

Studi pendahuluan sintesis dan karakterisasi polistirena-ko-poli (etil akrilat) dengan metode atomic transfer radical polymerization dalam sistem larutan terdispersi = Preliminary study of synthesis and characterization of polystyrene co-poly-ethyl-acrylate with atomic transfer radical polymerization in solution dispersed system

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Abstrak

Dalam penelitian ini dilakukan sintesis polistirena-ko-poli(etil akrilat) dengan metode Atomic Transfer Radical Polymerization (ATRP) untuk mempelajari pengaruh konsentrasi stabilisator dan inisiator terhadap solid content dan viskositas, serta mempelajari pengaruh variasi komposisi monomer terhadap temperatur transisi gelas (T_g). Dari hasil penelitian didapatkan bahwa semakin tinggi konsentrasi stabilisator dan inisiator maka solid content dan viskositas akan semakin tinggi, dan pada variasi komposisi monomer tidak memberikan kecenderungan pada temperatur transisi gelas yang dihasilkan. Terbentuknya polistirena-ko-poli(etil akrilat) ditunjukkan oleh hasil karakterisasi dengan Fourier Transform Infra Red dan Differential Scanning Calorimetry yang terlampir dalam penelitian ini dan memiliki hasil tidak terbentuk homopolimer dari masing-masing monomer.

In this research, the synthesis of polystyrene-co-poly(ethyl acrylate) by the method of Atomic Transfer Radical Polymerization (ATRP) has been done to study the effect of the concentration of stabilizers and initiators on the solid content and viscosity of them. Then, this experiment also studied the effect of variations of monomers composition on the glass transition temperature (T_g) of polystyrene-co-poly(ethyl acrylate). The result showed that the higher concentration of stabilizers and initiators were, the higher the solid content and viscosity of the copolymer was obtained. In addition, the monomers composition did not affect the glass transition temperature of the resulting copolymers. The formation of polystyrene-co-poly(ethyl acrylate) was characterized by Fourier Transform Infra Red and Differential Scanning Calorimetry and the results showed that the formation of two homopolymers did not appeared.