

Effect of Curing Process on the Dynamic Response of Polymer Dispersed Liquid Crystal Films

Fatima Zohra Abdoune, Leila Benkhaled, Lahcène Méchernène, Ulrich Maschke

Abstract :

The time relaxation of the optical transmission of polymer-dispersed liquid crystal films was investigated after application of an electric rectangular pulse. These films, consisting of liquid crystalline microdomains dispersed in a polymer matrix, were obtained by polymerization induced phase separation using ultraviolet and electron beam curing techniques. The effects of the curing procedure and film thickness on the transmission properties were investigated. The electro-optical response was expressed via a hierarchy of order parameters. A good agreement between the experimental data and calculated transmission values was found.

Keywords : liquid crystals; optical properties; phase separation; polymers; relaxation.

Journal Title / Revue : Macromolecular Symposia, DOI: 10.1002/masy.201150514, Issue :1, Volume : 303, pp. 100-107, May 2011.