

Faculté/Institut : Sciences Exactes

Département : Chimie

1- Identification du laboratoire/Unité de recherche			
LABORATOIRE DES SCIENCES ET TECHNOLOGIES DE L'ENVIRONNEMENT			اسم المخبر
Intitulé du Laboratoire	Sciences et Technologies de l'Environnement		
Acronyme du labo	LSTE		
Adresse électronique	Lste-umc@yahoo.fr		
Site web ou URL	www.lste-constantine1.net		
Année d'Agrément :	2000	Tel :031811110	Fax :031811110

2- Directeur du laboratoire/Unité de recherche			
Nom & Prénom	SEHILI Tahar	Grade : Professeur	
Adresse Electronique	tsehili@yahoo.fr		
Nombre Equipes :	04	Nbre Chercheurs : 32	Nbre Personnel soutien :00

3- Présentation du laboratoire
<p>Thèmes mis en œuvres :</p> <p>Dès le départ le laboratoire des Sciences et Technologies de l'Environnement à orienter sa recherche sur la dépollution des eaux par la photochimie associée aux supports chromophores. Au fur et à mesure que le laboratoire avance dans sa recherche, le choix des polluants organiques et les supports (semi-conducteurs) sont devenus une priorité pour son développement. Le choix du support doit répondre à deux impératifs :</p> <p><i>i-</i> pas cher et disponible</p> <p><i>ii-</i> chromophore absorbant la lumière solaire.</p> <ul style="list-style-type: none">- Traitement des eaux par les procédés d'oxydation avancée.- Photodégradation des polluants organiques par photocatalyse- Transformation des produits pharmaceutiques rejetés dans les eaux par les complexes de fer et de la lumière UV- Photodégradation des liquides ioniques par les procédés photochimiques.
Mots-Clés : Lumière, UV, Semiconducteurs, Complexes de fer, polluants organiques, solutions aqueuses.

4- Chefs d'équipes		
.Titre de l'Equipe1	Photocatalyse, Photochimie et Environnement	
Nom - Chef d'équipe ¹	SEHILI Tahar	Grade : Professeur
.Titre de l'Equipe2	Procédés d'oxydation avancée pour le traitement de l'eau	

Nom - Chef d'équipe ²	DJEBBAR Kamel	Grade : Professeur
.Titre de l'Equipe ³	Traitement des eaux par sonochimie et sonocatalyse	
Nom - Chef d'équipe ³	ZOUAGHI Razika	Grade : Professeur
.Titre de l'Equipe ⁴	Traitement des eaux par photoinduction	
Nom - Chef d'équipe ⁴	DEBBACHE Nadra	Grade : Professeur

5- Liste des publications (2011-2016):

Benhamouda K, Sehili T and Djebbar K.

Adsorption of Rhodamine B and methylene blue in solution using an Algerian iron oxide. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*. September – October **2016** RJPBCS 7(5) Page No. 2486

*H. Mechakra^A, T. Sehili^{*A}, M. A. Kribeche^A, A. A. Ayachi^B, S. Rossignol^C, C. George^C* Use of natural iron oxide as heterogeneous catalyst in photo-Fenton-like oxidation of chlorophenylurea herbicide in aqueous solution: reaction monitoring and degradation pathways. *J. Photochem. PhotobiolA: Chemistry* 317 (**2016**) 140-150. Desalination and Water Treatment.

L. Bousnoubra^{a}, K. Djebbar^{a*}, A. Abdessamed^{ab*} & T. Sehili* Decolorization of methyl green and bromocresol purple in mono and binary systems by photochemical processes: direct UV photolysis, Acetone/UV and H₂O₂/UV. A comparative study DOI:10.1080/19443994.2016.1174741 Desalination and Water Treatment (**2016**)

S. Belattar, N. Debbache, N. Seraghni and T. Sehili

Transformation of Phenolic Compounds by Fe (III) in the Aqueous Solution in Dark and under Irradiation. Accepted Journal of chemical reactor Engineering (**2015**). Doi: 10.1515/ijcre-2015-0053.

