

Abstract

Photon correlation technique was used to study the local density fluctuation by measuring scattering intensity and diffusion coefficient of binary liquid mixture, methanol-cyclohexane. These measurements covered the temperature range $T = 45^{\circ}\text{C}$ to 47°C around the critical point. The growth of normalized intensity from high temperature to near critical point was slowly growth and can be fitted by simple power law, after passing through critical point it falled down rapidly. The maximum normalized intensity from various concentration was maximum at critical composition (29% methanol). The minimum diffusion coefficient D was not found to be at the same temperature at which normalized intensity is maximum.