

## **Preparations and Photovoltaic properties of dye-sensitized solar cell based on ZnO nanowire electrode**

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The preferred (002) orientation Zinc oxide (ZnO) nanowire have been deposited on ITO-coated glass substrates by chemical bath deposition technology for use in dye-sensitized solar cells (DSSC). The effects of immersion concentrations (5mM, 10mM, and 20mM) and immersion time (1 h, 2 h, 3h, and 6h) on the microstructure, morphology and optical properties of ZnO nanowire were studied. The ZnO nanowire were characterized by X-ray diffraction (XRD), scanning electron microscopic (SEM) and UV-visible optical transmittance spectra analysis. The photoelectric performance of DSSC was studied by I-V curve and the incident photon-to-current conversion efficiency (IPCE), respectively. From the results, the higher efficient of DSSC could be obtained under the concentration of 20 mM.