

NUMERICAL METHOD OF ELECTROCHEMICAL DIFFUSION-MIGRATION MODEL

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ABSTRACT

The numerical simulations of one-dimensional electrochemical diffusion- migration models are performed. The model studies the transient transport phenomena in a binary electrolyte solution with reaction electrodes below the limiting current when one of the ionic species is inert. Finite difference schemes with both second-order temporal and spatial accuracy are proposed to solve the model. Unlike conventional algorithms in the literature, the present solution procedures decouple the concentrations and electric potential calculations.

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