

Removal of As(V) by Ce(IV)-exchanged Zeolite P using column method.

ABSTRACT

Zeolite P was modified by ion exchange with Ce(IV) cation (Ce4ZP) and its performance for removal of As(V) anion using column method is described. The removal of As(V) was strongly depending on the bed depth, influent flow rate and initial As(V) concentration. The increase in bed depth enable more water can be treated, but with a slight reduction in adsorption capacity. At lower flow rate, the quantity of treated water and adsorption capacity were found to increase. At higher influent concentrations, better adsorption capacity was observed. The theoretical service times evaluated from bed depth service time (BDST) model for different flow rates and influent As(V) concentrations shows good correlation with the experimental data.

Keyword: Arsenate; BDST model; Ce(IV)-zeolite P; Column; Adsorption.