



“Gheorghe Asachi” Technical University of Iasi, Romania



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## A COMPARATIVE STUDY ON REMOVAL OF FOUR TYPES OF ACID AZO DYES USING ELECTROCOAGULATION PROCESS

Mahsa Taheri<sup>1</sup>, Mohammad Reza Alavi Moghaddam<sup>1\*</sup>, Mokhtar Arami<sup>2</sup>

<sup>1</sup>Amirkabir University of Technology (AUT), Civil and Environmental Engineering Department, Hafez Street, 15875-4413, Tehran, Iran

<sup>2</sup>Amirkabir University of Technology (AUT), Textile Engineering Department, Hafez Street, 15875-4413, Tehran, Iran

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### Abstract

The paper compares the electrocoagulation performance during the removal of Acid Brown 14, Acid Yellow 17, Acid Blue 113 and Acid Black 172 dyes from aqueous solutions. For this purpose, pH changes and effectiveness of main parameters including initial dye concentrations and current densities for the selected dyes were examined. In addition, effluent turbidity, energy consumption and amounts of released aluminum were also investigated. The present work shows that Acid Yellow 17 removal efficiencies were less than 30% in contrast with more than 90% for Acid Brown 14, Acid Blue 113 and Acid Black 172 at the end of experiments. The dye removal efficiencies, within first time interval (5 min) and at the best elimination conditions (initial dye concentration=100 mg/L and current density=250 A/m<sup>2</sup>) were measured 12.47%, 85.67%, 95.07% and 99.52% for Acid Yellow 17, Acid Black 172, Acid Brown 14 and Acid Blue 113, respectively.

*Key words:* acid azo dyes, decolorization, dye removal efficiency, electrocoagulation

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\* Author to whom all correspondence should be addressed: E-mail: [alavim@yahoo.com](mailto:alavim@yahoo.com), [alavi@aut.ac.ir](mailto:alavi@aut.ac.ir); Phone: 0098-216454-3008; Fax: 0098-2166-414213