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论文

基于TiO_2/SiO_2溶胶的新型PET缩聚催化剂的合成

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摘要:

合成了一种基于TiO_2/SiO_2溶胶的高活性PET缩聚催化剂, 用电子探针显微镜(EPMA)和热重分析(TGA)表征了催化剂的组分, 结果与理论值符合. X射线光电子能谱(XPS)结果证实, 催化剂中加入的己内酰胺与Ti存在配位作用, 极大地提高了催化剂的活性. 所制备的催化剂催化聚合得到的PET性能远优于用传统锑系催化剂制备的PET材料.

关键词: TiO2/SiO2溶胶; 聚对苯二甲酸乙二酯; 催化剂

Synthesis of Novel Catalyst Based on TiO_2/SiO_2 for Poly(ethylene terephthalate)

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Abstract:

A novel catalyst for the polycondensation of PET based on TiO_2/SiO_2 sol was synthesized. The composition of the catalysts was characterized by electron probe micro-analyzer(EPMA) and thermogravimetric analysis(TGA) methods. The results indicate that the composition of the catalysts can be well controlled and match well with theoretical values. X-ray photoelectron spectroscopy(XPS) results reveale that caprolactam added into the catalyst has coordinative effects with Ti and gives the catalyst ultra-high activity. The PET products catalyzed by the catalyst with caprolactam had far better properties than those synthesized using traditional antimony based catalysts.

Keywords: TiO2/SiO2 sol; Poly(ethylene terephthalate); Catalyst

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