

论文

## 聚对苯二甲酸1,3-丙二酯的自晶种成核等温结晶动力学

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**摘要** 研究了自晶种成核对聚对苯二甲酸1,3-丙二酯(PTT)结晶行为的影响. 示差扫描量热结果表明, 经过自晶种成核处理后, PTT的结晶温度明显增加. 应用Avrami方程分析了PTT等温结晶动力学, Avrami指数n的平均值为3.34, 表明初级结晶为三维球晶生长. 自晶种成核导致结晶活化能和链折叠功减小, 促进PTT的结晶.

**关键词** [聚对苯二甲酸1,3-丙二酯](#) [自晶种成核](#) [结晶动力学](#)

分类号

## ISOTHERMAL CRYSTALLIZATION KINETICS OF POLY (TRIMETHYLENE TEREPHTHALATE) UNDER THE INFLUENCE OF SELF-SEEDING NUCLEATION

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**Abstract** The effect of self-seeding nucleation on the crystallization behavior of poly(trimethylene terephthalate) (PTT) was studied. The result of differential scanning calorimetry(DSC)indicated that the crystallization temperature of PTT increased obviously under the influence of self-seeding nucleation. Avrami equation was applied to analyze the isothermal crystallization process of PTT. The average value of Avrami exponent is  $n=3.34$ , suggesting that the primary crystallization may correspond to a three-dimensional spherulitic growth. Self-seeding nucleation leads to the decrease of crystallization active energy and chain folding work, promotes the overall crystallization process of PTT.

**Key words** [Poly \(trimethylene terephthalate\)](#) [Self-seeding nucleation](#) [Crystallization kinetics](#)

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