

عنوان مقاله:

Photocatalytic removal of Malachite green dye from aqueous solutions by nano-composites containing titanium dioxide: A systematic review

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خلاصه مقاله:

Background: Malachite green (MG) is widely used as a fungicide, Bactericide parasiticide in the aquaculture industry, as a food additive, medical disinfectant, and also, as a dye for materials such as silk, leather, paper, etc. In this study, the photocatalytic removal of MG from aqueous solutions using TiO₂-containing nanocomposites was reviewed. Methods: In this study, four databases (PubMed, Web of Science, ScienceDirect, and Scopus) were systematically searched to collect studies on the decomposition of MG using nanocomposites containing TiO₂ under UV light radiation. Results: In total, 10 related and eligible studies were selected. Based on the results, TiO₂ was doped with iron, Sn, Ag, Si, and Ni. The highest percentage of photocatalytic decomposition for MG was observed in Sn > Ni > Ag > Fe > Si. The removal efficiency of MG in the studied papers was between 75%-100%. Conclusion: Recombinant nanocomposites had a higher dye removal percentage than uncombined ones because they play an important role in .the photocatalytic process of dye, by producing free radicals

کلمات کلیدی:

Photocatalytic, Malachite green, Nanocomposite, TiO₂, Titanium Dioxide

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