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Recovery of Cd (II) and Pb (II) under the Effect of Temperature with the Synthetic Zeolite NaA

Authors : Karima Menad, Ahmed Feddag

Abstract : In this study, large crystals of the zeolite NaA were synthesized by hydrothermal way. By following this zeolite was used to recover two heavy metals that are allowing the most dangerous toxic, lead and cadmium. The synthesized zeolite was analyzed by XRD and SEM aims to verify its purity and its good morphology; after it was undergoing ion exchange operations by aqueous solution with lead and cadmium in two salts Pb(CH3COOH)2 and CdCl2 at different concentrations. The exchange was carried out under the effect of two temperatures (25 °C and 60 °C). The contents of Pb++, Cd++ and Na+ were analyzed by atomic absorption and the results are given in the form of exchange rates. At the end the samples are analyzed by XRD exchanged to confirm their conservation of their zeolite framework. It is found that the exchange rate increases with the increase of initial concentration and the best results are found for the temperature of 60 °C.

Keywords : exchange rate, ion exchange, LTA zeolite, zeolite NaA
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