

TREATMENT OF PRODUCED WATER USING CERAMIC MEMBRANES

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Ceramic membranes offer numerous advantages for treatment produced water. Ceramic membranes are robust, chemically and thermally resistant, can produce high flux rates, and have high mechanical strength. In this study, ceramic membranes are compared to polymeric membranes as pretreatment for desalination technologies such as reverse osmosis and electrodialysis. This work aims to understand the chemical contaminant rejection characteristics of ceramic membranes and the optimal hydrodynamic conditions for operating these membranes. The effects of pre-coagulation were also investigated to enhance contaminant rejection and decrease flux decline. Cleaning strategies were also investigated to restore flux decline after fouling. Characterization techniques were employed to better understand the interaction of the ceramic membrane surface with the contaminants found in produced water.

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