

Raman spectroscopy: a powerful tool for characterisation of Ag/3,4,9,10-perylene-tetracarboxylic-dianhydride/GaAs heterostructures

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Abstract

The present contribution emphasises the capabilities of Raman spectroscopy for the characterisation of chemical and structural properties of thin organic films. As an example, a perylene derivative is presented, namely 3,4,9,10-perylene-tetracarboxylic-dianhydride (PTCDA). The focus will be directed to the Raman monitoring of dynamic processes. First, the PTCDA film formation on GaAs substrates by organic molecular beam deposition will be followed. The changes in the GaAs bands and PTCDA internal and external vibrational modes will be investigated as indicators for the interface formation. Secondly, the PTCDA internal modes will be monitored upon the deposition of silver onto the PTCDA/GaAs heterostructure.

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