

Supporting Information

Polystyrene-coated Interdigitated Microelectrode Array to Detect Free Chlorine towards IoT Applications

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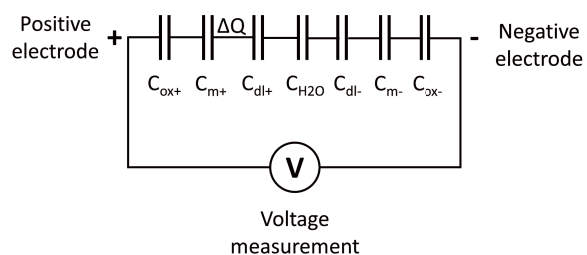


Fig. S1 Equivalent circuit diagram of the IDA electrodes. The C_{ox} , C_m , C_{dl} , C_{H2O} represent the capacitances of the electrode oxide, the coating layer, the double layer, the electrolyte respectively. The “+” and “-” symbols represent the positive and negative electrodes respectively.

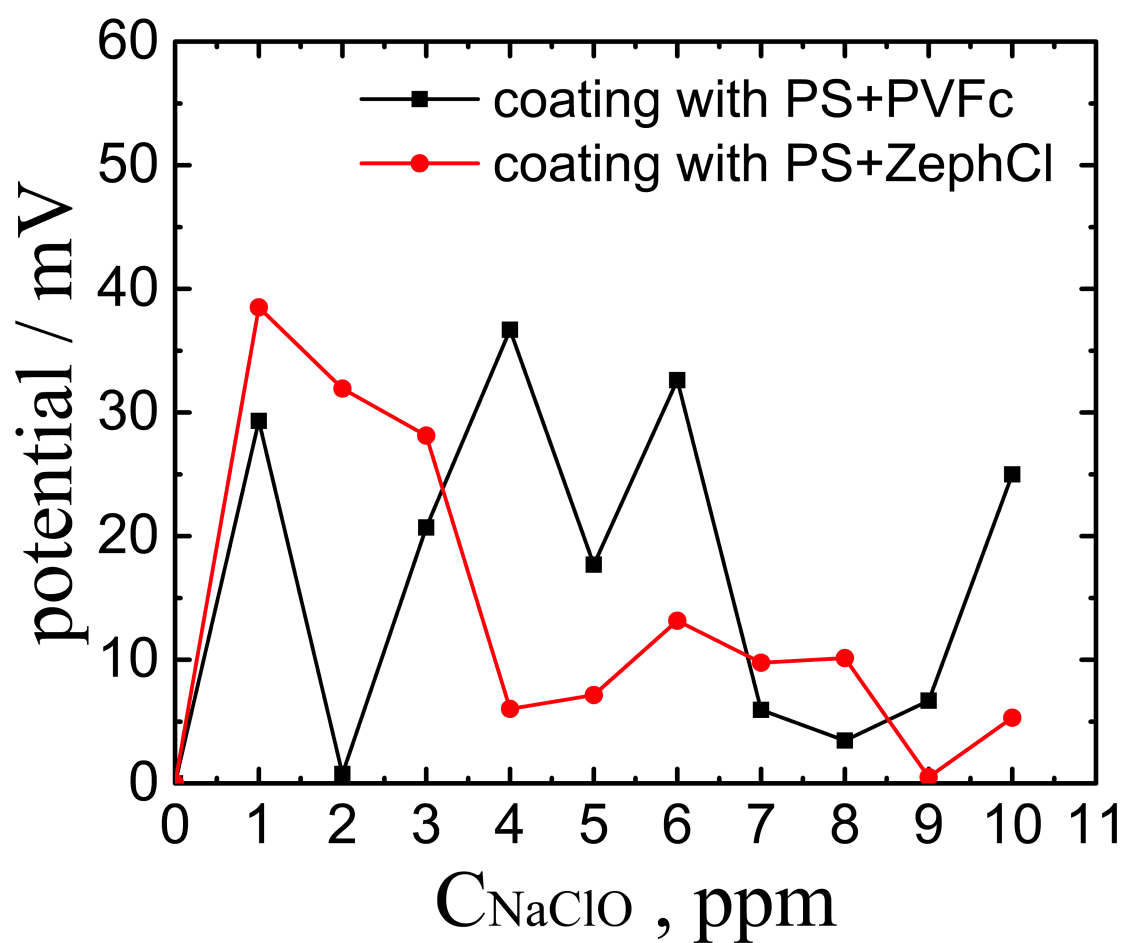


Fig. S2 Devices potential response to NaClO concentration without membrane component ZephCl or Fc.

