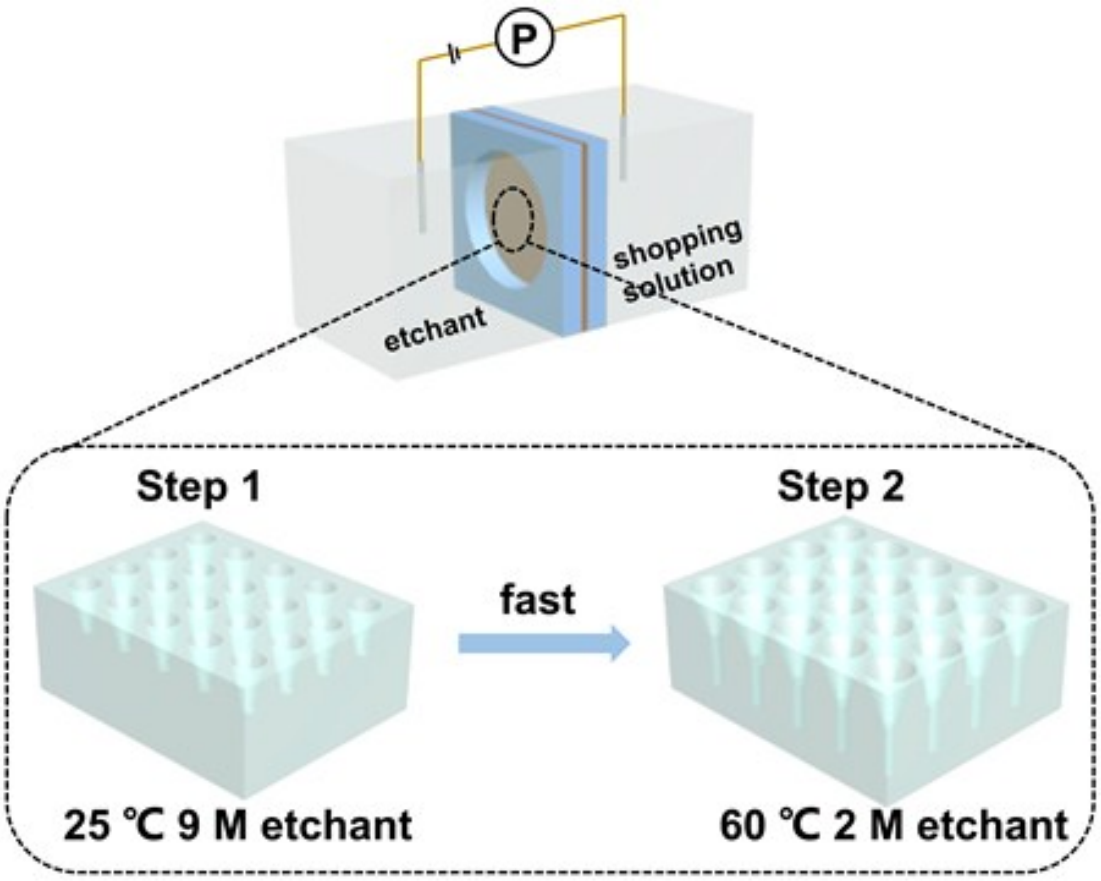

Figure S1. The fabrication process of the funnel-shaped nanochannel by two-step electrochemical etching.

