

Role of solvent on morphology and photoluminescence property of ZnO nano rods synthesized by hydrothermal method

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Zinc oxide nano rods are synthesized by hydrothermal method. X ray diffraction studies confirm that the synthesized ZnO exhibited hexagonal wurtzite structure. The crystallite size is found to be 35 nm and 29 nm for the sample prepared from water and water-ethanol solvent mixture. Transmission electron microscopic (TEM) images confirms that ZnO samples prepared from water solvent are nano rods, whereas samples prepared from ethanol-water mixture are agglomerated. Photoluminescence (PL) emission of the ZnO nano particles prepared from water solvent shows peaks at 414 nm, 442 nm and broad emission at 555 nm. The sample prepared from ethanol-water mixture solvent exhibit broad emission at 500 nm.

References

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