

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Structure and magnetism of  $\text{Ni}_{50}\text{Mn}_{50}$  monolayers on  $\text{Cu}_3\text{Au}(001)$** <sup>1</sup> WALDEMAR MACEDO, REINALDO OLIVEIRA JR., MAXIMILIANO MARTINS, MANOEL PIRES, CDTN — The growth, structure and magnetism of equiatomic NiMn ultrathin films on  $\text{Cu}_3\text{Au}(100)$  and the magnetism of Fe/FeMn bilayers on this substrate were investigated. NiMn alloys in a concentration range around 50-50% have an  $L1_0$  structure with lattice constants  $a$  and  $c$  of 3,74 e 3,52 Å, respectively. This NiMn-phase is antiferromagnetic (AFM), with high Néel temperature ( $\sim 1070$  K), being very interesting for ferromagnetic / antiferromagnet systems with exchange bias effect and, therefore, for magneto-electronic devices.  $\text{Cu}_3\text{Au}$  is an ordered fcc phase with lattice parameter of 3,75 Å, a substrate with very good epitaxial relationship with  $L1_0$  NiMn. The NiMn monolayers were grown by coevaporation, under molecular beam epitaxy conditions, and characterized in situ by RHEED, LEED, XPS, AES and MOKE. Structural analysis revealed the epitaxy and layer-by layer growth at room temperature. MOKE measurements suggest that the Fe/ $\text{Ni}_{50}\text{Mn}_{50}$  bilayers present exchange bias, indicating that equiatomic NiMn films, as grown on  $\text{Cu}_3\text{Au}(100)$  at room temperature, is AFM, as expected for the  $L1_0$ .

<sup>1</sup>Financial support: CNPq, CAPES and CNPq/Millennium Institute of Nanotechnology

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Date submitted: 26 Nov 2007

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