Y. Mameri, N. Debbache, M. M. Benachrine, N. Seraghni, T. Sehili

Heterogeneous Photodegradation of Paracetamol using Goethite/H₂O₂ and Goethite/oxalic acid systems under artificial and natural light. Accepted *J. Photochem. PhotobiolA: Chemistry* (**2015**). www.journals.elsevier.com/journal-of-photochemistry

N. Laid, Bouanimba, R. Zouaghi, T. Sehili Comparative study on photocatalytic decoloration of an anionic and cationic dye using different TiO₂ photocatalysis. Desalination and Water Treatment. Doi: 10.1080/194439942015.1099470. (**2015**) www.deswater.com

S. Aliouche, K. Djebbar, T. Sehili Removal of an azo dye (Alizarin yellow) in homogeneous medium using direct photolysis, Acetone / UV, H₂O₂ / UV, S₂O₈²⁻ / UV, H₂O₂ / S₂O₈²⁻ / UV and S₂O₈²⁻ / heat. (TDWT-2015-0212.R2) (**2015**) Accepted: Desalination and Water Treatment

L. Mameri, T. Sehili, S. Belaidi, And K. Djebbar Heterogeneous photodegradation of 1-naphthol with natural iron oxide in water: influence of carboxylic acid. Journal: TDWT: Desalination and Water

Treatment.54 (2015) 2324-2333

*Mohamed El Amine Kribéche^{a,b}, Hind Mechakra^a, Tahar Sehili^{*a}, Stephan Brosillon^b.*

Oxidative photodegradation of herbicide fenuron in aqueous solution by natural iron oxide α -Fe₂O₃, influence of polycarboxylic acids. Accepted Journal of Toxicological & Environmental Chemistry (2015).

A. Ala, K. Djebbar, Amer S. El-Kalliny, T. Sehili, Henk Nugteren and Peter W.Appel

Water treatment combined chlorine (monochloramine) degradation using direct photolysis and homogeneous photo catalysis (UV/H₂O₂, UV/NaOCl) with a Medium Pressure (MP) lamp as a source of UV . International Journal of Chemical Reactor Engineering (IJCRE) 12(2):671-681- 2014

S. Aliouche, K. Djebbar, R. Zouaghi, T. Sehili Photocatalytic degradation of yellow alizarin azo dye in the presence of TiO₂ suspension. Sciences & Technologie A – N°39 Juin. 2014, 23-30

S. Azizi, T. Sehili and K. Djebbar

Comparative study of degradation of isoproturon (3-(4-isopropylphenyl)-1,1dimethylurea) photoinduced by Fe(III) AND Fe(III)-photoinduced sonochemical in aqueous solution. Sciences & Technologie A – N°39 Juin. 2014, 31-39

S. Belaidi, L. Mammeri, W. Remache, T. Sehili The effect of iron oxide and polycarboxylic acids on the photodegradation of 2,6-dimethyphenol. Sciences & Technologie A – N°39 Juin. 2014, 41-47

S. Belattar, N. Debbeche, N. Segharni and T. Sehili

Decolorization of bromocresol purple (BCP) photoinduced by a Fe (III) oxyhydroxyde (goethite). Sciences & Technologie A – N°39 Juin. 2014, 49-60

K. Benhamouda, T. Sehili and K. Djebbar

Factors influencing the photocatalytic decolorization of methylene blue in the presence of natural iron oxide and oxalic acid under UV irradiation. Sciences & Technologie A – N°39 Juin. 2014, 61-66

N. Laid, N. Bouanimba, R. Zouaghi and T. Sehili Study of the photocatalytic degradation of a cationic dye in aqueous solution by different types of catalysts. Sciences & Technologie A – N°39 Juin. 2014, 75-82

Y. Mameri¹, N. Debbache, N. Seraghni, T. Sehili

Fe(III) involvement in the photodegradation of Aspirin in homogeneous and heterogenous phase. Sciences & Technologie A – N°39 Juin. 2014, 83-89

L. Mammeri, T. Sehili, W. Remache, S. Belaidi

Natural iron oxide as a heterogeneous photo-Fenton-like catalyst for the degradation of 1-naphthol under artificial and solar light. Sciences & Technologie A – N°39 Juin. 2014, 91-97.

H. Mechakra¹, A.A. Ayachi², R. Zouzaghi¹, T. Sehili¹

Photodegradation of 3-(3,4- dichlorophenyl)-1,1-dimethylurea in presence of natural iron oxide under UV irradiation. Sciences & Technologie A – N°39 Juin. 2014, 99-105.

