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Solar energy integration in the treatment of industrial effluent by coagulation–electroflotation

I. Ksentini, M.L. Aouadi, H. Ben Bacha, L. Ben Mansour*

Laboratoire Eau – Environnement – Énergie, Faculté des Sciences de Sfax, B.P.802, 3018 Sfax, Tunisia
Tel. +216 (98) 657 061; Fax +216 (74) 451 346; email: lassaadbenmansour@yahoo.fr

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ABSTRACT

This work presents the results of the solar energy integration in cardboard industry wastewater treatment generated in the process of machine washing. The treatment process used was coagulation–electroflotation. The effluent COD reduction rate was selected as the follow up parameter. A system of solar collector was also dimensioned in order to supply the insoluble electrodes of the electroflotation unit. In batch mode treatment, current density, pH and coagulant concentration was optimized while in continuous mode, residence time was optimized. A physicochemical characterization of the effluent was done before and after the treatment in order to improve the efficiency of the adopted process. The methodology of experimental research was selected as the experimental research tool.

Keywords: Optimization; Electroflotation; Solar collector; Experimental planification

* Corresponding author.