

THE HYDRODYNAMICAL FACTOR AT ELECTRODIALYSIS WITH ION-EXCHANGE MEMBRANES AND SPACERS

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The mathematical model describing mass transfer in electrodialysis channels with inert and ion-conducting spacers in up to limiting current density is developed. The model includes the boundary value problem, an optimal method of its decision and numerical experiment. The application of spacers changes a structure of flow, causing before spacers and behind them the areas with the returnable movement promoting interruption of diffusion boundary layers and increase a mass transfer. The electrodialysis with ion-conducting spacers is more effective in comparison with electrodialysis in smooth channel or channel with inert spacers as the hydro-dynamical intensification is combined with development of a mass transfer surface unlike the inert spacers screening a part of an ion-exchange membrane.