CIN2
CENTRE D'INVESTIGACIÓ
EN NANOCIÈNCIA
I NANOTECNOLOGIA
CAMPUS UAB. BELLATERRA. BARCELONA

SEMINAR

UNDERSTANDING THE ELECTRONIC AND MAGNETIC PROPERTIES OF METALORGANIC ADSORBATES WITH SCANNING TUNNELLING SPECTROSCOPY

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Metalorganic complexes have attracted wide interest in surface magnetism. The embedding organic ligands provide versatile ways to control the magnetic properties of metal ions by tuning the intra and intermolecular interaction. However, the adsorption of such complexes on metallic substrates introduces a new type of interaction, the substrate-molecule coupling, which competes with the intermolecular forces determining in many cases the final adsorption configuration and physical properties of the molecule. By using scanning tunnelling microscopy at cryogenic temperatures we examine the local electronic structure of the molecules and manipulate them at the atomic scale to study the evolution of the electronic properties of metal-phthalocyanine molecules adsorbed on nobel metal surfaces going from individual molecules to a few monolayers, as intermolecular interactions gradually gain importance over the molecule-substrate coupling. In the regime where substrate interaction dominates, interesting phenomena such as orbital specific electronic chirality, and Kondo effect on a orbital spin are observed. Complementary X-ray circular dichroism experiments have been performed to correlate the electronic structure to the magnetic properties of the molecular layers.

REMEMBER

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Specific Seminar: Understanding the electronic and magnetic properties of metalorganic adsorbates with scanning tunnelling spectroscopy
DATE: May 7, 2010
TIME: 12:00
PLACE: IFAE

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