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Membrane distillation and membrane electrolysis of coal seam gas reverse osmosis brine for clean water extraction and NaOH production

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RESEARCH HIGHLIGHTS

- MD could concentrate CSG RO brine by 10-fold (90% water recovery) without scaling.
- Feed salinity increase and CO₂ permeation negatively affected MD water flux.
- Current density and water circulation rates strongly influenced ME performance.
- Combining MD and ME reduced thermal energy consumption of MD by 22 MJ/m³ distillate.