

عنوان مقاله:

Oxidation of Crystal Violet in Aqueous Solutions Using the Fenton Process

محل انتشار:

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خلاصه مقاله:

Advanced oxidation processes (AOPs) are always accompanied by producing highly-reactive hydroxyl radicals (OH) with great potential for the decolorization and mineralization of organic compounds. Today, dyestuff and pigments are considered a notorious concern for the pollution of aqueous environments. Proposing new methods to dispose of this problem is therefore essential. The present study was conducted to investigate the use of the Fenton process for removing crystal violet (CV) from aqueous solutions. The effectiveness of this method was influenced by several factors, including pH, initial concentration of the dye, different interfering ions and reaction duration. The residual concentration of the dye was determined using spectrophotometry at a maximum wavelength of about 586 nm. The data were analyzed and interpreted in Excel. The optimal pH was obtained as 3, and the optimal initial concentration and Fe/H₂O₂ ratio as 50 mg/L and 1:10 respectively. Given the effect of the contact duration, the minimum Fenton reaction duration was considered 30 minutes. In next step the effect of interference in the progression of the Fenton process were investigated for KCl, NaCl and NaHCO₃. Moreover, the efficiency of CV decolorization was 96% under optimal conditions. Fenton can be therefore considered an appropriate process for removing CV from colored wastewater in textile industries.

کلمات کلیدی:

Colored Wastewater, Fenton Process, CV

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