

RESEARCH PAPERS

用于脱除C₅及MTBE中甲醇的渗透汽化膜研究

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摘要 Several pervaporation membranes, cellulose acetate (CA), polyvinylbutyral (PVB), poly(MMA-co-AA), MMA-AA-BA, CA/PVB blend and CA/poly(MMA-co-AA) blend, were prepared, and their pervaporation properties were evaluated by separation of methanol/C₅ or methanol/MTBE (methyl tert-butyl ether). The results shows that the CA composite membrane has a high separation performance (flux $J_{\text{methanol}} = 350 \text{ g}\cdot\text{m}^{-2}\cdot\text{h}^{-1}$ and separation factor $\alpha > 400$) for methanol/C₅ mixtures, and the pervaporation characteristics of MMA-AA-BA copolymer membranes changes with the ratio of copolymer. For CA/poly(MMA-co-AA) blend membrane, the pervaporation performance is improved in comparison with CA or poly(MMA-co-AA) membrane.

From the experiment of CA/PVB blend membranes for methanol/MTBE mixture, it is found that the compatibility of blends may affect the separation features of blend membrane.

关键词 [pervaporation membrane](#) [methanol](#) [C₅](#) [methyl tert-butyl ether](#) [blend](#)

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Study on Pervaporation Membranes for Removing Methanol from C₅ or Methyl Tert-butyl Ether Mixtures

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Abstract Several pervaporation membranes, cellulose acetate (CA), polyvinylbutyral (PVB), poly(MMA-co-AA), MMA-AA-BA, CA/PVB blend and CA/poly(MMA-co-AA) blend, were prepared, and their pervaporation properties were evaluated by separation of methanol/C₅ or methanol/MTBE (methyl tert-butyl ether). The results shows that the CA composite membrane has a high separation performance (flux $J_{\text{methanol}} = 350 \text{ g}\cdot\text{m}^{-2}\cdot\text{h}^{-1}$ and separation factor $\alpha > 400$) for methanol/C₅ mixtures, and the pervaporation characteristics of MMA-AA-BA copolymer membranes changes with the ratio of copolymer. For CA/poly(MMA-co-AA) blend membrane, the pervaporation performance is improved in comparison with CA or poly(MMA-co-AA) membrane. From the experiment of CA/PVB blend membranes for methanol/MTBE mixture, it is found that the compatibility of blends may affect the separation features of blend membrane.

Key words [pervaporation membrane](#); [methanol](#); [C₅](#); [methyl tert-butyl ether](#); [blend](#)

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