

عنوان مقاله:

Removal of Acid green 3 dye from waste water using stabilized Fe₀ nano-particles by the cross-linked pectin with succinic acid: Thermodynamic and kinetic studies

محل انتشار:

کنفرانس بین المللی علوم، مهندسی و فناوری های محیط زیست (سال: 1394)

تعداد صفحات اصل مقاله: 12

نویسنده:

Roohan Rakhshae - Department of Chemistry, Faculty of science, University of Guilan, P.O.Box: ۴۱۳۳۵-۱۹۱۴۱, Rasht, Iran

خلاصه مقاله:

Fe₀ nano-particles (FNPs) were stabilized by the cross-linked pectin with succinic acid (CPS) to remove Acid green 3 (AG 3) as an anionic and azo dye from aqueous solutions. Transmission electron microscopy (TEM) showed that the diameter of FNPs-CPS was not less than 5 nm and about 93% of them were between 10–46 nm. About 18% of FNPs-CPS was about 46 nm in diameter. X-ray diffraction (XRD) patterns did not show a marked change in the crystal structure of FNPs, whereas the intensity of the peaks corresponding to the surface functional groups is reduced with using CPS. The removal percent of AG 3 was determined 88.3% by FNPs-CPS for the dye initial concentration of 200 ppm, at the determined conditions. The comparison between the results of potentiometric and pH study with the removal efficiency confirmed that the –COOH of the cross-linked pectin and its adsorption ability had the more effective rule than the FNPs average size and its reduction ability to remove AG 3.

کلمات کلیدی:

Acid green 3, Succinic acid, Stabilizer agents, Fe₀ nano-particles

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