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## Visible Light Induced Synergistic Degradation of Rhodamine-B, Methylene Blue And Malachite Green By $\text{Fe}_2(\text{MoO}_4)_3$ And $\text{MoO}_3$

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### ABSTRACT

*$\text{Fe}_2(\text{MoO}_4)_3$  with excess  $\text{MoO}_3$  has been prepared by combustion method using Ferric nitrate,  $\text{MoO}_3$  and glycine. The calcined powder showed a band gap of 2.6 eV as calculated from UVDRS. SEM studies revealed particle size in the  $\mu\text{m}$  region. The sample as prepared showed excellent photo catalytic activity for the degradation of Rhodamine-B, Methylene blue and Malachite green in presence of  $\text{H}_2\text{O}_2$  under visible light irradiation. Photo catalytic studies on 100 ml aqueous solution containing 5ppm indicator with 100 mg of dispersed catalyst indicated degradation of 99.8% of Rhodamine-B, 98% of Methylene blue and 99.6% of Malachite green in 40 min, 30 min and 15 min respectively.*

**Keywords:**  $\text{Fe}_2(\text{MoO}_4)_3$ , Rhodamine-B, Methylene Blue, Malachite green, photo catalytic degradation, Combustion synthesis.

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