عنوان مقاله:

Study of manganese removal from industrial wastewaters by adsorption in two states: batch and continuous

محل انتشار:

اولین همایش ملی تصفیه آب و پسابهای صنعتی (سال: 1391)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

In this study, after the experimental studies on adsorption batch mode, using granular activated carbon, effects of factors such as adsorbent dose, agitation speed, contact time between solution and adsorbent, solution concentration and temperature on removal efficiency are studied. Consequently, to observe the adsorbent attitude and identification of equilibrated patterns adsorption isotherms are used. Adsorbent capacity in different contact times using kinetic models is studied and then diffusion mechanisms of Mn particles into the adsorbent and diffusion coefficient are indicated using of mass transfer analysis. Thermodynamic, kinetic and mass transfer analysises in predicting adsorbent attitude and effective factors on adsorption capacity are effective in design and construction of adsorption removal units. Cosequently, after indicating optimized condition such as temperature, continuous experiments in fixed-bed column are done and effect of factors such as initial concentration of solution and flow rate on removal is studied. Finally, mass transfer coefficient in fixed-bed column is calculated

کلمات کلیدی:

Adsorption, Granular activated carbon (GAC),Mn removal, Adams-Bohart model, Breakthrough curve