Abstract Submitted
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Photoemission studies of Spin Polarized Electrons from Chiral Tungsten[1] N. K. LEWIS, School of Physics and Astronomy and the Photon Science Institute, K. J. AHRENDSEN, University of Nebraska-Lincoln, Y. LASSAILLY, Physique de la Matire Condense, I. VOBORNIK, J. FUJII, Istituto Officina dei Materiali (IOM), T. J. GAY, University of Nebraska-Lincoln, W. R. FLAVELL, E. A. SEDDON, School of Physics and Astronomy and the Photon Science Institute — We have measured the spin polarization of photoemission from two-dimensionally chiral W surfaces. Theoretical studies indicate that the surface of an oblique crystal lattice can produce a spin polarization parallel to the direction of the electron crystal momentum that inverts between enantiomorphs [1]. Using the APE-LE beamline at the Elettra synchrotron facility in Italy, we probed the electronic structures of W(321) and W(-3-2-1) surfaces using spin- and angle-resolved photoemission. These measurements are the first of their kind for this crystal surface. We first systematically varied incident photon energy that identified 65 eV as optimal for observing a spin polarization. With this photon energy, we then identified locations of interest in E-k space. For our selected points of interest, significant polarizations were observed for all three spin components and a value as high as 20% was observed in a particular case. Further studies are under way to disentangle the various possible origins of our spin polarization results. [1] N. K. Lewis, P. J. Durham, W. R. Flavell, and E. A. Seddon, Physical Review B **97**, (2018).

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