

Optical properties for PDLC films containing acrylics polymers crosslinked to UV radiation

Amina BOURICHE¹, Ghizlene HAKEM ¹, Ulrich MASCHKE ², Lamia BEDJAOU-ALACHAHER ¹

¹ Laboratory of Research on Macromolecules (LRM), Faculty of Sciences, University of Abou Bekr Belkaïd Tlemcen, 13000, Tlemcen, Algeria

² Univ. Lille, CNRS, INRAE, Centrale Lille, UMR 8207 - UMET - Materials and Transformations Unit, Lille 1, France

ABSTRACT: Polymer-Dispersed Liquid Crystals, PDLCs, are formed by liquid crystal droplets embedded in a polymer matrix, which can assume different liquid crystal director configurations ¹. The content of this work is the development and characterization of PDLC films composed of monomer Isobornyl acrylate (IBOA) and a mixture of IBOA and 2-Ethylhexyl acrylate (2-EHA) monomers, with a liquid crystal E7. Their unique optical and electro-optical properties make them suitable for applications in various technological fields ^{2,3}. These systems are developed by UV light curing of two different mixtures, the first one is made of IBOA, the liquid crystal E7 in the presence of the photoinitiator Darocur 1173 and the cross-

linking agent 1, 6 hexanedioldiacrylate (HDDA). The second mixture contains the same components as the first except the addition of monomer 2-Ethylhexyl acrylate (2-EHA). An electro-optical characterization of the polymerized mixtures was carried out in order to understand the behavior under the effect of an electric field.

KEYWORDS: liquid crystal E7, composite materials PDLC, electro-optical characterization.

References

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