413-039 Supramolecular structure of a perylene derivative in thin films deposited by physical vapor deposition

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Thin films of a perylene derivative, the bis butylimido perylene (BuPTCD), were produced using thermal evaporation (PVD, physical vapor deposition). The main objective is to investigate the supramolecular structure of the BuPTCD in these PVD films, which implies to control the thickness and to determine the molecular organization, morphology at micro and nanometer scales and crystallinity. This supramolecular structure is a key factor in the optical and electrical properties of the film. The ultraviolet-visible absorption revealed an uniform growth of the PVD films. The optical and atomic force microscopy images showed a homogeneous surface of the film at micro and nanometer scales. A preferential orientation of the molecules in the PVD films was determined via infrared absorption. The X-ray diffraction showed that both powder and PVD film are in the crystalline form.