



Bilan d'activités de l'équipe de recherche

1 Identification et présentation de l'équipe de recherche

Remplir obligatoirement tous les champs

2 Production scientifique

3 Rayonnement, visibilité et attractivité académique

4 Adéquation et interactions avec l'environnement économique, culturel et social

5 Visibilité sur le Web

Manuel d'utilisation

Recueil d'informations relatives au bilan

Vous devez activer les macro pour pouvoir utiliser ce fichier.
Il est conseillé de lire le recueil d'information.

1. Identification et présentation de l'équipe de recherche

1. تعريف و تقديم فرقة البحث

رمز الفرقة Code de l'équipe	C 1261301	1	رقم الفرقة N° de l'équipe
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التعريف بالمختبر			
مؤسسة الإلتحاق	Université de Blida 1 Saâd Dahlab		
اسم المختبر	Génie Chimique		
المختبر الإلكتروني للمختبر	الاسم المختزل للمختبر	Site Web ou URL de laboratoire	www.univ-blida.dz/lgc/accueil.htm
لقب و اسم المدرس	بوتومي حسين		

التعريف بالفرقة			
اسم الفرقة	Elaboration des Procédés de Préparation des Nanoparticules, Caractérisation et Application en Catalyse et Photocatalyse et Opérations Unitaires.		
المختبر الإلكتروني (إجباري)	الاسم المختزل للفرقة	Site Web ou URL de l'équipe (obligatoire)	www.univ-blida.dz/lgc/accueil.htm
لقب و اسم مدير الفرقة	بوتومي حسين		

التصنيف الموضوعي للفرقة			
الميدان الجزئي 1 Micro Domaine 1	الميدان الجزئي 2 Micro Domaine 2	الميدان الجزئي 3 Micro Domaine 3	
Grand Domaine GD6: Sciences pour l'ingénieur	Génie chimique	Nanosciences et nanotechnologies	Génie de l'environnement

