Organic Electronics
Volume 5, Issue 6 , December 2004, Pages 291-297

doi:10.1016/j.orgel.2004.10.001 Cite or Link Using DOI

The anisotropic dielectric function for copper phthalocyanine thin films

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Received 12 August 2004; revised 6 October 2004; accepted 12 October 2004. Available online 5 November 2004.

Abstract

Copper phthalocyanine (CuPc) thin films were prepared by organic molecular beam deposition (OMBD) in high vacuum and ultra-high vacuum on passivated Si(1 1 1) using β-phase CuPc as source material. The substrates were kept at room temperature during the deposition. The IR peak positions indicate that the films consist mainly of α-phase CuPc, while the relative intensities suggest that the films are anisotropic. The anisotropic dielectric function for these CuPc layers was determined from ellipsometric spectra using uniaxial models in the range from 0.73 to 5 eV.

Keywords: Ellipsometry; Infrared spectroscopy; Optical anisotropy; Organic molecular thin films; Copper phthalocyanine