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# The influence of diffusion transfer on the kinetics of ion-exchange separation of the components

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**Abstract**

The analysis of sorption problem solution, with the account of the influence of private diffusion resistance on the speed of the sorption process of $Me^+$ in the column with motionless layer in ion-exchanger was carried out. The interval of values of the diffusion coefficients for ion-exchanger grains was established, excluding the application of the Thomas model. Feasibility of using one-dimensional capillary flux model for estimating diffusion resistance is shown at the flow of liquid in the channels of ion-exchanger. The proposed kinetic equation adequately describes the experimental dependence of the extraction degree of the component on the time of contact of the solution with the sorbent layer; it also allows to calculate the output solution curves with the nonlinear nature of the equilibrium dependence of the components concentration in the and the sorbent phase.