2. The device of ionic current recordings

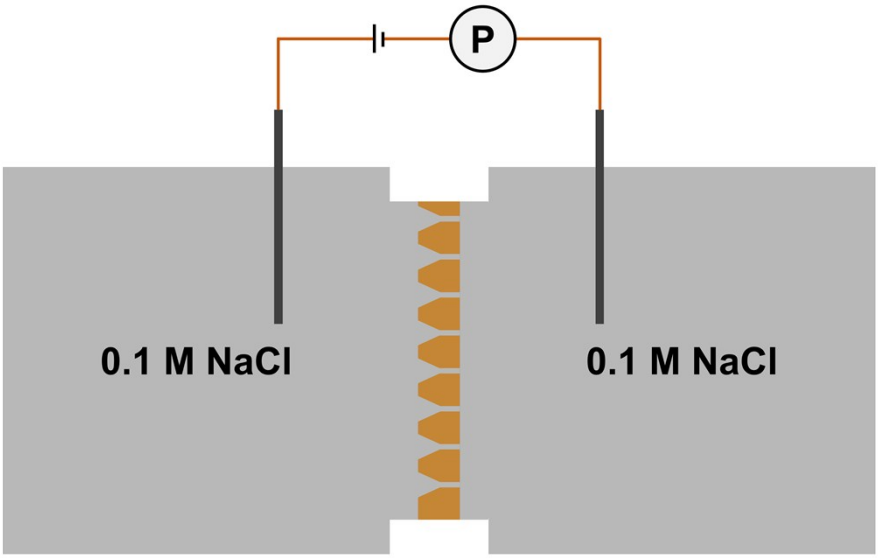

Figure S2. The device of ionic current recordings.

3. The characterizations of ionic current recordings

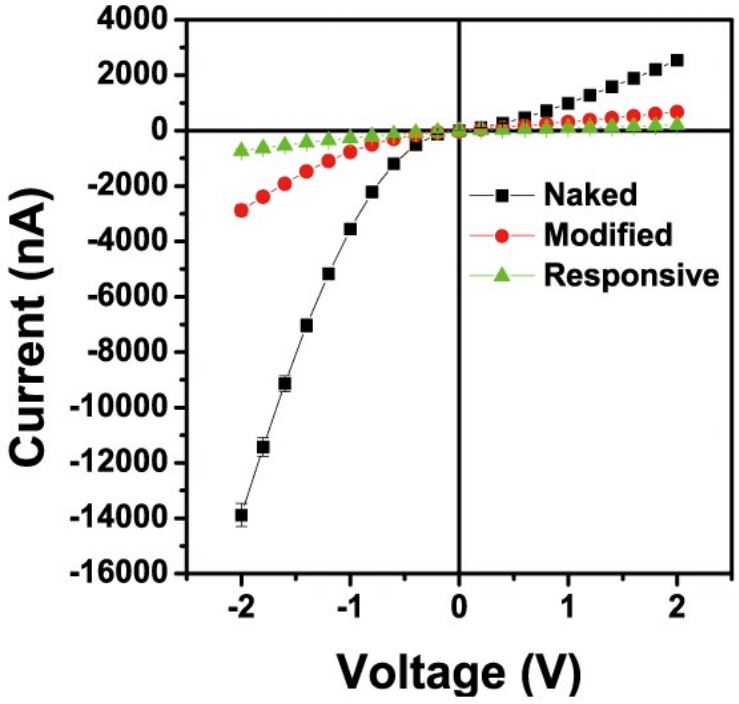

Figure S3. The *I-V* curves of the conical nanochannels at the multifarious states: naked, modified and responsive (10^{-8} M Pb^{2+}).

