

Abstract Submitted
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Long Range Modification of a Metal Surface Electronic Structure by an Organic Semiconductor JINGYING WANG, DANIEL DOUGHERTY, North Carolina State Univ — In an organic spintronic device the interaction between electrode surface and organic semiconductor layer plays an important role in spin injection at this interface. The antiferromagnetic material Cr(001) is known to have a spin-polarized state near Fermi level that could potentially hybridize with organic molecules. Here we report our STM/STS study of electronic structure at interface between an organic semiconductor, PTCDA, and Cr(001) surface. The study shows that the surface state at Fermi level of Cr(001) can be broadened by PTCDA molecules deposited on the surface due to hybridization of PTCDA molecular orbital and conduction sp band of Cr(001). This indirect modification is not only localized at molecular adsorption sites, but also extends several nm to bare surrounding Cr(001) surface and decays with distance away from PTCDA molecules.

Jingying Wang
North Carolina State Univ

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