W. Remache, T. Sehili, K. Djebbar Effect of natural iron oxide, hydrogen peroxide, and oxalic acid on photochemical degradation of 2-chlorophenol. Sciences & Technologie A – N°39 Juin. 2014, 119-

- N. Seraghni, N. Debbache, R. Zouaghi and T. Sehili* Degradation of 3-methylphenol photoinduced by the complex Fe (III)-citrate in the presence of hydrogen peroxide. *Sciences & Technologie A – N°39* Juin. **2014**, 125-1303
- S. Azizi^{a,b}, T. Sehili^a and K. Djebbar^a* Photodegradation of isoproturon under simulated solar irradiation by different advanced oxidation processes and identification of photodegradation products in aqueous solution. *Journal of Environmental Engineering and Technology* Vol. 2, N° 1, may **2014** PP.172-184. <http://www.researchpub.org/journal/jeet/jeet.html>
- Bouanimba, N. Laid, R. Zouaghi and T. Sehili* effect of pH and inorganic salts on the photocatalytic decolorization of methyl orange in the presence of TiO₂ P-25 and PC500. *Desalination and water treatment*, 1-13. (**2013**), doi:10.1080/19443994.2013.848667
- S. Fassi, K. Djebbar, I. Bousnoubra, H. Chenini, T. Sehili,* Oxidation of Bromocresol green by different advanced oxidation processes: Fenton, Fenton-like, photo-Fenton, photo-Fenton-like and solar light. Comparative study. *Desalination and Water treatment*, 1-8 (**2013**)
- S. Azizi, T. Sehili, K. Djebbar* Comparative Study of Phototransformation of Isoproturon in Aqueous Solution by UV/H₂O₂ Treatment, Fenton's Reagent, Photo-Fenton and Photocatalytic Processes. *Journal of Environmental Engineering and Technology* Vol. 2, N° 1, January **2013** PP.17-24. ISSN: 2165-8315 (Print) <http://www.researchpub.org/journal/jeet/jeet.html>
- Y. Mameri, S. Belattar, N. Seraghni, N. Debbache and T. Sehili* Photo-oxidation of Octylbenzene Sulfonate at Goethite/H₂O Interface under Artificial and a Natural Light. *Journal of Environmental Engineering and Technology*. Volume 01, Number 03, pp.12-20 (**May 2012**).<http://www.researchpub.org/journal/jeet/jeet.html>
- S. Belattar, Y. Mameri, N. Seraghni, N. Debbache and T. Sehili* Catalytic degradation of 3,5-dimethylphenol with goethite and hydrogen peroxide *Journal of Environmental Engineering and Technology*. Volume 01, Number 03, pp.21-28 (**May 2012**).<http://www.researchpub.org/journal/jeet/jeet.html>
- S. Fassi, I. Bousnoubra, T. Sehili, K. Djebbar* Degradation of Bromocresol Green by direct UV photolysis, Acetone/UV and advanced oxidation processes (AOP's) in homogeneous solution (H₂O₂/UV, S₂O₈²⁻/UV. Comparative study. *J. Mater. Environ. Sci.* 3 (4) 732-743 (**2012**).www.jmaterenvironsci.com
- S. Belaidi, T. Sehili, L. Mameri and K. Djebbar* Photodegradation kinetics of 2,6-dimethylphenol by natural iron oxide and oxalate in aqueous solution. Volume 237, 1 June 2012, Pages 31-37 *J. Photochem. Photobiol. A: Chemistry* (**2012**).www.journals.elsevier.com/journal-of-photochemistry
- H. Boucheloukh, T. Sehili, N. Kouachi, K. Djebbar* Kinetic and analytical study of the photo-induced degradation of monuron by nitrates and nitrites under irradiation or in the dark. *Photochem. Photobiol. Sci.*, 2012, Manuscript: DOI: 10.1039/C2PP25044F. Received 14 Nov 2011, Accepted 09 May 2012 First published on the web 10 May (**2012**). www.rsc.org
- N. Seraghni, S. Belattar, Y. Mameri, N. Debbache and T. Sehili* Fe (III) –Citrate complex induced photooxidation of 3-methylphenol in aqueous solution. Received 29 October 2011; Revised 3 January 2012; Accepted 4 January. Volume 2012 (2012), Article ID 630425, 10 pages

doi:10.1155/2012/630425. *International Journal of photoenergy*
(2012).http://www.researchgate.net/International_Journal_of_Photoenergy

H. Chenini, K. Djebbar, S. M. Zendaoui, T. Sehili, B. Zouchoune Removal of an Azo Dye (Orange G) by various Methods in homogenous phase. Comparative study. *Jordan Journal of Chemistry* Vol. 6 N° 3, 307-319. (2011)

N. Bouanimba, R. Zouaghi, N. Laid and T. Sehili Factors influencing the photocatalytic decoloration of Bromophenol blue in aqueous solution with different types of TiO₂ as photocatalysts. *Desalination*, 275, 224-230. (2011).