

II INTERNATIONAL SYMPOSIUM ON SCIENCE AND BIOTECHNOLOGY ENTREPRENEURSHIP AND INNOVATION

REMOVAL OF ORGANIC MATTER FROM WATER DISCARDED BY PAPER AND CELLULOSE MILLS AFTER UV/H₂O₂ TREATMENT

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Abstract

Paper and cellulose mills effluents are composed by several combinations of chemical reagents used in productive stages and of substances originating from raw material, used to produce paper and cellulose pulp. Considering the volume of effluents generated by such industries and the current crisis of water resources, it is blatant the need of an efficient treatment for the discarded water. The advanced oxidative processes constitute an attractive option for treating several effluents. They are capable of promoting degradation and even mineralization of refractory pollutant particles. The current paper looks forward to assessing the performance of the UV/H₂O₂ process in removing organic matter present in the effluent of a paper mill. The research was carried out in a photochemical reactor with active capacity of 1300 mL. As source of UV radiation, it was used a medium pressure mercury lamp of 125 W. During 120 minutes of UV irradiation, six H₂O₂ concentrations were testes, varying between 15 and 200 mg.L⁻¹. The results revealed the effectiveness of the process when removing 84% of the CDO and 91% of the BOD₅. The performance of the UV/H₂O₂ process was influenced by the availability of H₂O₂ and the time of UV irradiation.

Keywords - UV radiation, industrial effluent, organic matter.

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