

DIELECTRIC PROPERTIES OF POLYMER DISPERSED LIQUID CRYSTAL DOPED WITH MAGNETIC PARTICLES

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The large scale study of dispersion of nematic liquid crystal in a polymer matrix (PDLC) began after it was shown that these systems can be used to create electro-optical devices of a new type. The prepared samples consisted of liquid crystal 6CHBT dispersed in polyvinyl alcohol and were doped with spherical or rod-like magnetic particles. Due to doping of PDLC with magnetic particles the significant changes in the effective value of the permittivity were observed in the frequency range 10^{-1} Hz - 10^2 Hz. In this frequency range the conductivity of PDLC has two components: the ion, caused by transfer of ions in liquid crystal and the electron, caused by transfer of electrons inside polymer. The presence magnetic particles in PDLC increases the ion component of the conductivity as well as the electron component of the conductivity.

13.4 cm

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9.7 cm