

Influence of substrate surfaces on the growth of organic films

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Abstract

3,4,9,10-Perylene tetracarboxylic dianhydride (PTCDA) films were grown by organic molecular beam deposition (OMBD) under UHV conditions on hydrogen terminated Si(1 0 0) and sulphur passivated GaAs(1 0 0) surfaces. X-ray diffraction (XRD), X-ray reflectivity (XRR), Raman spectroscopy, and atomic force microscopy (AFM) are employed to study the influence of substrate surfaces on the structural properties of the organic films. Both phases of PTCDA, α - and β -polymorphs, are found to grow on both substrates. The substrate surfaces determine the preferential growth of α - and β -phases of PTCDA crystals at room temperature.

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