

عنوان مقاله:

Preparation and characterization of (PVC-blend-SBR) mixed matrix gas separation membrane filled with zeolite

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Polyvinylchloride (PVC)/Styrene-Butadiene-Rubber (SBR) blend gas separation membrane were prepared by solution casting method using tetrahydrofuran (THF) as solvent. The zeolite loading and pressure effects on the gas separation performance of these membranes were studied for pure He, N₂, CH₄, CO₂ gases. The experimental results indicate that a higher zeolite loading results in enhancement permeability and a reduction in CO₂/N₂, CO₂/CH₄ and N₂/CH₄ selectivity for a given pressure. By considering the pressure effects, it is recognized that nearly for all considering gases and zeolite loadings, the permeability increased with increasing the pressure. It is observed that for CO₂/N₂ and CO₂/CH₄ gas pairs, selectivities decrease with increasing the pressure for all zeolite loadings and for N₂/CH₄ at 50% zeolite loading, the gas pair selectivity increased with increasing pressure.

کلمات کلیدی:

mixed matrix membrane, gas separation, zeolite, permeability, selectivity

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