

عنوان مقاله:

A Hydrothermal Treatment for Preparation of Mordenite Membranes

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

A seeded in situ hydrothermal treatment was used to synthesize tubular supported mordenite (MOR) membranes. The pervaporative properties of the membranes were evaluated in dehydration of water/ethanol mixtures. Commercial mordenite powder was used to completely seed the outer surface of the supports by soaking them into a suspension solution before hydrothermal synthesis. X-ray diffraction (XRD) patterns of the zeolite crystals formed on the mullite support revealed the mordenite peaks. The membranes were also characterized by scanning electron microscopy (SEM). The results showed that oriented, intergrown mordenite crystals covered the outer surface of the substrate tubes during the hydrothermal process. The membrane layer thickness was about 20 μm . Typical membranes yielded water/ethanol separation factors of 65-562 for different feeds concentrations. The results confirmed that the membranes were defect free.

کلمات کلیدی:

Mordenite membrane; Hydrothermal; Mullite; Pervaporation; Ethanol dehydration

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