

Abstract Submitted
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Single Molecule Study of Charge Transfer in 6T-TBrPP-Co Molecular Complex YUAN ZHANG, U.G.E. PERERA, S.-W. HLA, Ohio University, Athens 45701, USA — When two molecules having tendency to donate or accept electronic charge are put together, charge transfer between the molecules can take place. By a suitable selection of donor and acceptor molecules, it is possible to engineer an entire class of materials having metallic, semiconducting, insulating, or even superconducting properties. Here, we present a low temperature scanning tunneling microscopy and spectroscopy study of single molecule level charge transfer process between α -sexithiophene(6T) and TBrPP-Co molecules on a Cu(111) surface. We form molecular clusters composed of both molecular species on Cu(111). The charge transfer between the molecules is directly evident in the tunneling spectroscopy data, which reveals the shift of 6T HOMO towards the surface Fermi level indicating donation of charge from 6T to TBrPP-Co.

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