

DETECTION OF PHASE TRANSITION IN QUINOLINE LIQUID BY POLARIZED RAYLEIGH SCATTERING TECHNIQUE

O. ELOUTASSI, M. HAMEDOUN, *L.P.S., Department of Physics, D.M. Sciences Faculty, B.P. 1796, Fes-Atlas, Morocco*; A. HAJJARI, *Sciences Faculty of Fes, B.P. 1799, Fes-Atlas, Morocco*; L. LETAMENDIA, M. BELKADI, *C.P.M.O.H. Physics Dept., Bordeaux I Sciences University, 33405 Talence Cedex, France*.

In this paper, we measured the polarized light scattering of quinoline by Rayleigh-Brillouin technique. We are interested in Brillouin doublet position in polarized scattering spectra of the liquid. We are also interested in the ratio of the centered components of Rayleigh peak to the Brillouin doublet. The Brillouin position measured by this technique is very precise and lead to study the eventual liquid phase transition in quinoline. We have calculated the sound velocity, assumed to be linear as temperature function. However, an abnormal behavior in temperature range $288K \leq T \leq 330K$, is observed in our experimental results. We have also calculated the Landau-Placzek ratio. This ratio exhibit two picks in the range temperature mentioned above. These anomalies show that quinoline presents a phase transition strong enough to perturb its thermodynamic equilibrium.