

材料化学工程与纳米技术

丙烯酰胺在聚乙二醇水溶液双水相聚合过程中的单体分配

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摘要

用改进溴化法对丙烯酰胺(AM)在聚丙烯酰胺(PAM)-聚乙二醇(PEG)-H₂O双水相体系中的分配进行了研究,分配系数随PEG浓度、分子量的增加而减少,随PAM浓度、分子量的增大而增大,而随温度的升高先减小后增大。并在此基础上,对AM在PEG水溶液双水相聚合过程中单体在两相的分配进行了研究,考察了PEG浓度、单体浓度、温度对聚合过程中单体分配的影响。

关键词

[丙烯酰胺](#) [聚丙烯酰胺](#) [聚乙二醇](#) [分配系数](#)

分类号

Monomer partitioning behavior in acrylamide aqueous two-phase polymerization in poly (ethylene glycol) aqueous solution

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Abstract

The partition of acrylamide (AM) in poly (acrylamide) -poly (ethylene glycol) (PEG) -H₂O aqueous two-phase system was systemically studied through measuring the AM concentration in each phase by the improved bromating method. It was found that the monomer partition coefficient decreased with the increase of PEG concentration and PEG molecular weight, and with the decrease of PAM concentration and PAM molecular weight. Furthermore, the monomer partition coefficient decreased at first with rising temperature and then turned to increase when the temperature increased sequentially. Based on this study, the monomer partition evolution in the process of AM aqueous two-phase polymerization in the PEG aqueous solution was investigated. At the same time, the effects of PEG and initial monomer concentrations as well as the polymerization temperature on the monomer partition in the process of AM aqueous two-phase polymerization in the PEG aqueous solution were also studied.

Key words

[acrylamide](#) [poly \(acrylamide\)](#) [poly \(ethylene glycol\)](#) [partition coefficient](#)

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