

عنوان مقاله:

A Comparison on Lead Adsorption from Wastewater by Natural, Modified, and Synthetic Zeolites: A review

محل انتشار:

چهارمین کنفرانس ملی زئولیت ایران (سال: 1396)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Somayeh Amiri Zare - *Department of Chemical Engineering, University of Guilan, ۴۱۶۳۵۱۳۷۶۹, Rasht, Iran*

Fereshteh Raouf - *Department of Chemical Engineering, University of Guilan, ۴۱۶۳۵۱۳۷۶۹, Rasht, Iran*

Leila Mivehei - *Department of Textile Engineering, University of Guilan, ۴۱۶۳۵۱۳۷۶۹, Rasht, Iran*

خلاصه مقاله:

The water pollution caused by organic and inorganic compounds is a world problem originated by natural or anthropogenic sources[1]. According to the list of priority pollutants of the US Environmental Protection Agency (EPA), arsenic, chromium, cobalt, nickel, copper, zinc, silver, cadmium, mercury, titanium, selenium and lead represent a serious problem for the human health because they are not biodegradable and tend to accumulate in living organisms causing several diseases [2]. Additionally, in the wastewater of paints and pigments industries, heavy metals are also present with dyes and, considering that some dyes are toxic, no degradable, stable and even carcinogenic, the treatment of these wastewaters is very difficult and mostly ineffective when using traditional purification processes[3]. The most commonly used methods for removing heavy metals are chemical or electrochemical precipitation, both of which pose a significant problem in terms of the disposal of precipitated wastes. Further, ion-exchange treatments are also available, which do not appear to be economical. It has been reported that some aquatic plants, wood materials, agricultural by-products, clay, natural zeolite, microorganisms and other lowcost adsorbents have the capacity to adsorb and accumulate heavy metals[4]. Lead has been found to be acute toxic to human beings when present in high amounts (e.g. > 15 μg). Therefore, the removal of excess lead ions from wastewater is essential. Treatment processes usually include chemical precipitation, adsorption, solvent extraction, ultrafiltration and ion exchange. Zeolites are inexpensive natural materials with a high and selective cation exchange capacity[5]. Natural zeolites have ion exchange and removal capacity. Clinoptilolite has high removal capacity of metal ions Pb^{+2} , Cu^{+2} , Zn^{+2} , Cd^{+2} , Ni^{+2} , Fe^{+2} and Mn^{+2} .

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/770737>

