







Heavy metal ions removal from waste water by the natural zeolites

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<https://doi.org/10.1016/j.matpr.2018.06.122> 

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Abstract

The removal of cobalt, zinc and manganese from aqueous solutions by natural zeolites has been examined using the batch method. The heavy metal ion concentrations in solution ranging from 50 to 400 mg/l were used. The extraction efficiency of natural zeolites for metal ions observed higher at the lower concentration. The results of extraction efficiency (%R) and the distribution ratio (K_d) increases with decreasing ion concentration in solutions. It is clear from these results that the Mordenite is a potential candidate for removal of Co^{2+} , Zn^{2+} and Mn^{2+} ions from wastewater than the Stilbite and Heulandite. The extraction efficiency value for Co^{2+} is observed highest for Mordenite at a concentration of 50 mg/l. Present results suggest that natural zeolites can be removed heavy metal ions from wastewater effectively

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...Large surface area, high ions exchange capability and cost-effectiveness is few advantages that make zeolite a better option for the adsorption process. The adsorption efficiency of zeolites can be enhanced by chemical alteration like surface modification and acid treatment (Obaid et al., 2018). Biological adsorbents are derived from microbes such as bacteria, fungi, algae, yeasts, etc....

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