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材料物理和化学

有机绝缘层材料聚(4-乙烯基苯酚)喷墨打印工艺研究

何慧^{1,2}, 王刚², 赵谏玲¹, 刘则², 侯文军², 代青², 徐征¹

1. 北京交通大学 发光与光信息技术教育部重点实验室, 光电子技术研究所, 北京 100044;

2. 京东方科技集团 技术研发中心, 北京 100176

摘要: 通过压电喷墨打印方式在氧化铟锡(ITO)玻璃上直接图案化打印聚(4-乙烯基苯酚)(PVP),研究了不同浓度PVP的电学特性,从电容、漏电流、击穿场强几个方面进行了分析。结果表明,采用打印方式得到的PVP绝缘层在0~40 V的外加电压下,漏电流密度在 10^{-11} ~ 10^{-8} A/cm²范围内,为打印方式制备高性能交联PVP(CL-PVP)介电层提供了必要的参考。

关键词: 聚(4-乙烯基苯酚) 喷墨打印 有机薄膜晶体管 绝缘层

Inkjet Printing Organic Dielectric Material-Poly(4-Vinylphenol)

HE Hui^{1,2}, WANG Gang², ZHAO Su-ling¹, LIU Ze², HOU Wen-jun², DAI Qing², XU Zheng¹

1. Key Laboratory of Luminescence and Optical Information, Ministry of Education, Institute of Optoelectronics Technology, Beijing Jiaotong University, Beijing 100044, China;

2. Technology Research Institute, BOE Technology Group Co., LTD, Beijing 100176, China

Abstract: The piezoelectric inkjet printing of a polymer dielectric-poly (4-vinylphenol) (PVP), directly patterned onto Indium Tin Oxide (ITO) glasses, has been demonstrated. The electric characteristic of inkjet printed PVP dielectric films with various concentrations was studied. Capacitance, leakage current, and breakdown electric fields of the thin films were analyzed. The results show that with the applied voltage of 0~40 V, inkjet printed PVP films exhibit low leakage current density in the range of 10^{-11} ~ 10^{-8} A/cm², as a necessary reference for printing a high performance cross-linked PVP (CL-PVP) insulator.

Keywords: poly(4-vinylphenol) inkjet print organic thin film transistor dielectrics

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通讯作者: 徐征, E-mail: zhengxu@bjtu.edu.cn

作者简介:

作者Email: zhengxu@bjtu.edu.cn

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