القائمة المعصلة لأعضاء الفرقة (طلبة الدكتوراه، نظام LMD الخ)																		
الجنس Sexe	NOM à la naissance	Épouse de	Prénom (s)	الاسم	زوجة	لقب عد الميلاد	تاريخ الميلاد Date de Nais.	الشهادة الأخيرة Dernier diplôme	سنة ميل الشهادة An. Obt. D.	الرتبة Grade	سنة ميل الرتبة An. Obt. G.	الصفة Statut	الميدان الرئيسي Domaine principal	الفترة (من - إلى) Période (Début_Fin)	مؤسسة الإلتحاق Structure de rattachement	مسجل منذ Inscrit depuis	جامعة A l'Univ.	لقب واسم المؤطر أو المؤطرين NOM & Prénom du ou des encadreurs
Mr	BOUTOUMI		Hocine	حسين		بوتومي	05/10/1965	Habilitation	2011	Pr.	2017	P. Et.	Génie Chimique	13/11/2001	U. Blida-1			
Mr	KHALAF		Hussein	حسین		خلف	01/10/1948	Doc. d'Etat	1987	Pr.	1998	Ass. Acad.	Génie Chimique	15/09/1987	U. Blida-1			
Mr	BOUCHERIT		Alimed	أحمد		بوشريط	28/07/1963	Doctorat	2013	MCB	2013	P. Et.	Génie Chimique		U. Blida-1			
Melle	BOUKHATEM		Houaria	حورية		بوخاتم	17/07/1984	Doctorat	2018	MCB	2018	P. H.E.	Génie Chimique		U. Khemis Milana			
Mme	DJOUADI	OUNESLI	Lila	ليلي	ريمايلي	جودي	06/01/1982	Doctorat	2019	MCB	2019	P. Et.	Génie Chimique		U. Blida-1			
Mme	DAOUI	BAHAR	Hanifa	حنيفة	بحار	داوي	31/03/1957	Magister	2007	Doc.		P. Et.	Génie Chimique		U. Blida-1	2008	U. Blida 1	Pr BOUTOUMI Hocine
Melle	HADI BACHIR		Djaouida	جويدا		حاج باشير	31/01/1968	Magister	2005	MAA, Doc.		P. Et.	Génie Chimique		U. Blida-1	2009	U. Blida 1	Pr BOUTOUMI Hocine
Melle	LABIB		Issma	إسماء		البيب	16/12/1972	Magister	2007	MAA, Doc.		P. Et.	Génie Chimique		U. Blida-1	2006	U. Blida 1	Pr BOUTOUMI Hocine
Melle	LADAIDI		Aicha	أشحة		الدايدي	14/05/1977	Magister	2007	MAA, Doc.		P. H.E.	Chimie		U. Khemis Milana	2008	U. Blida 1	Pr BOUTOUMI Hocine
Mme	BENTAIBA	MOHAMED HACENE	Fatima	فاطمة	محمد حسان	بن عطية	22/12/1978	Magister	2008	Doc.		Temp.	Génie Chimique		U. Blida-1	2010	U. Blida 1	Pr BOUTOUMI Hocine
Mme	YAKOUBI	BOUYAHAOUI	Saida	سعيدة	يوحناوي	يعقوبي	07/04/1974	Magister	2008	Doc.		Temp.	Génie Chimique		U. Blida-1	2009	U. Blida 1	Pr BOUTOUMI Hocine
Mme	ALHOUSSEIN	KHELIFA	Manel	منال	الحسين	الحسين	01/05/1987	Master	2014	Doc.		Temp.	Génie Chimique		U. Blida-1	2014	U. Blida 1	Pr BOUTOUMI Hocine
Mme	TALEB	BOULTINE	Fella	فلة	تاليف	تاليف	12/10/1975	Magister	2014	Doc.		P. Et.	Sciences de l'Environnement		U. Blida-1	2015	U. Médéa	Pr BOUTOUMI Hocine et Pr MOULAI-MOSTEFA Nadj
Mme	DRIOUICHE	LETTREUCH	Asma	أسماء	الفرانيس	دريوش	07/07/1992	Master	2016	Doc.		Temp.	Génie Chimique		U. Blida-1	2016	U. Blida 1	Pr BOUTOUMI Hocine
Melle	FEKHAR		Nassiba	نسيبة	فخار	فخار	04/06/1989	Master	2010	Doc.		P. Et.	Chimie		U. Blida-1	2011	U. Blida 1	Pr BOUTOUMI Hocine et Pr KREA Mohamed
Melle	MOGHNI		Nassiba	نسيبة	مغني	مغني	23/07/1992	Master	2016	Doc.		Temp.	Génie Chimique		U. Blida-1	2016	U. Blida 1	Pr BOUTOUMI Hocine
Mr	ALLOUICHE		Sid Ali	سيد علي		عروش	20/10/1989	Master	2015	Doc.		Temp.	Génie Chimique		U. Blida-1	2015	U. Blida 1	Pr BOUTOUMI Hocine
Mr	ABDELAZIZ		Nabil	نبيل		عبدالعزيز	04/01/1974	Magister	2012	MAA, Doc.		P. H.E.	Génie Chimique		U. Adrar	2016	U. Blida 1	Pr BOUTOUMI Hocine
Mr	IKLEF		Mohammed Nadir	محمد نادر		خلف	02/05/1986	Magister	2016	Doc.		P. H.E.	Génie Chimique		U. Blida-1	2016	U. Blida 1	Pr BOUTOUMI Hocine
Mme	AZAIB	AZAIB	Samia	سامية	عزايب	عزايب	11/01/1986	Magister	2015	Doc.		Temp.	Génie Chimique		U. Blida-1	2016	U. Blida 1	Pr BOUTOUMI Hocine
Mme	MOUSSAOUI	IKRELEF	Karima	كريمة	موسوي	موسوي	30/08/1980	Magister	2012	Doc.		Temp.	Génie Chimique		U. Médéa	2015	U. Blida 1	Pr BOUTOUMI Hocine et Pr BENKORTBI Othmane
Mr	TABET		Djamel	جمال		تابت	11/02/1962	Magister	2003	MAA, Doc.			Génie Chimique		U. Blida-1	2004	ISTHB	Pr KHALAF Hussein

وصف علمي لبرنامج بحث الفرقة (100 - 300 كلمة)																		
Le travail de l'équipe est axé sur l'élaboration de photocatalyseurs performants utilisés principalement dans le traitement des eaux contaminées et qui peuvent être employés dans d'autres domaines comme catalyseurs dans la synthèse chimique. Ces photocatalyseurs de tailles nanométriques constitués essentiellement de semi-conducteurs tels que le TiO ₂ et le ZnO actifs sous irradiations UV, qui une fois préparés seront dopés avec des semi-conducteurs et d'autres éléments chimiques pour l'exploitation l'énergie solaire comme source d'irradiation. De nouveaux contaminants récalcitrants de diverses origines vont être explorés. De nouveaux protocoles de synthèse de ces photocatalyseurs nanométriques devront faire l'objet de travaux postérieurs. Des travaux de recherche concernant l'incorporation de ces nanophotocatalyseurs sur des supports argileux comme la bentonite et des polymères seront étudiés pour permettre la récupération et la réutilisation de ces photocatalyseurs.																		

