**Investigation of Photocatalytic Degradation of Azur-A Dye in Aqueous Solution by Bi2MoO6 as Catalyst Using Visible Irradiations**

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**Abstract**

Dyes and other organic pollutants are hugely used in various industries viz. textiles, papers, leather, foods and other cosmetics. These hazardous organic pollutants are very harmful for aquatic lives and environment due to their good stability. Among all the techniques for organic pollutants removal, advanced oxidation process like heterogeneous photocatalysis as an environmental application is a relatively novel subject with tremendous potential. The photocatalytic degradation of Azur-Adyehas been investigated in aqueous solutions containing Bi2MoO6 as photocatalysts. The kinetic studies for the photocatalytic degradation of Azur –A were carried out and the total degradation of dye was tested using the chemical oxygen demand (COD), UV analysis and chromatographic technique. We have also studied various effects such as pH of the reaction mixture, initial dye concentration, amount of catalyst and effect of temperature on the rate of degradation of dye. The degradation rate of Azur –A dye is 90 % after visible light irradiation for 60 min. under the optimum condition. The maximum photodegradation rate of Azur-Awas achieved at a pH 9. Final product of this heterogeneous photocatalysis have been found to be CO2 and H2O, hence the processes is Green.

**Keywords:** Heterogeneous photocatalysis, Azur-A, Bi2MoO6, Waster water, Green Chemistry.

**Thrust Area- Catalysis**

**Category-Research**