



## Photocatalytic Degradation of Indigo Carmine over FeWO<sub>4</sub>-CuS Powder

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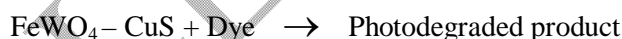
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Accepted on 14<sup>th</sup> January, 2023

### ABSTRACT

The photocatalytic degradation of Indigo carmine has been studied in presence of visible light over the FeWO<sub>4</sub>-CuS powder as a photocatalyst. The photocatalytic activity of FeWO<sub>4</sub>-CuS composite was observed for photodegradation of Indigo carmine dye under visible light exposure. The as-prepared composite was characterized by techniques such as EDX, FESEM and XRD. The effect of different parameters was evaluated on rate of degradation and optimum conditions were obtained as pH = 10.0, concentration of Indigo carmine =  $1.40 \times 10^{-4}$  M, amount of composite = 0.005 g and light intensity = 60.0 mWcm<sup>-2</sup>. It was observed that this composite has the highest catalytic activity in basic medium. A tentative mechanism for the reaction has been proposed involving hydroxyl radical as an active oxidizing species.

### Graphical Abstract:



**Keywords:** Indigo carmine, FeWO<sub>4</sub>-CuS powder, Advanced oxidation process, Photocatalytic degradation.