

研究论文

以Pluronic®为第二组分制备聚乳酸蜂窝状规整多孔薄膜

孙巍, 唐越超, 计剑

浙江大学高分子科学与工程学系, 教育部高分子合成与功能构造重点实验室, 杭州 310027

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摘要 以聚乳酸(PLA)为成膜材料, 以两亲三嵌段共聚物PEO-PPO-PEO(Pluronic®)为第二组分, 利用水辅助法成功地制备了聚乳酸蜂窝状多孔膜. 研究了环境湿度、溶液浓度和所用PLA分子量对多孔膜结构的影响. 结果表明, 加入第二组分PEO-PPO-PEO能有效地促进规整蜂窝结构的形成. 蛋白质吸附实验结果进一步证明了PEO-PPO-PEO组分在孔洞内壁的富集, 由此构建了阻抗蛋白质吸附的图案化功能结构表面.

关键词 [水辅助法组装](#) [蜂窝状结构](#) [聚乳酸](#) [两亲三嵌段共聚物\(PEO-PPO-PEO\)](#)

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Preparation of Ordered and Porous Honeycomb Structure Film of Poly(lactic acid) with Pluronic® as the Second Component

SUN Wei, TANG Yue-Chao, JI Jian*

Key Laboratory of Macromolecule Synthesis and Functionalization of Ministry of Education, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

Abstract A porous poly(lactic acid) film with a well-ordered honeycomb structure was prepared via the breath-figure method. The addition of amphiphilic Pluronic® was proved to be able to benefit a lot to fabricate the well-ordered honeycomb-patterned film. Several influencing factors including atmosphere humidity, solution concentration and the molecular weight were investigated. The fluorescein isothiocyanate labelled bovine serum albumin(FITC-BSA) was used as the probes to investigate the protein absorption onto the pattern film. Fluorescence images showed the corresponding honeycomb patterns, indicating that the honeycomb-patterned films with protein-resistant pores could be successfully constructed with Pluronic® as the second component.

Key words [Water-assisted fabrication](#) [Honeycomb structure](#) [Poly\(lactic acid\)](#) [PEO-PPO-PEO](#)

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通讯作者 计剑 jjian@zju.edu.cn

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