

Students' Annual Seminar

Probing active Interfaces at Ferromagnet- Organic molecules interface

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When an organic molecule is adsorbed on a metal surface, new electronic states may be formed at the interface between the metal and the organic molecule (OM). If the interaction between the metal-OM is weak (Physisorption), a slight broadening in the electronic states takes place. On the other hand, if these interactions are strong enough (chemisorption), the interface can have completely different physical, chemical and magnetic properties than the parent layers. Understanding the interface properties of such systems is a very complicated study. There are studies which show that interface may cause a change in surface density of states, magnetic anisotropy due to spin dependent hybridization and interfacial spin selectivity. By changing the chemical structure and chemical composition of the organic molecule or by changing the metal surface, these interface interactions can be suitably altered. We have initiated research in fabricating devices to use different combinations of metal (mostly ferromagnets) and organic molecules. This is being done by developing in-situ shadow mask techniques. We begin by characterising the surface structural properties of single crystal substrates, to be used as templates to grow ordered molecular layers, using RHEED. Subsequently, we intend to use in-situ STM measurements to characterise the electronic and magnetic properties of the surfaces.

Tuesday, May 9th 2017

4:00 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS