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## **APPLICABILITY OF SHRINKING CORE MODEL FOR ION EXCHANGE PROCESSES ON SULFONATED GEL RESINS**

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### **Abstract**

The shrinking core model with Fickian diffusion and pseudo-steady-state approximation was used for the ion exchange kinetics of  $H^+/Na^+$ ,  $H^+/Ca^{2+}$ ,  $H^+/Zn^{2+}$ ,  $H^+/Cd^{2+}$  on sulfonic acid gel-like resins, at 298 K. The results show that the model describes the experimental data with 99% probability for fractional conversion lower than 0.8-0.9. The investigated systems are important in water demineralisation, softening and wastewaters purification from toxic heavy metal ions.

*Keywords:* ion exchange kinetics, effective diffusion coefficient, heavy metal ions, water treatment, wastewater purification

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