

Abstract Submitted  
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**Resonance Photoemission and Spin Polarization of  $\text{Fe}_x\text{Co}_{1-x}\text{S}_2$** <sup>1</sup> XIN ZHANG, NING WU, PETER DOWBEN, Nebraska Center for Materials and Nanoscience, Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE 68588-0299, CHRIS LEIGHTON, MICHAEL MANNO, Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN 55455, USA, ELIO VESCOVO, Brookhaven National Laboratory, National Synchrotron Light Source, Upton, New York 11973, USA — The electronic structure in the region of the Fe/Co 3d band for  $\text{Fe}_x\text{Co}_{1-x}\text{S}_2$  has been investigated by photoemission and spin polarized photoemission. The comparison between the results for different content of doped Fe was made, specifically  $x=0, 0.05, 0.10, 0.15$  and 1. While the surface spin polarization of  $\text{Fe}_x\text{Co}_{1-x}\text{S}_2$ , measured by spin polarized ultraviolet photoemission, was reduced compared with the bulk value, we see that the spin polarization increases with Fe doping level for textured thin films. The resonance photoemission spectroscopy shows that sulfur bands have strong resonance at the photon energy of the Co 2p core level, indicating strong hybridization between Co and sulfur bands in  $\text{Fe}_x\text{Co}_{1-x}\text{S}_2$  (small  $x$ ) however, the ultraviolet photoelectron spectroscopy (UPS) of  $\text{FeS}_2$  exhibits a slightly different d-band density of states than  $\text{Fe}_x\text{Co}_{1-x}\text{S}_2$ .

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