

عنوان مقاله:

Optimizing the Factors of Color Concentration, pH and the Amount of Nanoparticles in Removal of R198 Reactive Dye under UV Rays by Zinc Oxide Nanoparticles Extracted from Leaching Residue of Zinc Melting Factory

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خلاصه مقاله:

In this study, zinc oxide nanoparticles were obtained from purified solution from the zinc melting residue factory in Bafgh. The obtained nanoparticles by various devices were studied and analyzed. The formation, purity and optical properties of zinc oxide nanoparticles were investigated by the infrared spectrometer (FTIR) test. Ultimately, these nanostructures were used to investigate their photocatalytic properties in the removal of reactive color R198 under UV rays, which has been widely used color in the textile industry and is harmful for the environment. In the bleaching process of reactive color R198, three effective parameters which include the color concentration, pH and amount of nanoparticle were optimized. The results of X-Ray Diffraction patterns (XRD) represent the crystallinity and hexagonal structure of the samples. According to the Transmitted Electron Microscope (TEM) images, the sample have clear spherical shapes and distinct hexagonal dimensions in the range of 40-120nm. Under optimal conditions with color concentration of 30 ml, pH = 7 and the amount of nanoparticle 0.12gm at 120 minutes the bleaching process under ultra-violet rays about 99% of the color was degraded or destroyed.

کلمات کلیدی:

Zinc Oxide Nanoparticles, Photocatalytic Properties, Reactive Color, UV Rays

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