Study of N_2 adsorption on metal oxides modified Na-Y zeolite: Equilibrium and kinetic

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ABSTRACT

Adsorption equilibrium and kinetic study of gas N_2 on metal oxides modified Na-Y zeolite have been undertaken in order to elucidate the fundamental mechanism of adsorbate-adsorbent interactions. Studies were carried out by measuring both the adsorption isotherm and the FTIR spectra. Results indicate that the electronegativity and valent variations of metal cations greatly affect the gas N_2 adsorption capacity as well as kinetic transport. The isosteric heat of adsorption that measured and N_2 adsorption bands that observed in FTIR spectra also demonstrate that N_2 interact strongly with metal oxides modified Na-Y zeolite.

Keywords: N_2 adsorption; equilibrium; kinetic; metal oxides; Na-Y zeolite.