

研究论文

## 原子转移自由基法合成八臂星型聚苯乙烯

于喜飞<sup>1,2</sup>, 张国<sup>1</sup>, 石彤非<sup>2</sup>, 安立佳<sup>2</sup>

1. 吉林大学化学学院, 教育部汽车材料重点实验室, 长春 130023;
2. 中国科学院长春应用化学研究所, 高分子物理与化学国家重点实验室, 长春 130022

收稿日期 2006-8-14 修回日期 网络版发布日期 2006-12-5 接受日期

**摘要** 设计合成了星型聚合物引发剂四(2,2-二氯乙酸)季戊四醇酯(TDCAP), 并通过原子转移自由基聚合合成了八臂星型聚苯乙烯. 用FTIR, <sup>1</sup>H NMR和GPC等手段对引发剂和星型高分子的结构进行了表征.

**关键词** [原子转移自由基聚合](#) [八臂聚合物](#) [聚苯乙烯](#)

**分类号** [0631.5](#)

## Synthesis of Eight-arm Polystyrene by Atom Transfer Radical Polymerization

YU Xi-Fei<sup>1,2</sup>, ZHANG Guo<sup>1</sup>, SHI Tong-Fei<sup>2</sup>, AN Li-Jia<sup>2</sup>

1. College of Chemistry, Key Laboratory of Automobile Materials of Ministry of Education, Jilin University, Changchun 130023, China;
2. State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

**Abstract** A new initiator for atom transfer radical polymerization(ATRP), (Cl<sub>2</sub>HCCOOCH<sub>2</sub>)<sub>4</sub>C(TDCAP) was designed and successfully synthesized. The initiator was used to initiate the polymerization of styrene via ATRP to method yield an eight-arm polystyrene with functional end-group chlorides. The different polymers could be prepared *via* ATRP of different monomers at 130 °C using TDCAP/CuCl/bPy as the initiating system. The initiator and eight-armed polymer were characterized by means of <sup>1</sup>H NMR, FTIR and GPC.

**Key words** [Atom transfer radical polymerization](#) [Eight-armed polymer](#) [Polystyrene](#)

DOI:

通讯作者 安立佳 [lian@ciac.jl.cn](mailto:lian@ciac.jl.cn)

### 扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(304KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [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“原子转移自由基聚合”的 相关文章](#)

▶ [本文作者相关文章](#)

· [于喜飞](#)

·

· [张国](#)

· [石彤非](#)

· [安立佳](#)