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Treatment of Textile Wastewater by Physical-Chemical and Advanced Oxidation Processes

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Abstract

This study aims to evaluate the performance of three techniques for the treatment of textile effluents, specifically the coagulation / sedimentation, ozonation and Fenton applied alone, and the application of oxidative processes after the physical and chemical treatment. We checked the effects of the treatments used in the removal of concentrations of the parameters color, BOD, settleable solids, total suspended solids, total dissolved solids and turbidity. The results show that all forms of treatment achieved the standards for release in the receptor, whereas, maximum reductions were achieved after treatment with coagulation / sedimentation followed by ozonation, they are: 94.39% for settleable solids, 93.5% for total dissolved solids, settleable solids to 97.5%, 78.1% for COD, 67.5% for BOD, 98.3% to 96.6% for turbidity and apparent color. Based on these results, the use of advanced oxidation processes for treatment of textile effluents is justified by the potential removal of the parameters studied as a function of time, providing economic and environmental gains for the industry.

Keywords: *textile wastewater, ozonation, fenton, coagulation.*