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Microwave-assistant preparation of ZnO nanostructures optical and morphological properties for photocatalytic activity

This research, ZnO nanostructures samples were successfully prepared by 0, 300 and 600 watt microwave-assistant method for 10 min. Characterization properties of ZnO samples were measured by powder using X-ray diffraction , Field emission scanning electron microscope , UV-visible diffuse reflectance spectra and dispersive X-ray spectroscopy . The analysis results found that products were phase and crystallinity structures hexagonal of ZnO growth degree of (101) peaks nanoplate morphology with thickness 13.46 15.17 and 16.23 nm respectively. Elemental composition was showed spectrum have prominent Zn and O confirmed. Elucidate the optical properties of ZnO samples with the UV-Vis absorption spectra can be determined the band gap energy (Eg). Photocatalytic efficiencies has evaluation by degradative solutions of methylene blue (MB) under irradiation UV lamp and visible light lamp. Sample was observed first -order kinetic reation effect of the highest photocatalytic activity degradation methylene blue.

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