التعليق بين البرنامج الأولي للفرقة و الجتهه (50 - 100 كلمة)																		
Les résultats escomptés à partir du programme établi par l'équipe de recherche et en particulier ceux obtenus lors des encadrements sont en parfaite harmonie. Les photocatalyseurs synthésés par insertion d'une part et le dopage d'autre part avec des semi-conducteurs, d'éléments chimiques ou de photo-sensibilisateurs ont permis de tester l'élimination de plusieurs polluants réfractaires et d'utiliser des lampes d'irradiation ordinaires au lieu des lampes UV ayant des couts exorbitants du point de vues équipement et énergétique sans oublier les dangers sur la santé et l'environnement.																		

مخيط و صعوبات (50 - 200 كلمة)																		
Le développement de la science et de la qualité de la vie sont aussi sources de nouveaux besoins de moyens pour une vie meilleure. Cet état de fait est un environnement favorable pour fournir davantage d'effort pour la recherche de nouveaux matériaux et procédés plus performant et sans retombe négatif sur la santé et l'environnement. Les moyens mis à disposition du chercheur sont important mais très insuffisant et ne reflète pas exactement la la nature et la qualité travail conigné. La lourdeur d'attribution non proportionnelles des budgets et la taxation des analyses avec des prix exorbitants constitue un handicap certains et une décelération d'avancement des travaux envisagés																		

Travaux en cours (> 100 mots)

أصل قيد الإيجاز (<100 كلمة)

Plusieurs travaux sont en cours de réalisation dont on peut citer ;
 - Synthèse de nano photocatalyseur à base de TiO2 dopé au tungstène capable de la dégradation de la tartrazine et de la rhodamine 6G ainsi qu'un mélange des 2 colorants sous irradiation visible.
 - Synthèse de photocatalyseurs à base de ZnO dopé au sulfure de cadmium pour la dégradation de la rhodamine 6G sous irradiation visible ainsi la préparation du même photocatalyseur supporté sur la montmorillonite.
 - Utilisation des procédés non conventionnelle comme les ultrasons pour la synthèse des photocatalyseurs dopés par des semi-conducteurs capable de déplacer la photosensibilisation de ces matériaux dans le visible.
 - Et actuellement, les produits photosensibles extraits des produits naturels et insérés dans une matrice polymérique peuvent être combine avec les photocatalyseurs pour augmenter l'efficacité de ces matériaux composites.

Quelques indicateurs

بعض المؤشرات

- Espace vitale du chercheur : 2m2/chercheur
- Temps moyen de présence du chercheur au laboratoire : 30h/semaine
- Moyens engagé pour la recherche en cours : modeste

Y a-t-il un ou des groupes de travail périodiques. Préciser pour chaque groupe (intitulé, responsable(s), fréquence, lieu, salle)

هل توجد مجموعة أو مجموعات عمل دورية. حدد لكل مجموعة (الاسم، المسؤول، التردد، المكان مع القاعة)

