

PLEASE POST

Physics Department Seminar

Friday March 16th, 2001

11:00am in PhSc 105

“X-ray Magnetic Linear Dichroism of Fe-Ni Alloys on Cu(111)”

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Abstract:

We are studying layer-by-layer synthesis of ultra-thin metal films by controlling at the monolayer level the composition and structure of these films, including the interfacial region. We have prepared $\text{Ni}_{1-x}\text{Fe}_x$ multilayers using simultaneous evaporation of pure Ni and Fe on Cu(111) in order to better understand the Giant Magnetoresistive (GMR) effect in $\text{NiFe/Cu}(y)$ systems that are relevant to magnetic disk drive heads. Using Undulator Beamline 7.0 and the Spectromicroscopy Facility (7.0.1.2) at the ALS, we have measured X-ray Magnetic Linear Dichroism (XMLD) signals for five different thin Ni-Fe alloys films on Cu(111) with composition ranging from 34% to 76%. The Curie temperature for all of these samples was in the range -25°C to -130°C , which is considerably lower than was previously seen for such films deposited on Cu(100).