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Surface Termination Effects on Zinc Oxide Quantum Dots.¹ STEVE WHITESELL, JOE SPALENKA, CHRISTOPHER JACK, CARY ALLEN, REUBEN COLLINS, THOMAS FURTAK, Colorado School of Mines — We investigate the effects of surface terminations on the optical properties of 2-6 nm ZnO quantum dots. Nanocrystals were grown by wet chemical synthesis in a shortchain alcohol solvent from zinc acetate and sodium hydroxide. Quenching of particle growth with various capping agents is necessary to maintain and enhance the unique characteristics of the nanocrystals. We reproduce results of previous work and expand on characterization of naked and surface terminated ZnO quantum dots. The nanoparticle properties were investigated by UV absorption spectrophotometry, photoluminescence, infrared spectroscopy, scanning electron microscopy , and atomic force microscopy techniques.

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Thomas Furtak Colorado School of Mines

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