

عنوان مقاله:

Comparison of SAPO-34 Zeotype and T type Zeolite Molecular Sieves in CO₂/CH₄ Separation Process

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Mina Doroudian Rad - *Chemical Engineering Department, University of Tehran, Tehran, Iran*

Maede Salmasi - *Chemical Engineering Department, University of Tehran, Tehran, Iran*

Shohreh Fatemi - *Chemical Engineering Department, University of Tehran, Tehran, Iran*

خلاصه مقاله:

Carbon dioxide is known as a hazardous material with acidic property which can be found within many natural gas wells with the molar fractions from 2 up to 70 %, therefore attempts are required to remove and separate this material from methane to prevent corrosion problems as well as improving the natural gas energy content. SAPO-34 zeotype and T type zeolite materials were synthesized for separation CO₂ from CH₄. The synthesized samples were characterized by XRD and SEM techniques. This characterization tests confirmed the formation of both zeotype and zeolite materials. The manufacture samples were used in CO₂/CH₄ separation process. The adsorption experiments of CO₂ and CH₄ were carried out in temperature of 298 K and various pressures (1, 3, 5, 7, 10, 15, 20 bar) on the surface of synthesized adsorbents and CO₂/CH₄ selectivity was determined. The results revealed that these two types of molecular sieve can be good candidates for purification of CH₄ from CO₂. For both adsorbents, the highest selectivity of CO₂/CH₄ was obtained around 6, in pressure of 1 bar.

کلمات کلیدی:

Adsorption, Carbon dioxide, Methane, SAPO-34 zeotype, T type zeolite

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/340930>

