

研究简报

苯氧铜/正丁基锂体系引发MMA负离子聚合及其活性特征的研究

梁建国, 韩丙勇*

(北京化工大学可控化学反应科学与技术基础教育部重点实验室 北京 100029)

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摘要 采用苯氧铜/正丁基锂(PhOCu/*n*-BuLi)体系引发MMA聚合,通过GPC, ¹H NMR对聚合物进行了表征. 实验结果表明,该体系聚合反应速度较快,温度、引发体系组成是影响聚合物分子量及其分布、单体转化率、引发剂引发效率、聚合物的立构规整性的主要因素; -40 °C时分子量分布比较窄,但引发效率也比较低(大约15%). 低引发效率、宽分子量分布与引发剂的聚集状态有关. 分子量与单体浓度、引发剂浓度的关系说明,该体系具有一定程度的活性聚合特点.

关键词 [有机铜锂](#) [甲基丙烯酸甲酯](#) [负离子聚合](#)

分类号

Cuprous Phenoxy/*n*-Butyllithium as Initiator for Methyl Methacrylate Anionic Polymerization and Its Living Polymerization Characteristic

LIANG Jian-Guo, HAN Bing-Yong*

(The Key Laboratory of Science and Technology of Controllable Chemical Reactions, Ministry of Education, Beijing University of Chemical Technology, Beijing 100029)

Abstract Polymerizations of methyl methacrylate (MMA) initiated by PhOCu/*n*-BuLi in tetrahydrofuran solution have been carried out. The PMMAs synthesized were characterized by GPC and ¹H NMR spectra. The results show that MMA can be rapidly polymerized with high monomer conversion initiated by PhOCu/*n*-BuLi. The ratio of PhOCu and *n*-BuLi and polymerization temperature have large effect on initiator efficiency, molecular weight distribution (MWD) and microstructure of PMMA. At -40 °C, PMMA with relative narrow MWD and high syndiotactic can be synthesized, but at the same time, the initiator efficiency of PhOCu/*n*-BuLi is low, about 15%. The low initiator efficiency and broad MWD was related to association state of initiator. The relationships of molecular weight and monomer concentration, initiator concentration show that the polymerization reaction system has the characteristic of living polymerization.

Key words [lithium organocuprate](#) [methyl methacrylate](#) [anionic polymerization](#)

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通讯作者 韩丙勇 hanby@mail.buct.edu.cn

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