

عنوان مقاله:

Equilibrium and Kinetic Studies on Lead (II) Adsorption by Sugarcane Bagasse Derived Activated Carbon

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 30، شماره 11 (سال: 1396)

تعداد صفحات اصل مقاله: 7

نویسندگان:

I Umar Salihi - *Department of Civil and Environmental Engineering, Universiti Teknologi PETRONAS (UTP), Bandar Seri Iskandar, Perak Darul Ridzuan, Malaysia*

S Rahman Mohamed Kutty - *Department of Civil and Environmental Engineering, Universiti Teknologi PETRONAS (UTP), Bandar Seri Iskandar, Perak Darul Ridzuan, Malaysia*

M Hasnain Isa - *Department of Civil and Environmental Engineering, Universiti Teknologi PETRONAS (UTP), Bandar Seri Iskandar, Perak Darul Ridzuan, Malaysia*

خلاصه مقاله:

Municipal and industrial wastewater contain a lot of contaminants. The major contaminants of concern are heavy metals. Heavy metals are known to be toxic, non-biodegradable and have a long half-life. The release of untreated wastewater containing heavy metals can cause serious problems to human, plants and animals. In this study, activated carbon was developed from sugarcane bagasse and its effectiveness in adsorbing lead ions from wastewater was examined. Batch adsorption experiments were carried out to investigate the effects of pH and initial lead concentration on the adsorption process. The batch adsorption test showed that extent of lead adsorption by sugarcane bagasse activated carbon (SCBA) was dependent to pH and initial lead concentrations. The optimum pH for lead adsorption was found to be pH 5.0. Removal of lead decreases with the increase in initial metal concentrations. The adsorption of lead ions onto SCBA follows a pseudo-second-order reaction model. The rate limiting step is a chemisorption or chemical adsorption that involves Van der Waals forces through electrons .exchange between the SCBA and lead ions

کلمات کلیدی:

,Adsorption,Lead,Sugarcane Bagasse,Activated Carbon,Heavy Metals

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/719508>

