

عنوان مقاله:

Decolorization of reactive blue dye 19 from Aqueous solution by a strong oxidation agent

محل انتشار:

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خلاصه مقاله:

The use of conventional textile wastewater treatment processes becomes drastically challenged to Environmental engineers with increasing more and more restrictive effluent quality by water authorities. Oxidation processes hold great promise to provide alternative for better treatment and protection of environment. It was found that catalytic activity of this catalyst was significantly enhanced under acidic conditions. In this study application of Ce(IV) for decolorization of reactive blue 19 (RB19) was investigated. Ce(IV) could absorb the reactive blue dye 19 from aqueous solution. The concentrations of dyes change exponentially with time. Batch experiments were performed to investigate the effect of operating parameters, such as pH ($pH_{optimum} < 1$), type of acid (sulfuric acid, nitric acid, chloridric acid, phosphoric acid), dose of cerium sulfate (optimum dose: 1.2 g/L), initial dye concentration (10-1000 mg/L), contact time (1-300 sec). Isotherm studies were carried out and the data were analyzed by Langmuir, Freundlich and Temkin equations. Three simplified kinetic models were tested to investigate the adsorption mechanism. The Langmuir equation was shown to fit degradation kinetics in most cases.

کلمات کلیدی:

,Reactive blue dye; Aqueous solution; Cerium sulfate, Oxidation agent

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