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Modeling and analysis of the impact of degree of membrane rejection on polarization modulus

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ABSTRACT

Model describing the impact of degree of membrane rejection on behavior of concentration profile has been proposed. The model is based on the following physical assumptions: (1) the fluid was assumed to be incompressible, continuous and isothermal with uniform density field under the steady-state (time-independent) conditions; (2) transverse velocity was approximated by parabolic profile. Proposed model can be used for analysis of behavior of concentration profile. It can be applied for analysis of performance characteristics of membrane processes and laboratory- scale data at variable values of the observed degree of rejection. Sets of calculated profiles at different membrane rejection and temperature are attached.

Keywords: Concentration polarization; Degree of rejection; Modeling