

عنوان مقاله:

Destruction of Acid Red 14 Azo Dye using heterogeneous photo-fenton process UV/Clay/H₂O₂

محل انتشار:

اولین کنفرانس بین المللی تصفیه فاضلاب و بازیافت آب، فناوری ها و یافته های نو (سال: 1388)

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خلاصه مقاله:

Wastewater from textile processing plants can be highly coloured and difficult to decolourise. The objective of this work was the use of Fe-containing clay as a heterogeneous photo-Fenton catalyst which possesses high catalytic activity and minimal Fe leaching for reduction of overall organic content of model solution containing C.I. Acid Red 14 (AR14) in a UV/Catalyst/H₂O₂ system. All experiments were performed on a cylindrical batch photo-reactor equipped with a UV lamp (9 W 254 nm) inserted in the centre. Important operational parameters such as initial concentration of H₂O₂, amount of catalyst and initial pH of the solution were assessed. It was found that, more than 52% degradation of the dye with initial concentration of 8×10⁻⁵ mol L⁻¹ was achieved in 120 min at pH 6.6, 0.02 mol L⁻¹ H₂O₂ and 0.25 g L⁻¹ of the clay. Leaching tests indicate that the activity of the heterogeneous catalyst is not due to leached iron ions, although a small amount of iron ions was found in the aqueous solution.

کلمات کلیدی:

Azo Dye, Dye Degradation, Fe-Containing Clay, Heterogeneous Photo-Fenton, Wastewater Treatment

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