



## Graphene Oxide-Manganese Oxide Composite (GO-MnO<sub>2</sub>) As a Photocatalyst: A Comparative Study

Meghavi Gupta<sup>1\*</sup>, Neha Kapoor<sup>1</sup>, Avinash Kumar Rai<sup>1</sup>,  
Rakshit Ameta<sup>2</sup> and Suresh C. Ameta<sup>1</sup>

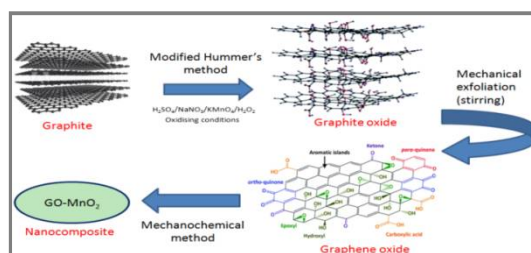
1. Department of Chemistry, PAHER University, Udaipur -313003, Rajasthan, **INDIA**  
2. Department of Chemistry, J. R. N. Rajasthan Vidyapeeth (Deemed to be University) Udaipur-313001,  
Rajasthan, **INDIA**  
Email: [maggigupta03@gmail.com](mailto:maggigupta03@gmail.com)

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### ABSTRACT

A nanocomposite of graphene oxide (GO) and manganese dioxide (MnO<sub>2</sub>) was prepared by mechanochemical method. Graphene oxide was synthesized by modified Hummer's method. As-formed nanocomposite was tested for its photoactivity by degrading trypan blue dye. It was found that the rate of photodegradation of trypan blue was faster with composite as compared to bare MnO<sub>2</sub> under optimum conditions. The optimum conditions for trypan blue degradation are: pH=6.5; trypan blue concentration=1.5×10<sup>-5</sup> M; amount of composite=0.08 g; light intensity=50 mW cm<sup>-2</sup>. The composite was also tested for its reusability.

### Graphical Abstract



**Keywords:** Photocatalyst, Graphene Oxide-Manganese oxide, Wastewater, AOPs.