

Recovery of Heavy Metals by Ion Exchange on the Zeolite Materials

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Abstract : Zeolites are a family of mineral compounds. With special properties that have led to several important industrial applications. Ion exchange has enabled the first industrial application in the field of water treatment. The exchange by aqueous pathway is the method most used in the case of such microporous materials and this technique will be used in this work. The objective of this work is to find performance materials for the recovery of heavy metals such as cadmium. The study is to compare the properties of different ion exchange zeolite Na-X, Na-A, their physical mixture and the composite A (LTA) / X (FAU). After the synthesis of various zeolites X and A, it was designed a model Core-Shell to form a composite zeolite A on zeolite X. Finally, ion exchange studies were performed on these zeolite materials. The cation is exclusively tested for cadmium, a toxic element and is harmful to health and the environment.

Keywords : zeolite A, zeolite X, ion exchange, water treatment

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