

研究论文

醇与丙烯酸酯的介电弛豫性质

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摘要:

Dielectric relaxation of alcohols (1-propanol, 1-butanol, sec-butanol, tert-butanol, 1-pentanol, 1-heptanol, 1-octanol, and 1-decanol) with acrylic esters (methyl methacrylate, ethyl methacrylate, and butyl methacrylate) at 9.84 GHz were studied in n-heptane at 298 K. The result showed that 1:1 complex was predominant in these systems. The relaxation time showed a linear dependence with alkyl chain length of both alcohols and acrylic esters, but the dielectric constant showed a reverse trend. A comparative study of the free energy of activation for the dielectric relaxation and viscous flow suggested that a greater interference by neighboring atom was observed in the process of viscous flow than in dielectric relaxation, as the latter involved rotational form of motion, whereas the viscous flow involved both rotational and translational forms of motion.

关键词: Dielectric relaxation Alcohols Acrylic esters Hydrogen bonding Solvent effects

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