

Abstract Submitted
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Synthesis and characterization of CdS nanoparticles IVAN DOLOG, ROBERT MALLIK, ANTHONY MOZYNSKI, GREG ZARTMAN, Department of Physics, The University of Akron — Previous work by our group has characterized the conduction mechanisms for ultra thin CdS films modified by self assembled monolayers of adamantane based compounds. In the current work we have synthesized CdS nanoparticles using an aqueous precipitation method developed by G. A. Martinez-Castanon. Raman, Inelastic Electron Tunneling and Reflection Absorption Infrared spectra are presented. These data are used to determine the composition of the synthesized substance. The Raman spectrum shows asymmetric broadening of CdS peaks. It is known that Raman scattering is dependent on particle size and information from this broadening is anticipated to a determination of CdS nanoparticle size. Work is also underway to determine the size of the nanoparticles by modeling nanoparticles as single crystalline semiconductor spheres. Future work is planned to study the adsorption of self assembled monolayers on the CdS nanoparticles and their effect on photovoltaic properties.

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