

表面与界面工程

利用低温等离子体进行聚砜膜的表面改性

詹劲, 郭志刚, 王保国, 蒲以康, 刘铮

清华大学化学工程系;清华大学电机工程与应用电子技术系, 北京 100084

收稿日期 2002-7-8 修回日期 2004-3-2 网络版发布日期 2008-9-1 接受日期

摘要 利用低温等离子体引发接枝反应, 在表面带负电的聚砜膜上引入带正电的单体聚合物, 从而减少膜表面净电荷. 通过测定膜的电渗流量来确定其表面电荷以作为膜表面改性效果的定量评价标准. 考察了照射时间、照射功率和接枝反应时间对膜改性效果的影响, 并对比了原膜与改性膜的膜污染特性. 结果表明, 改性后的膜表面净电荷减少, 抗污染特性提高.

关键词

[低温等离子体](#) [膜改性](#) [电荷](#)

分类号

SURFACE MODIFICATION OF POLYSULFONE MEMBRANE BY LOW TEMPERATURE PLASMA TREATMENT

ZHAN Jin, GUO Zhigang, WANG Baoguo, PU Yikang, LIU Zheng

Abstract

Commercial polysulfone membrane with negative surface charge was modified by low temperature plasma to initiate graft polymerization of 2-[DK](dimethylamino)ethyl methacrylate (DMAEMA), introducing positive charge onto HT membrane surface. It was confirmed by the XPS results that the introducing of positive charge group. Surface charge of the membrane was determined by measuring electroosmotic flux across the membrane. The effects of operation parameters including treatment power, treatment time, and polymerization time on the modification process were examined. The results also showed that surface modification by low temperature plasma, as described in the present paper, effectively reduced the net negative charge of membrane surface, and moreover, the adsorption of lysozyme on the membrane surface.

Key words [low temperature plasma](#) [membrane modification](#) [surface charge](#)

DOI:

通讯作者 刘铮 liuzheng@mail.tsinghua.edu.cn

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