

Abstract Submitted
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Low Temperature Growth of ZnO Nanorods by Chemical Bath

Method MATT BAUMER, PARAMESWAR HARI, DARYL SPENCER, University of Tulsa — ZnO nanorods grown by chemical bath deposition (CBD) methods are of great interest in photonic and electronic device applications because they offer low cost, low temperature techniques compared to conventional vapor deposition and sputtering methods. Our past studies of ZnO nanorods were grown by CBD on indium tin oxide (ITO) coated glass substrates employed heating of an equimolar solution of Zinc (II) nitrate and hexamethylenetetramine solution at 95 C. Morphology of ZnO nanorods exhibited both open and closed hexagonal shape under various deposition conditions at or above 95 C. Currently we are studying the effect substrates on the morphology of the nanorods grown by chemical bath technique. We are using glass coated with tin oxide, aluminum, as well as solid molybdenum as substrates. We will use scanning electron microscopy and atomic force microscopy to map the changes in morphology of nanorods grown on various substrates. We will present quantitative data on changes in cluster size and shape of nanorods as the growth substrate is varied.

Matt Baumer
University of Tulsa

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