



## Interaction of metals with an organic semiconductor: Ag and In on PTCDA

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### Abstract

The interaction of Ag and In with a thin film of 3,4,9,10-perylenetetracarboxylic dianhydride (PTCDA) was studied by near-edge X-ray absorption fine structure (NEXAFS). Upon Ag deposition on a PTCDA film of 20 nm thickness the relative intensities and lineshapes, as well as the angular dependence of the spectra remains unchanged, illustrating the formation of a chemically unreactive Ag/PTCDA interface. On the other hand, the adsorption of 0.3 nm In strongly decreases the intensity of the  $\pi^*$  resonances in C and O K-edge NEXAFS spectra. This is attributed to a strong charge transfer between In and PTCDA, leading to a redistribution of the charge in the molecule. However, the absence of a strong shift or new features and negligible dependence of peak intensities corresponding to  $\pi^*$  resonances on the In thickness indicate that the interaction between In and PTCDA is not accompanied by a covalent bond formation.

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