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材料物理和化学

聚氨酯基聚合物分散液晶的制备及电光性能研究

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摘要： 采用热聚合分相法制备了聚氨酯基聚合物分散液晶(PDLC)薄膜,研究了不同聚合温度及不同单体浓度下制备的PDLC薄膜的电光性能,并结合扫描电镜探讨了聚合物网络形貌与电光性能之间的关系。研究发现:当单体质量分数为30%,聚合温度为343.2 K,制备的PDLC电光性能较为理想。

关键词： 聚合物分散液晶 聚氨酯 电光性能 聚合物网络形貌

Preparation and Electro-Optical Properties of Polyurethane Matrix Based Polymer Dispersed Liquid Crystal Films

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Abstract: Polymer dispersed liquid crystal (PDLC) films with polyurethane matrix were prepared by the thermal polymerization-induced phase separation method. The electro-optical properties of the PDLC films prepared under different polymerization temperatures and monomer concentrations were studied. The relationship between the morphology of polymer networks and the electro-optical properties were investigated also. It was found that under the condition that the monomer content was 30%,the polymerization temperature was 343.2 K, the electro-optical properties of the prepared PDLC film were optimum.

Keywords: polymer dispersed liquid crystals polyurethane electro-optical properties morphology of polymer networks

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