

Abstract Submitted
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Synthesis and Characterization of Au and Pd Decorated ZnO Powders¹ PAIGE LANDRY, University of Tennessee, HANGNING CHEN, Lanzhou University, University of Tennessee, ANDI BARBOUR, MICHAEL FELTY, University of Tennessee, JOHN Z. LARESE, University of Tennessee, Oak Ridge National Lab — We report our synthesis and characterization of ZnO nanopowders decorated with Pd and Au clusters. Ultrapure ZnO powders are readily produced. Pd and Au nanoclusters are deposited from solution and reduced using hydrogen gas. Characterization of these materials using high resolution adsorption isotherms and inelastic neutron scattering have been performed. Particular attention has been paid to the adsorption of hydrogen and deuterium on these pure and decorated materials. Preliminary results indicate that hydrogen preferentially adsorbs to the Pd metal sites. Our results will underscore the significant promise of these combined systems for use in providing basic knowledge and for technological applications.

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