

## Morphology of Nanocrystalline ZnO Prepared from Aqueous Solutions

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**Abstract:** Zinc oxide (ZnO) has been used in a variety of applications, because of its electrical, optical, and acoustic characteristics. This material has been also used as electrodes in thin film type or dye sensitized solar cells. The morphology of nanocrystalline ZnO is vital to obtain an ideal surface for use in these applications. In this study, nanostructured ZnO was prepared by sequentially dipping the substrate in several chemical baths. Experiments were conducted with a special rig in which the time, temperature, and extent of agitation of the baths were controlled by a microcomputer. Use of this rig along with control of solution pH and concentration enabled fabrication of ZnO nanorods and nanograins. Comparison of micrographs of the deposits indicated that pH and temperature have a marked influence on morphology.