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研究简报

超临界二氧化碳体系中PVDF微孔膜的表面接枝改性

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摘要

关键词 超临界二氧化碳 PVDF微孔膜 表面改性

分类号

SURFACE MODIFICATION OF PVDF POROUS MEMBRANE IN SUPERCRITICAL CARBON DIOXIDE FLUIDS

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Abstract Grafting of maleic anhydride/styrene onto PVDF porous membrane was performed in the presence of supercritical carbon dioxide($SCCO_2$)as a solvent and swelling fluid. The copolymer of maleic anhydride and styrene (SMA) was grafted onto the out and inner surface of PVDF pores membrane by passing through the membrane pores,which was confirmed by ATR-FTIR and XPS measurements. The SEM photographs of the greedmembrane showed that the membrane structure was hardly changed,except for some jams of the out surface. It was found that the water contact angle of the out surface was reduced more than the inner surface. Themembrane biocompatibifity correspondingto protein adsmpfionwasimproved significantly with the grafting of SMA ontothe surface of the PVDF membrane. The effects of $SCCO_2$ pressure and the comonomer and initiator concentrations were invesgated.

Key words Supercritical carbon dioxide PVDF porous membrane Surface modification

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