

Abstract Submitted
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Resonant X-Ray Emission investigation of Fe/GaAs Spin Devices

JESSICA MCCHESENEY, Montana State University and ALS, C. ADELMANN, University of Minnesota, PER-ANDERS GLANS, K.E. SMITH, Boston University — The ability to produce spin polarized electrons has important consequences to electronics, as we know it. One such spintronics system is Fe on GaAs. Fluorescence measurements, using synchrotron radiation, were used to probe the electronic structure of the Fe at the interface of a working device structure. These ferromagnetic-semiconductor heterostructures were grown via molecular beam epitaxy. Absorption spectroscopy (NEXAFS) and energy-resolved fluorescence (RIXS) both on and off resonance were done on the Fe L-edge. Subtle differences between samples with differing degrees of spin polarization were observed. These differences are discussed in terms of bonding at the interface. Supported by ONR and DOE.

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