PHOTOCATALYTIC DEGRADATION OF ORANGE G DYE UNDER UV AND SOLAR IRRADIATION USING TiO_2 AND ZnO

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ABSTRACT

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Dye wastewater from industries are accounted for a major river pollutant particularly the material enterprises. This industry utilize tremendous measure of water and roughly two percent of dyes that are released straightforwardly in industrial effluent is lost during dyeing process. The photocatalytic degradation of orange G dye has been examined utilizing integrated nanocrystalline Titanium Dioxide and Zinc Oxide were chosen in removing dye contaminants by act as photocatalyst. Solar irradiation was a generally utilized of energy source that consolidate the sun powered and substance to acquire the chemical response. This study was conducted to determine the effectiveness of photocatalyst TiO_2 and ZnO under two different condition which is by solar and UV irradiation with different series of pH. Optimum concentration which is 5 ppm was chosen in this study with a wavelength 474 nm. The correlation efficiency for the standard solution prepared is nearly value one which is 0.9994. The absorbance for the degradation of Orange G dye were determined by using instrument UV- Vis Spectrophotometer. From the analysis, the photocatalytic degradation with TiO_2 as the catalyst proven efficient in degradation of the dye at low pH which is 3.5 under solar irradiation.