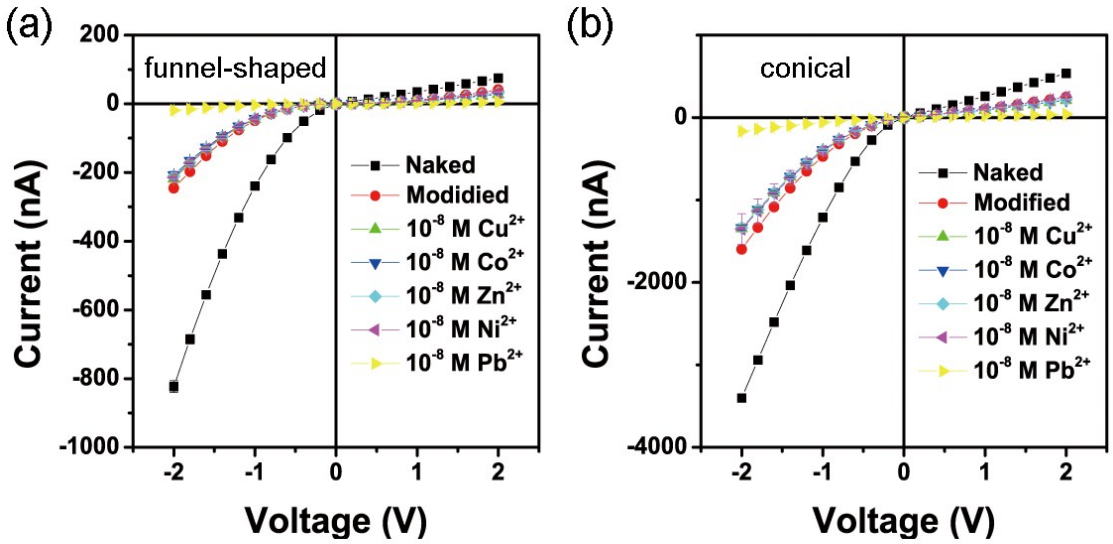

Figure S4. The comparison with special recognition of the 4-AB18C6 modified funnel-shaped and conical nanochannels immersed into the multicomponent metal ion (Cu^{2+}, Co^{2+}, Zn^{2+}, Ni^{2+}, Pb^{2+}) through the *I-V* curves. (a) The *I-V* curves of the special recognition of the 4-AB18C6 modified funnel-shaped nanochannels. (b) The *I-V* characterizations of the 4-AB18C6 modified conical nanochannels.

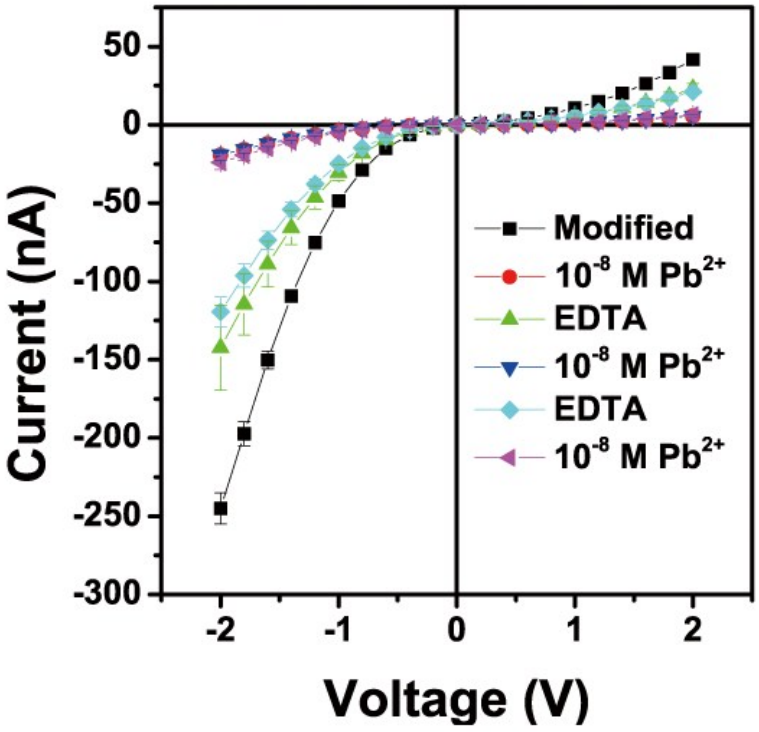

Figure S5. The recyclability of the 4-AB18C6 anchored funnel-shaped nanochannels through the *I-V* curves.

4. Wettability characterization

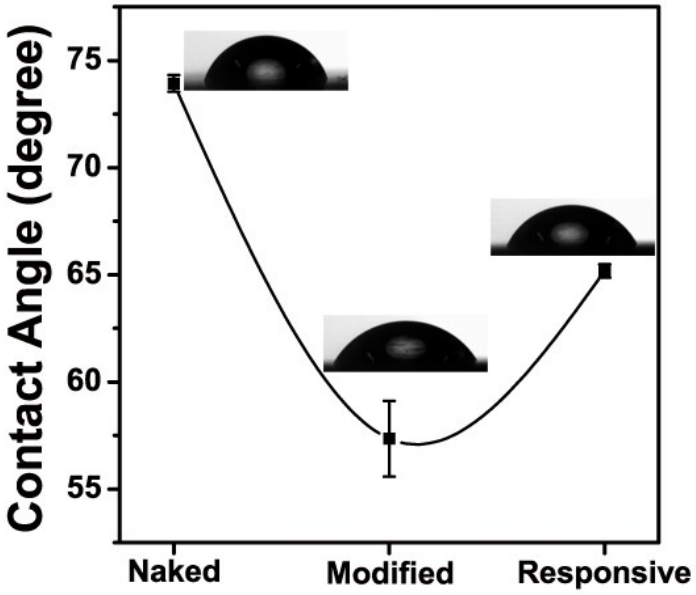

Figure S6. The contact angle of the varied states.