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Decolorization with magnetic ferrite magnetic nanoparticles

Masoumeh Nabitabar[a], Hazratuddin Sadiqi[b], Abdulwali Golmohammad [c], Maryam Shaterian *

*[a, b, *] Department of Chemistry, Faculty of Science, Zanjan University, Zanjan, Iran*

[, a] E-mail: shaterian@znu.ac.ir , nabitabarhasti@yahoo.com*

MgFe2O4 nanoparticles were created using the sol-gel process to degrade organic contaminants in water, soil, and air sources, such as industrial paints. X-ray diffraction (XRD) analysis, scanning electron microscopy (SEM), and Fourier transform infrared (FTIR) spectroscopy were used to explore the structure and characteristics of nanoceramics. The Scherer equation of 11nm was used to determine particle size. The decolorization of this nanocomposite in an aqueous media under visible light and UV light was researched to learn more. Then, Vis-UV spectroscopy was used to analyze the outcome. The findings of this degradation demonstrated that ceramic nanocomposite has significant photocatalytic activity in both visible light and UV light. The findings of this study demonstrated that this technique may be applied on a bigger scale and has good effectiveness in decolorizing crystal violet contaminants from the environment by optimizing the effective operational variables.

Keywords: Decolorization, Magnetic Nanoparticles, Congo Red, Basic Red 51, Visible and Ultraviolet light

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