Removal of textile dye Lanaset Red G from waters by electrochemical degradation and spectrophotometric determination

Yavuz Sürmea,*, Raşit Fikret Yılmazb, Kadriye Kayakırılmazc

aFaculty of Arts and Sciences, Department of Chemistry, Nigde University, Nigde, Turkey
Email: ysurme@nigde.edu.tr
bFaculty of Arts and Sciences, Department of Chemistry, Sakarya University, Sakarya, Turkey
cDepartment of Nutrition and Dietetics, School of Health, Hasan Kalyoncu University, Gaziantep, Turkey

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ABSTRACT

The removal of Lanaset Red G, a kind of azo dye, has been studied with graphite electrodes in aqueous solution by electrochemical method. Graphite electrodes were used as anode and cathode in the decolourization process. Concentration of dye molecules in aqueous solution was determined by the ultraviolet-visible spectrophotometric technique. The operational parameters including initial pH, effect on the conductivity and time of electrolysis were optimized. The surface morphology of electrodes was also investigated and found that the surface of anode was affected by electrolysis. The results indicated that for a solution of 50 mg L⁻¹ dye, almost 94% of dye was removed under optimum conditions. The optimized conditions were successfully applied to remove dye molecules present in real textile effluent and lake waters.

Keywords: Azo dyes; Electrochemical degradation; Graphite electrode; UV–vis spectrophotometry

*Corresponding author.