Investigate of a novel high-efficiency ion permselectivity membrane module based on

ESIX scheme

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**Figure S1.** Effect of the dissolved oxygen in the solutions on the cations transport through the PPy/PSS membrane.





**Figure S2. (A)**The adsorption and desorption curves of K<sup>+</sup> ions on the PPy/PSS membrane; (B)The impedance of the membrane; (C) CV curves of the PPy/PSS membrane as electrode.