

عنوان مقاله:

Hydrodynamic Study of Phenol Adsorption onto Commercial Activated Carbon in Fixed Bed Column

محل انتشار:

چهاردهمین کنگره ملی مهندسی شیمی ایران (سال: 1391)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Behzad Ehsani, - *Chemical engineering faculty, Babol University of Technology, Babol, Iran*

,Ali Asghar Ghoreyshi

Ghasem najafpour

خلاصه مقاله:

Presence of phenol and its derivatives in most industrial effluents is a big hazard for human and environment. In this work, hydrodynamics of phenol adsorption on commercial activated carbon was studied in a fixed bed column with inner diameter of 1.25 cm and height of 30 cm. The shape of breakthrough curve and breakthrough time are very important to describe the performance of fixed bed column. The objective of current investigation was to determine the effect of different parameters on breakthrough curve, such as, initial concentration, flow rate and bed height. The obtained results indicated that by increasing initial concentration and flow rate, breakthrough curve became steeper. The obtained data also confirmed that the adsorption of phenol increased with increasing initial concentration and bed height. As flow rate increased from 5 to 7.5 ml.min⁻¹, amount of uptake increased, afterward, by increasing flow rate from 7.5 to 10 ml.min⁻¹, amount of adsorption decreased again. Removal percent also decreased with an increasing inlet concentration and flow rate. Two kinetic models: Thomas and Yan models were applied to experimental data to predict the breakthrough behavior. Both models have good fitness with experimental data

کلمات کلیدی:

Phenol; Adsorption; Fixed bed; column; breakthrough

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/171768>

