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Bipolar Membrane Electrodialysis for the Recycling of Ammonium Chloride Wastewater: Membrane Selection and Process Optimization

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Highlights

- BMED process is employed to resourcelize the NH₄Cl wastewater.
- The process is of environmentally friendliness and energy-saving.
- Optimum membranes are selected by considering process performance and cost.
- Optimum operation condition can be determined by changing operating parameters.

Abstract

Here, bipolar membrane electrodialysis (BMED) with BP-A configuration is employed to convert ammonium chloride wastewater into hydrochloric acid and ammonium hydroxide to overcome the shortcomings of conventional treatment methods. First, different commercial anion exchange membranes (TWEDA2, AMV, JAM-II and CJMA-2) and bipolar membranes (BP-1,

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