

**A MAJOR PROJECT REPORT**

**ON**

**“Kinetic Study of Degradation of Methylene Blue dye by Electrooxidation process”**

**Submitted in partial fulfillment of the requirement of the degree of**

**Bachelor of Technology**

**in**

**Chemical Engineering**

**Submitted by**

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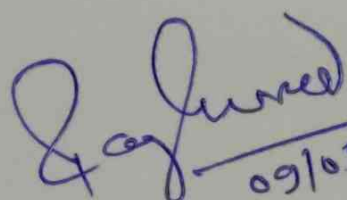
**Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)**

**(2023-24)**

## CERTIFICATE

This is to certify that the thesis entitled "**Kinetic Study of Degradation of Methylene Blue by Electrooxidation Process**" Submitted by student's name "**Aniket Sakharwade, Priti Kumari, Ayush Sagar, Arjun Banchhor, Yashovardhan Singh**" to GURU GHASIDAS VISHWAVIDYALAYA in partial fulfillment of the requirement for award of the Degree of Bachelor Of Technology in Chemical Engineering is a Bonafide Record of the work carried out by them under supervision and guidance.

Date: 9/5/2024

  
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## Abstract

In this report, we had worked on Degradation of Methylene blue Dye by Electrooxidation process, this process is quite new to existence. In this process we had use Graphite as Cathode and Anode.

The degradation of methylene blue dye by electrooxidation process using graphite electrodes was investigated in this study. Methylene blue is a widely used dye in various industrial applications, and its removal from wastewater is crucial to mitigate environmental pollution. The electrooxidation process offers a promising approach for the degradation of organic pollutants, as it utilizes the electrochemical properties of electrodes to generate reactive species capable of oxidizing the dye molecules.

The electrooxidation process was found to follow pseudo-first-order kinetics, and the degradation rate constant was determined. The reaction mechanism involved the generation of reactive species, such as hydroxyl radicals, at the anode surface, which subsequently reacted with methylene blue molecules, leading to their degradation.

Our Working parameter are , Change in Voltage, Change in Concentration of Salt (Electrolyte), Effect of Stirring Speed etc. and found out the results with different completion time and different graph.

Overall, in this report there is information of Kinetics of degradation of Methylene Blue dye with different parameters and how we can optimize its conditions.