

Abstract

Lead borate glass was prepared by the quench method, followed by treatment at its isothermal temperature at different time periods. When the sample was rapidly cooled from the melt, it showed two distinguished opalescent layers. The SEM analysis and XRD pattern provide characteristics of glass without XRD peaks and their morphology show the aggregated spherical particles in the phase separated glass. This data show that phase separation occurred even when the melts were rapidly cooled. However, the sample shows a Ostwald ripen with increasing time of heat treatment, which implies that the size of particles increases and their number decreases. The infrared absorption spectra show shift edge for sample glass with heat treatment, which indicates a change of structural configuration, i.e. conversion of tetrahedral boron on triangular boron coordination