

Abstract Submitted
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Optical Properties of ZnO/Cu Nanolaminate Materials by Spectroscopic Ellipsometry SETH KING, LORALEE BILKE, JOSEPH KRUEGER, ELIZABETH TENNYSON, BENJAMIN OLESON, University of Wisconsin - La Crosse, UNIVERSITY OF WISCONSIN - LA CROSSE DEPARTMENT OF PHYSICS TEAM — Laminate materials in which ZnO and a metal are layered on the nanometer scale show great promise as transparent conducting oxides (TCO) [1,2]. However, for these materials to be employed in TCO applications a complete understanding of their optical properties must be gained. Specifically, the impact of varying the oxide and/or metal layer thickness, and the number of total laminations layers must be explored. In this study we employ UV – Vis spectroscopy and spectroscopic ellipsometry to investigate variations in the index of refraction, transmittance, and the optical bandgap of ZnO/Cu nanolaminates as a function of Cu interlayer thickness. [1] J.S. Cho, S. Baek, and J.C. Lee; SOLAR ENERGY MATERIALS AND SOLAR CELLS, **95**, 7, 1852-1858 (2011) [2] J.G. Lu, X. Bie, Y.P. Wang, L. Gong, and Z.Z. Ye; JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, **29**, 3, 03A115 (2011)

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