

## Accepted Manuscript

Effect of Volumetric Rate of Photon Absorption on the kinetics of micropollutant removal by solar photo-Fenton with  $\text{Fe}^{3+}$ -EDDS at neutral pH

P. Soriano-Molina, J.L. García Sánchez, S. Malato, L.A. Pérez-Estrada, J.A. Sánchez Pérez

PII: S1385-8947(17)31437-7  
DOI: <http://dx.doi.org/10.1016/j.cej.2017.08.096>  
Reference: CEJ 17547

To appear in: *Chemical Engineering Journal*

Received Date: 27 May 2017  
Revised Date: 17 August 2017  
Accepted Date: 18 August 2017



Please cite this article as: P. Soriano-Molina, J.L. García Sánchez, S. Malato, L.A. Pérez-Estrada, J.A. Sánchez Pérez, Effect of Volumetric Rate of Photon Absorption on the kinetics of micropollutant removal by solar photo-Fenton with  $\text{Fe}^{3+}$ -EDDS at neutral pH, *Chemical Engineering Journal* (2017), doi: <http://dx.doi.org/10.1016/j.cej.2017.08.096>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Effect of Volumetric Rate of Photon Absorption on the kinetics of micropollutant removal by solar photo-Fenton with Fe<sup>3+</sup>-EDDS at neutral pH

P. Soriano-Molina <sup>a,b</sup>, J.L. García Sánchez <sup>a,b</sup>, S. Malato <sup>a,c</sup>, L. A. Pérez-Estrada <sup>c</sup>, J. A. Sánchez Pérez <sup>a,b,\*</sup>

<sup>a</sup> Solar Energy Research Centre (CIESOL), Ctra de Sacramento s/n, ES04120, Almería, Spain.

<sup>b</sup> Chemical Engineering Department, University of Almería, Ctra de Sacramento s/n, ES04120, Almería, Spain.

<sup>c</sup> Plataforma Solar de Almería, CIEMAT, Carretera Senés Km. 4, 04200, Tabernas, Spain.

\*corresponding author:

J. A. Sánchez Pérez, Department of Chemical Engineering, University of Almería, 04120, Almería, Spain; Tel.: +34 950015314.

E-mail address: jsanchez@ual.es

## Abstract

To run the photo-Fenton process at circumneutral pH as a tertiary wastewater treatment, the use of chelating agents, such as ethylenediamine disuccinic acid (EDDS), has been proposed. For the design and optimization of photocatalytic reactors, the concept of volumetric rate of photon absorption (VRPA) is very useful, since it combines the effects of light absorption and reactor geometry. This research is focused on the study of the effect of VRPA of the Fe<sup>3+</sup>-EDDS complex on the kinetics of micropollutant removal by solar photo-Fenton at neutral pH. To this

Download English Version:

<https://daneshyari.com/en/article/4762775>

Download Persian Version:

<https://daneshyari.com/article/4762775>

[Daneshyari.com](https://daneshyari.com)