

# Study of Surface Morphology of ZnO Nanocrystals

M. S. Vaidya, A. A. Shaikh, Dr. S. S. Patil

Department of Humanities & Science  
Guru Gobind Singh Polytechnic, Nasik, Maharashtra, India  
Corresponding Author: manoj.vaidya@ggsf.edu.in

**Abstract:** Zinc oxide of particle size in nanometer range has been paid more attention for their unique properties. They are widely used for solar energy conversion nonlinear optics catalysis, varistors, pigments, gas sensors, cosmetics etc. As wide bandgap semiconductor, ZnO has been widely studied in varistors, transparent conductors transparent UV protection fields chemical sensors etc. There are various methods to synthesis ZnO nanomaterial. Hydrothermal synthesis is one of the most extensively used and co-effective method for the preparation of nonmaterial. ZnO material; are synthesized by reaction of the Zinc acetate and oxalic acid under hydrothermal condition for different time of reaction. The samples are characterized by XRD, EDAX. The average crystal size of the prepared ZnO powder is determined by XRD. The crystallinity of ZnO material samples are confirmed by XRD spectra.

**Keywords:** Zinc Oxide, Band Gap, Nanomaterial

## REFERENCES

- [1]. D. R. Lide (editor), CRC Handbook of Chemistry and Physics, CRC Press, New York, 73rd edition, 1992.
- [2]. D. C. Look, "Recent advances in ZnO materials and devices," Mat. Sci. Eng. B. 80: 383
- [3]. 'Photoluminescence In analysis of surface and interfaces 'Timothy H. Gfroerer, Davison College, Davidson, USA.
- [4]. B.D. cllity, Element of X- ray diffraction (addisenwesley publishing company inc. 1967)
- [5]. Zinc-oxide, <http://www.wikipedia.org/>.
- [6]. Oxide from synthesis to properties and novel devices, journal of material chemistry, 2007
- [7]. Huang M H, Wu Y, Feick H, Tran N, Weber E and Yang P 2001 Adv. Mater. B13 113
- [8]. Hwang C C and Wu T Y 2004 Mater. Sci. Engg. B, Solid State Mater. Adv. Technol. 111 197
- [9]. Johnson J C, Yan H, Schaller R D, Haber L H, Saykally R J and Yang P 2001 J. Phys. Chem. B105 11387
- [10]. Ko T S, Yang S, Su H C H, Chu C P, Lin H F and Liao S C 2006