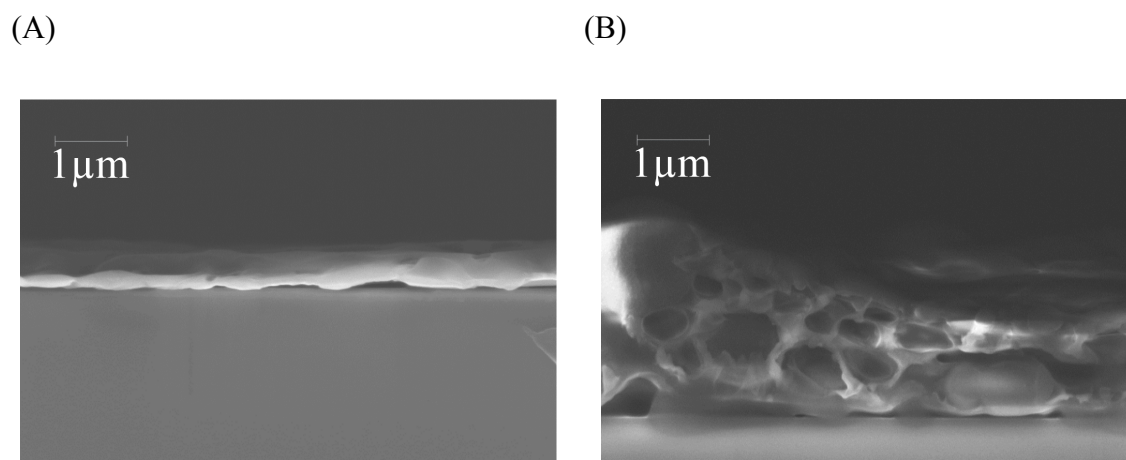


Fig. S3 SEM images of PS-PVFc-IDA coating layer (A), and PS-PVFc-ZephCl-IDA (B) respectively. Microscopic pores are observed in the membrane containing ZephCl, and almost no pore is in the membrane without ZephCl.

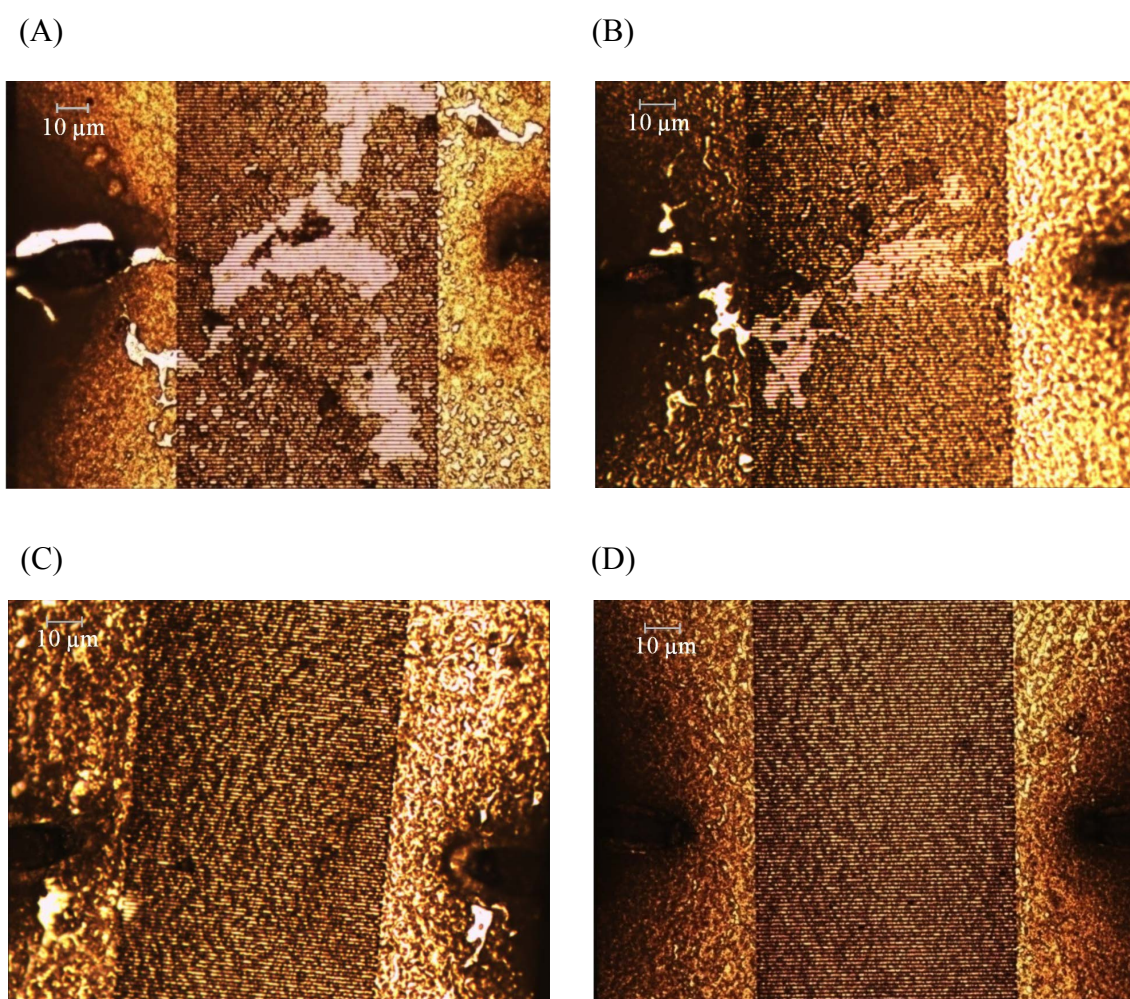


Fig. S4 Morphological characteristics of ISL membranes of different amounts of plasticizer after immersed in the test solution 10 days. Plasticizer content are 0%, 0.1%, 0.25%, 0.5% weight percentage for (A), (B), (C), (D) respectively.