

Photocationic Copolymerization of Tetrahydrofurna  
with Epichlorohydrin in the presence of  
Dipenyliodonium Hexafluorophosphate

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Photoinduced cationic copolymerization of THF with epichlorohydrin(ECH) in methylene chloride has been carried out in the presence of diphenyliodonium hexafluorophosphate, a photocationic initiator. However, the attempt to synthesize the block copolymer by addition of ECH to the living polymer of poly(THF) was not successful due to the high viscosity of the living poly(THF) which prevents the diffusion of ECH in the medium. And only random copolymer was obtained from the monomer mixture system. It has been cleared that the rate of polymerization of THF is remarkably increased in the presence of trace of ECH, however, the ECH component was not detected from the analysis of copolymer composition. Which was interpreted that the acceleration of the THF polymerization was ascribed to the enhanced initiation in the presence of ECH, however, ECH does not paly a role in the propagation. And even in the ECH rich system, polymerization proceeds mainly THF and ECH takes part in the reaction in the later stage of poloymerization after the THF is almost consumed. The living nature of the homoTHF polymerization is lost in this copolymeization system due to chain transfer when the cationic propagating end is replaced by ECH.