

Electrocatalytic properties of palladium modified zinc oxide nanorods (Pd-ZnO NRs): Hydrothermal preparation and characterization

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Among various semiconductor materials, zinc oxide (ZnO) presents itself as one of the most important semiconductor due to its versatile potential properties, when modified with palladium has attracted much attention for their promising applications. Nano rods (NRs) like structure were prepared through hydrothermal method. As synthesized samples morphological properties were characterized by X-ray diffraction (XRD), diffuse reflectance ultra-violet spectroscopy (DRS-UV), photo luminescence (PL), field emission scanning electron microscope (FE-SEM), high resolution transmission electron microscope (HR-TEM) in order to confirm the phase purity and surface morphology of the sample. Palladium modified ZnO NRs (Pd-ZnO) samples possess a stable morphological structure composed of rod like structure. The modified glassy carbon (GC) electrode with Pd-ZnO NRs shows better catalytic activity for the electrochemical oxidation of uric acid (UA).

Keywords: Zinc oxide nanorods, palladium, electrocatalytic properties, glassy carbon.