SYNTHESIS AND CHARACTERIZATIONS OF ZINC OXIDE BIONANOCOMPOUNDS APPLIED TOWARDS METHYLENE BLUE DEGRADATION

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This work addresses the study of Zinc Oxide (ZnO) nanoparticles prepared via green synthesis through the use of polyphenols [1]. The materials used are Zinc Nitrate, and polyphenols, extracted from Camelia Sinensis [2]. The structure of these particles was characterized using scanning electron microscopy (SEM), X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FTIR). Catalytic properties were studied via methylene blue degradation. The morphology of the surface showed that the samples are semi-heterogeneous, with an increase in porosity depending on the amount of polyphenols used. The crystalline phase of the deposited samples was of hexagonal-type. The amount of polyphenols used made a notable difference in the particle size, the average being 15 ± 2 nm. The degradation tests presented better than commercial degradation curves. Influence of the polyphenols on structural and catalytic properties is described and discussed.

Keywords: Zinc Oxide, methylene blue degradation, green compounds

References:


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