

论文

## 改性聚酯异形中空微孔纤维性能研究

马晓光, 刘越, 崔河, 朱玉鸯, 肖茹, 顾利霞

东华大学材料科学与工程学院; 山东省化学纤维研究所; 东华大学材料科学与工程学院 上海; 山东省化学纤维研究所潍坊

收稿日期 2004-3-22 修回日期 2004-5-11 网络版发布日期 接受日期

**摘要** 利用不同的异形喷丝板, 将聚对苯二甲酸乙二酯(PET)与不同间苯二甲酸-5-磺酸基团摩尔含量的共聚酯(HCDP)共混纺丝, 制得一系列改性聚酯纤维. 改性纤维的断裂强度随共混HCDP中磺酸基团摩尔含量的增加呈现下降趋势, 但该趋势在磺酸基团含量达到一定数量后出现回升. 纤维对阳离子染料吸收率随磺酸基团摩尔含量的增加而增加, 但对分散染料而言此差异较小, 并且不论何种染料, 纤维横截面的变化对上染率的影响均不明显. 碱处理对纤维上染率影响巨大. 纤维保水率与纤维碱处理后形成的具有毛细效应的微孔结构以及异型纤维本身形成的毛细结构有密切关系, 而且纤维对水分的传输性能在很大程度上取决于纤维的横截面形状, 纤维碱处理后形成的微孔特别是透孔结构有助于输水性能改善.

**关键词** [异形中空纤维](#) [改性聚酯](#) [力学性能](#) [染色性能](#) [保水性能](#) [输水性能](#)

分类号

## STUDY ON PROPERTIES OF MODIFIED-POLYESTER HOLLOW FIBERS WITH DIFFERENT CROSS SECTION SHAPE

MA Xiaoguang<sup>1,2</sup>, LIU Yue<sup>2</sup>, CUI He<sup>2</sup>, ZHU Yuyang<sup>1</sup>, XIAO Ru<sup>1</sup>, Gu Lixia<sup>1</sup>

1 *Materials Science and Engineering College; Donghua University; Shanghai 200051*; 2 *Shandong Chemical Fiber Research Institute; Weifang 261031*

**Abstract** A series of modified-polyester hollow fibers were prepared by blend spinning of PET and a PET-based-*co*-polyester with different content of sodium 5-sulfonate-isophthalic acid with spinnerets for different cross section shape of biers. The tensile strength of the fibers first decreased with their sulfonate group content and then leveled off. The dye-uptake of fibers to Basic Blue GB was improved with the increase of the sulfonate group content, and it did not show obvious influence on the uptake of disperse dyes. The dye-uptake of the fibers was not affected by their cross section shape, but greatly influenced by alkaline hydrolysis. The water retention and water transmissibility of the modified fibers were closely related with the micromellular structure of fibers formed after alkaline hydrolysis and the capillary effect among profiled fibers.

**Key words** [Profiled hollow fiber](#) [Modified polyester fiber](#) [Ten sile property](#) [Dyeing property](#) [Water retention](#) [Water transmissibility](#)

DOI:

通讯作者 刘越

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(1040KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

#### 相关信息

- ▶ [本刊中 包含“异形中空纤维”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [马晓光](#)
- [刘越](#)
- [崔河](#)
- [朱玉鸯](#)
- [肖茹](#)
- [顾利霞](#)