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Graphene Oxide Embedded "Three-phase" Membrane to Beat "Trade-off" in Acid Recovery

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Abstract

The development of polymeric anion exchange membranes (AEMs) for recycling acid is facing a serious difficulty, the desired acid passage and undesired salt leakage dilemma. Ionic domains are the only channels to conduct H⁺ ions and metallic ions, and thus viable modifications on ionic domains render the permeation of two ions simultaneously enhanced or limited, leading to "trade-off" effect. Herein, we propose an origin strategy of "three-phase" AEMs to beat this "trade-off" effect. Apart from typical hydrophobic polymer backbone and hydrophilic cation phase domains, the

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