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Layer resolved evolution of α -sexithiophene films: Correlation between PEEM and optical reflectance EBRAHIM GHANBARI, THORSTEN WAGNER, PETER ZEPPENFELD, Johannes Kepler university — α -sexithiophene (α -6T) is a well-known organic dye pigment which represents a model system to study the photo-physical properties of π -conjugated molecules. We apply a combination of Differential Reflectance Spectroscopy (DRS) and Photo Electron Emission Microscopy (PEEM) to follow the growth of α -6T on Ag(111) surfaces in real time. The deposition of the molecules changes the density of states at the surface as well as the actual photoelectron emission barrier. Therefore, the lateral variation of the electron yield can be used to follow the growth of layers and 3D crystallites. Upon opening of the shutter, the PEEM intensity rises uniformly across the entire field of view (145 μm) until the first layer is closed. The following drop of the electron yield is terminated when the wetting layer is completed and the nucleation of 3D islands sets in. The DRS and the PEEM are synchronized and both signals are recorded simultaneously. The evolution of different features in the normalized differential optical reflectance can be attributed to the formation of the first layer, the second layer, the nucleation and growth of 3D crystallites. Therefore, we can make a direct correlation between the PEEM and the transients of the spectral reflectance.

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