

论文

RAFT试剂*N*-咔唑二硫代甲酸1,4-对二甲基苯双酯的合成及应用

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摘要:

以咔唑和对二氯甲基苯为原料, 合成了以咔唑为Z基团的双功能团RAFT聚合链转移试剂*N*-咔唑二硫代甲酸1,4-对二甲基苯双酯(PXCBD). 以PXCBD为链转移试剂, 以苯乙烯、丙烯酸甲酯及*N,N*-二丁基丙烯酰胺为单体, 考察了PXCBD在RAFT聚合中合成多嵌段共聚物上的应用, 并研究了PXCBD及其合成的聚合物的荧光特性. 研究结果表明, PXCBD是一种性能优异的双功能团RAFT聚合链转移试剂, 可用于合成特殊结构并且带有荧光标识的功能高分子材料.

关键词: *N*-咔唑二硫代甲酸1,4-对二甲基苯双酯; 可逆加成-断裂链转移聚合(RAFT)试剂; 嵌段共聚物; 荧光标识

Synthesis and Application of RAFT Agent *p*-Xylylene Di(*N*-carbazylcarbodithioate)

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Abstract:

A double-functional reversible addition fragmentation chain transfer radical polymerization(RAFT) agent *p*-xylylene di(*N*-carbazylcarbodithioate)(PXCBD) was synthesized with carbazole and 1,4-bis(chloromethyl)benzene as main material. With PXCBD as a chain transfer agent, the well-defined triblock and pen-tablock polymers were controllably synthesized by RAFT polymerization of styrene, methyl acrylate and *N,N*-dibutylacrylamide. The fluorescence characteristic of PXCBD and polymers prepared by PXCBD were studied. The results show that PXCBD as RAFT agent possesses good control ability and can be used to synthesize fluorescence-labelled polymers with well-defined structure.

Keywords: Para-Xylylene di(*N*-carbazylcarbodithioate); Reversible addition fragmentation chain transfer radical polymerization(RAFT) agent; Block copolymer; Fluorescence-labelled

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