<u>Chemical Reviews</u> Volume 107, Issue 4, April 2007, Pages 1161-1232

Electronic and vibrational spectroscopies applied to organic/inorganic interfaces

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Abstract

The control of the interfacial properties within organic electronic and optoelectronic devices is critical in achieving high efficiencies. Both organic-organic and organic-inorganic interfaces are important in this regard. This article discusses the use of vibrational spectroscopic methods to probe the structure of the interfacial properties of organic systems, such as geometric structure, band bending and interfacial chemistry. Focus is on the archetype molecular organic materials with application to devices. Using these approaches, it is possible to "fine-tune" the properties of the interface, controlling organic structure as well as the electronic properties of the structures containing these heterogeneous material junctions.