

Abstract Submitted
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Imprinting Chirality into inorganic CuO Thin Films ROLAND WIDMER, ROMAN FASEL, OLIVER GROENING, FRANZ-JOSEF HAUG, PIERANGELO GROENING, EMPA MATERIALS SCIENCE AND TECHNOLOGY, FEUERWERKERSTRASSE 39, CH-3602 THUN TEAM — Switzer et al. [1] have shown, that thick ($>300\text{nm}$) films of CuO grown electrochemically in the presence of chiral tartaric acid (TA) acquires a chiral orientation with respect to the growth surface. We have investigated this growth on Au(100) in the presence of chiral TA for low film thicknesses by X-ray Photoelectrons Spectroscopy and X-ray Photoelectron Diffraction (XPD). The resulting XPD patterns were analyzed by single scattering cluster calculations. XPD revealed that using chiral L(+)- or D(-)-TA in the deposition process results in a chiral CuO surface which exhibits mirror-symmetric, non-superimposable patterns with the corresponding chirality imprinted already for film thicknesses below 3nm. Whereas the XPD patterns of the CuO films deposited with the racemic DL-TA and the “achiral” meso-TA are completely symmetric. The selectivity of enantiomeric CuO films was demonstrated by subsequent deposition of CuO from a solution containing DL-TA onto a CuO film grown with only one of the enantiomeric forms. Additionally, films with alternating chirality were produced. [1] J. A. Switzer, H. M. Kothari, P. Poizot, S. Nakanishi, E. W. Bohannan, *Nature*, 2003, 425, 490

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