



## The effect of coupled titanium dioxide and cobalt oxide on photo catalytic degradation of malachite green

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**Abstract:** Photocatalytic degradation of malachite green using coupled  $\text{TiO}_2\text{-Co}_2\text{O}_3$ , was studied, by the irradiation of suspended solution consists of 1ppm of malachite green with 0.12 g /100 ml of coupled  $\text{TiO}_2\text{-Co}_2\text{O}_3$  metal oxide semiconductor. This process used external source 125Watts mercury lamp. Al photo reaction inside a Pyrex photoreaction cell of 100 ml, with flow rate of air 10ml/ min at room temperature 298 K. Several experiments were carried out in various conditions to create optimum Photocatalytic degradation of malachite green. These experiments include effect of mass of coupled  $\text{TiO}_2\text{-Co}_2\text{O}_3$ , concentration of malachite green, and the effect of light intensity. The products was studied by using UV-Vis spectrophotometer.

**Keywords:** Photocatalytic degradation, malachite green. coupled  $\text{TiO}_2\text{-Co}_2\text{O}_3$ , decolonization.

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