

RESEARCH NOTES

硅橡胶膜的制备与表征

刘秀军, 刘家祺, 韩煦, 白跃华

School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 Pervaporation membrane with preferential permeation for organic compounds over water was prepared and characterized. Selection of membrane material and the effects of polydimethylsiloxane (PDMS), cross-linker, and catalyst concentrations on performances of pervaporation membrane at room temperature were discussed. In addition, the time of cross-linking, and the kinds of basic plate in the process of preparation were tested. The formulation of pervaporation membrane material was determined. Through the characterization of membrane by infrared spectrometry (IR), scanning electron microscopy (SEM), transmission electron microscopy (TEM) and X-ray diffraction (XRD), it is proved that the structures and characters are suitable for the pervaporation process. Experiments also demonstrate that the permeate flux and separation factor are suitable for the process.

关键词 [pervaporation membrane](#) [preparation condition](#) [polydimethylsiloxane characterization](#)

分类号

DOI:

Preparation and Characterization of Silicone Rubber Membrane

LIU Xiujun, LIU Jiaqi, HAN Xu, BAI Yuehua

School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China

Received Revised Online Accepted

Abstract Pervaporation membrane with preferential permeation for organic compounds over water was prepared and characterized. Selection of membrane material and the effects of polydimethylsiloxane (PDMS), cross-linker, and catalyst concentrations on performances of pervaporation membrane at room temperature were discussed. In addition, the time of cross-linking, and the kinds of basic plate in the process of preparation were tested. The formulation of pervaporation membrane material was determined. Through the characterization of membrane by infrared spectrometry (IR), scanning electron microscopy (SEM), transmission electron microscopy (TEM) and X-ray diffraction (XRD), it is proved that the structures and characters are suitable for the pervaporation process. Experiments also demonstrate that the permeate flux and separation factor are suitable for the process.

Key words [pervaporation membrane](#); [preparation condition](#); [polydimethylsiloxane](#); [characterization](#)

通讯作者:

刘秀军

作者个人主页: 刘秀军; 刘家祺; 韩煦; 白跃华

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF](#) (1400KB)

▶ [\[HTML全文\]](#) (0KB)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ 本刊中 包含“[pervaporation membrane](#)”的 [相关文章](#)

▶ 本文作者相关文章

· [刘秀军](#)

· [刘家祺](#)

· [韩煦](#)

· [白跃华](#)