عنوان مقاله:

CO Separation from Syngas by Multiwall Carbon Nanotube

محل انتشار:

فصلنامه انرژی و محیط زیست ایران, دوره 3, شماره 1 (سال: 1390)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

In this study the equilibrium uptakes of hydrogen and carbon dioxid as the main constituents of syngas by the multi-walled carbon nanotube (MWCNT) were investigated at the temperature range of 288-318K and pressure up to 40 bars. The results have shown that temperature had much less effect on the adsorptionof H on MWCNT than adsorption of CO . Several model isotherms such as Langmuir and Freundlich were 2 2 examined to fit the equilibrium uptake data. The kinetics of H and CO adsorption on MWCNT were also 2 2 investigated and the results revealed a fast sorption kinetic for both gas adsorption on MWCNT. Isosteric heatof adsorption was evaluated based on the Clausius-Clapeyron equation at different temperatures. Small valuesof isosteric heat of adsorption confirmed that although the adsorption of H and CO on MWCNT were 2 2 exothermic, but the heat of adsorption was too low, .therefore the process of adsorption of both gases on the MWCNT used in this study is physisorption

کلمات کلیدی:

Syngas; Adsorption; MWCNT; Kinetic; Isosteric heat