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PHOTODEGRADATION PROCESSES FOR ADVANCED TREATMENT OF INDUSTRIAL WASTEWATERS

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Abstract

The textile industry uses high quantities of water which in many cases are disposed to the environment with inadequate treatment. In this work the effluents from the polyamide textile industry containing Bemacid Gelb, Bemacid Rot and Bemacid Blau were treated by heterogeneous photodegradation. Treatment performances have been evaluated in terms of conductivity, turbidity, total dissolved solids (TSD), chemical oxygen demand (COD), total organic carbon (TOC), biochemical oxygen demand (BOD₅), fixed residue, and colour removal. Wastewaters resulting after the photocatalytic treatment presents removal efficiency 74.6, 84.8 and 86.6% for turbidity, fixed residue and color, respectively. Results clearly indicate that photocatalytic oxidation process was more efficient in dyes bleaching for treated wastewater samples.

Key words: heterogeneous photocatalysis, textile wastewater, titanium dioxide

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