

PROCESS AND PRODUCT TECHNOLOGY

用于 VOC 回收的 PVDFMS-AI2O3 中空纤维膜复合膜

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摘要 Sorption Isotherm of chloroform in poly(vinyl dimethylsiloxane) (PVDFMS) polymer film was measured via the gravimetric method, and this film was confirmed experimentally to be good membrane material to recover chloroform from gas stream with high sorption capacity. A new PVDFMS-

AI2O3 composite hollow fibre membrane was further prepared by coating a PVDFMS film on the outer surface of AI2O3 hollow fibre porous substrate prepared by a dry/wet phase inversion method. Microstructure of the composite membranes was examined by scanning electron microscopy (SEM), indicating the PVDFMS coating layer was uniform, free of defects, and around 1.5µm thick. Performance of the PVDFMS-

AI2O3 composite hollow fibre membranes for chloroform recovery was investigated. By comparing the experimental data that derived from a mathematical model, the permeabilities of chloroform and nitrogen in the PVDFMS polymer membrane were obtained. The effects of temperature and feed flow rate on the chloroform recovery and permeate concentration were investigated both experimentally and theoretically.

关键词 PVDFMS-AI2O3 中空纤维膜复合膜; 吸附等温线; 聚乙烯二甲基硅氧烷复合膜制备; 膜回收

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PVDFMS-AI2O3 Composite Hollow Fibre Membranes for Chloroform Recovery from Gas Streams

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Key words hollow fibre composite membrane; chloroform recovery

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