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Study of ZnO nanorods synthesized by microwave method

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Abstract: The present studies report, microwave method synthesis of zinc oxide nanorods with controlled morphologies and high-purity. Nanoscale features with good structural integrity were observed through scanning electron microscopy images. The average length and diameter were determined to be 180 nm and 36 nm, respectively. The X-ray diffraction analysis shows the wurtzite hexagonal crystal structure. The sharp and intense peaks indicated high crystallinity of nanorods. The optical bandgap of 3.15 eV was obtained from ultraviolet-visible spectroscopy analysis. Protype of piezoelectric devices were made and the characteristics were investigated. The reliability of the devices were observed till now with 50 cycles.