

ADVANCED SPECTROSCOPIC ELLIPSOMETRY FOR DETAILED INVESTIGATION OF OLED MULTILAYERS

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In this work, detailed optical properties of multilayer organic thin films composed of 3,3'-Di(9H-carbazol-9-yl)-1,1'-biphenyl (mCBP), tris(4-carbazoyl-9-ylphenyl)amine (TCTA), and 4,6-Bis(3,5-di(pyridin-3-yl)phenyl)-2-methylpyrimidine (B3PymPm) were investigated using advanced spectroscopic ellipsometry, including reverse backside reflection (BSR) measurements. These films were fabricated via thermal evaporation onto glass, quartz, and glass/ITO substrates. The study emphasizes the impact of the substrate and the significance of reverse BSR in evaluating the complex refractive index and absorption coefficient of the organic thin films.

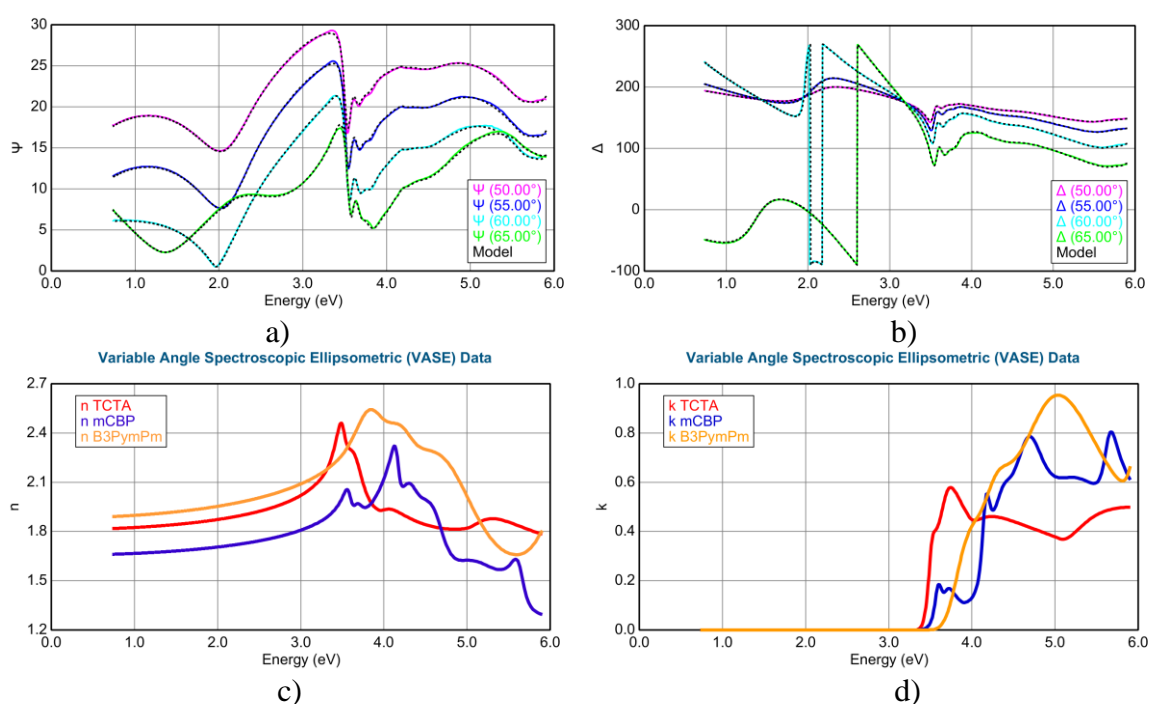


Fig.1 Main ellipsometric angles Ψ (a) and Δ (b) as a function of photon energy at four incident angles for glass/TCTA (43 nm)/mCBP(62 nm)/B3PymPm (55 nm) multilayer structure. The dotted lines represent the model fit (MSE = 6.7). Refractive index (c) and extinction coefficient (d) as a function of photon energy are presented for all three organic compounds.