Synthesis and copolymerization of 8-methacryloxy quinoline with different actived monomers

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8-methacryloxyquinoline was prepared by reaction of 8- hydroxyquinoline with methacrylic acid at 0oc in presence of N,N’ dicyclohexylcarbodimide (D.C.C.I) the structure of monomer was confirmed by IR and 1HNMR spectroscopy.The monomers was homopolymerized and copolymerized with each MA, AN ,M MA, ST, AM , VA, and nBMA in solution using DMF as solvent and ABIN (1mole %) as a free radical initiator the composition of resulting copolymers were determined by 1HNMR using the approach of Grassiae et al.The reactivity ratios of the six systems studied were determined by both Fineman - Ross and Kelen - Tüdös methods. It was found that there is a good a agreement between the values calculated by the two methods.The Q and e values for MAQ was calculated using the Alfrey& Price equations and were found to be Q = 1.62, e = 1.40The sequence distribution of the monomer units along the copolymer chains were calculated from the monomer reactivity ration on the basis of the terminal copolymerization model. It was found that t he triad fraction f222 increase with increasing f1, while triad fraction f121 decreases with Increasing f1. Triad fraction F221 has maximum values at f1 equals 0.6, 0.8, 0.4, 0.7, 0.9 and 0.6 for MAQ-MA, MAQ-AN, MAQ-MMA, MAQ-ST, MAQ-VA and MAQ-BuMA copolymer systems respectively. The structure of the monomer was confirmed by FTIR, Mass spectroscopy and 1HNMR spectroscopy.The technological importance of Poly (AN) is known to suffer from several disadvantages weak mold ability; color instability and weak dye ability .efforts were made to overcome these difficulties, by introducing our monomer MAQ to improve its properties. In this study the thermal behavior of MAQ-AN copolymers was studied and MAQ comonomer was found to initiate the nitrile group oligomerization.