

Removal of lead from water using a polyethylenimine aminated PVC fiber

WANG ZHUO, 원성욱^{1,†}

Gyeongsang National University; ¹경상대학교

(sungukw@gmail.com[†])

In this study, a polyethylenimine crosslinked PVC fiber (PEI-PVC fibers) was prepared for Pb removal. The effect of pH, contact time, and initial concentrations on the adsorption performance of PEI-PVC fiber towards Pb was evaluated. The results were as follows: pH effect experiment showed that pH 6 was optimal for the removal of Pb from aqueous solution. Langmuir model was better fitted with the isotherm experiment result and the maximum adsorption capacity of Pb was evaluated to be 233.3 mg/g. The Pseudo-second-order model was better for depicting the kinetic performance of the adsorption of Pb on PEI-PVC fiber. The adsorption equilibrium time was within 100 min regardless of the initial concentrations. Due to the high adsorption capacity, relatively fast adsorption kinetics, and easy separation, PEI-PVC fiber can be regarded as a promising adsorbent for Pb removal.