

会员专区

帐号:
密码:

[了解会员服务](#)

广告贴吧

锂离子电池材料

我公司主要从事锂离子正极材料和新型复合金属氧化物的研发、生产与销售

洁纶易纺科技-抗菌纤维

公司致力于抗菌等功能纺织产品开发,是中国抗菌纤维先锋和第一品牌

杉杉科技锂电负极材料

生产中间相炭微球(CMS)等高性能的锂离子电池正负极材料

焦点房产网

买房装修,请到焦点房产网

[发布贴吧广告]

首页 → 材料网刊 → 优秀论文回展 → 正文

低阈值电压柔性PDLC膜电光特性的研究

刘国柱, 夏都灵, 黄子强, 杨文君, 康桂珍

浏览次数:

(电子科技大学电子薄膜与集成器件国家重点实验室, 成都 610054)

版权所有 不得转载

摘要 研究了以ITO-PET为基板柔性PDLC膜的电光特性,讨论了基板的表面效应、单体的黏度、膜厚、单体的含量等因素对PDLC膜电光特性的影响。研究发现,在相分离的过程中,与表面摩擦方向近似相互垂直的上下两柔性基板上的摩擦印痕边界之间易形成类似于槽榫状聚合物“壁垒”。这些聚合物“壁垒”具有很强的表面锚定能,能固定液晶微滴,阻止其流动和相互之间团聚,使得细小液晶微滴能按照摩擦方向排列整齐,可以降低其阈值电压和饱和驱动电压,且提高了对比度。研究还发现单体与液晶二者之间黏度的匹配程度也是实现优异电光性能的关键因素之一。通过优化不同膜厚和单体的含量,制备出了具有低阈值电压、低饱和驱动电压、较高对比度的柔性PDLC膜。

关键词 聚合分散液晶 表面效应 黏度 阈值电压

Study of E-O Characteristics of Low-threshold Voltage Flexible PDLC Films

LIU Guozhu, XIA Duling, HUANG Ziqiang, YANG Wenjun, KANG Guizhen

(State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054)

Abstract In this paper, the E-O characteristics of the flexible PDLC films based on the ITO-PET substrate are mainly investigated. Meanwhile, many factors influencing the E-O characters of the flexible PDLC films are discussed, which include the surface effect of substrate, monomer viscosity, film thickness, monomer concentration etc. In the phase-separation process, the similar groove polymer “bulwark” can be easily formed between the rubbing moulage boundaries on fluctuating flexible substrates in the almost vertical rubbing direction. The groove polymer “bulwark” has a strong surface anchoring energy, and it can fix LC droplets and hold back flowage and aggregation. Almost all smaller LC droplets uniformly exhibit in the rubbing direction. The threshold and saturation driving voltage are declined and the contrast ratio is also increased. The matching extent of the viscosities between monomer and LC is one of the factors realizing the excellent E-O property. Finally the flexible PDLC films provided with low-threshold voltage, low saturation driving voltage and high contrast ratio are prepared by optimizing the thickness of films and monomer concentration.

Key words polymer dispersed liquid crystal, surface effect, viscosity, threshold voltage

[点击查看全文](#) 如果您没有安装PDF阅读软件,请点[这里](#)下载

责任编辑:

2009年2月第1期