

Sorption of Cu(II) by chemically grafted hydroxamic acid-zeolite

ABSTRACT

Sorption of Cu(II) by zeolite sorbent chemically modified with hydroxamic acid (HASiZP) is described. The maximum sorption capacity of Cu(II) occurred at pH 5. Sorption capacity of Cu(II) by HASiZP was doubled compared to the original zeolite. Kinetic study shows that Cu(II) sorption followed by second order kinetic model. The sorption of Cu(II) followed Langmuir isotherm model with maximum capacity of 33.32 mg/g at 25°C and increased to 48.12 mg/g at 70°C. Cu(II) sorption by the HASiZP was endothermic and spontaneous processes with positive values of entropy changes.

Keyword: Hydroxamic acid-grafted zeolite; Cu(II); Sorption