The Gelation Studies of N-Methylolated PAAms in Aqueous Media

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The gelation phenomena of N-Methylolated PAAm (M-PAAm) in aqueous media was studied. The critical gelation concentration (CGC) of N-Methylolated PAAm is very close to the calculated C* of the scaling theory. But the CGC of lower MW M-PAAm deviated from C* due to contamination of small molecules. We propose that the CGC is the close packing configuration of polymer molecules in solution. The experimental results of the gelation of M-PAAm/PAAm mixture proved that the close packing configuration is essential to make a gel. We calculated the minimum quantity of M-PAAm to make M-PAAm/PAAm mixture a gel by using the close packing configuration. We used a lattice model.

Introduction

Gelation is needed to make crosslinked polymers, which have many important uses in polymer and other fields of science. The method of gelation is divided into two. One is the most popular one step copolymerization of monomer

References