Aucun

Compléments d'information

معلومات إضافية

رقم N°	اللقب و الاسم (عبد الرنة) Nom & Prénom (par grade)	البريد الإلكتروني المهني Courriel professionnel	البريد الإلكتروني الشخصي Courriel personnel	رقم التعريف "WOS" Identifiant WOS	رقم التعريف "SCOPUS" Identifiant SCOPUS	رقم التعريف "ORCID" Identifiant ORCID	محصلة RG Score RG(Research Gate)	Indice h Google Scholar Citation			الهاتف الثابت Téléphone Fixe	الهاتف النقال Téléphone Portable
								Global	5 der. an.	# Citations		
1	BOUTOUMI Hocine	ybentoumi@gmail.com	ybentoumi@gmail.com	R-6815-2019	13006338700	0000-0003-0475-2755	21.63	13	13	368		
2	KHALAF Hussein	khalafh@hotmail.com	khalafh@hotmail.com	B-4975-2012	7003536544	0000-0002-8938-5802	24.24	18	13	1004		06 62 55 40 64
3	BOUCHERIT Ahmed	boucherit_ah@yahoo.fr	boucherit_ah@yahoo.fr				19.09					
4	BOUKHATEM Houria	boukhatem_houria@yahoo.fr	boukhatem_houria@yahoo.fr									
5	DJOUADI Lila	djouadi_lila@yahoo.fr	djouadi_lila@yahoo.fr									
6	DAOUI Hanifa	daouihanifa@gmail.com	daouihanifa@gmail.com									
7	HADI BACHIR Djaouida	hadjouda@yahoo.fr	hadjouda@yahoo.fr									
8	LABIB Issma	labibissma@yahoo.fr	labibissma@yahoo.fr									
9	LADAIDI Aicha	ladaidi14@yahoo.fr	ladaidi14@yahoo.fr									
10	BENTAIBA Fatiha	bentaibafatiha@yahoo.fr	bentaibafatiha@yahoo.fr									
11	YAKOUBI Saida	yakosa35@gmail.com	yakosa35@gmail.com									
12	ALHOUSSEIN Manel	manel-ambitieuse@hotmail.fr	manel-ambitieuse@hotmail.fr									
13	TALEB Fella	talebfella75@gmail.com	talebfella75@gmail.com									
14	DRIOUECHE Asma	butterflys-08@hotmail.com	butterflys-08@hotmail.com				1.99					
15	FEKHAR Nassiba	nassiba_chimi@yahoo.fr	nassiba_chimi@yahoo.fr									
16	MOGHNI Nassiba	moghinnassiba@gmail.com	moghinnassiba@gmail.com									
17	ALLOUCHE Sid Ali	diodd@live.fr	diodd@live.fr									
18	ABDELAZIZ Nabil	nabileabdelaziz85@gmail.com	nabileabdelaziz85@gmail.com									
19	IKLEF Mohammed Nadir	iklefmohammed@gmail.com	iklefmohammed@gmail.com									
20	AZAIB Samia	samia-az@hotmail.com	samia-az@hotmail.com									
21	MOUSSAOUI Karima	moussaoui.karima@yahoo.com	moussaoui.karima@yahoo.com									
22	TABET Djamel	djtabet@yahoo.fr	djtabet@yahoo.fr									

Remarques et observations



رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	العنوان (تحديد عدد الصفحات)	المؤلف (رن)	عدد المؤلفين أعضاء	عدد المؤلفين	حصة المؤلفين	القيمة
مرجع يداخري مطبوع C+ 50 pts/نقطة									
1									
2									
3									
المرجع من مرجع يداخري مطبوع C 20 pts/نقطة									
1									
2									
3									
مطبوعة D 15 pts/نقطة									
1									
2									
3									
ج) ناشر أو عضو لجنة نشر									
مembro del comité editorial de un libro I 30 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
المصنف الاستثنائي Exp 100 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
« Spécial issue » WOS A+ 50 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
مجلة ويب أوف ساينس A 30 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
عدد خاص « المجلة من صنف B » B+ 24 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
مجلة من صنف B أو E B 20 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
مجلة من صنف C أو D C 10 pts/نقطة									
رقم	رقم ISSN/ISBN	الناشر التجاري	السنة	عنوان المجلة أو الكتاب	المؤلف (رن) العلمي (رن)	إيريس تحرير/عضو	حصة المؤلفين	القيمة	
1									
2									
3									
د) براءات الاختراع									
الحمية الدولية A 200 pts/نقطة									
رقم	رقم الإيداع/التسجيل	العنوان	السنة	المؤلف (رن)	مؤسسة الإيداع/التسجيل	أولاد/عضو	القيمة		
1									
2									
3									
الحمية الوطنية B 50 pts/نقطة									
رقم	رقم الإيداع/التسجيل	العنوان	السنة	المؤلف (رن)	مؤسسة الإيداع/التسجيل	أولاد/عضو	القيمة		
1									
2									
3									

Tableau récapitulatif 1		جدول المحصلة 1	
Production scientifique	القيمة/ Valeur	الإنتاج العلمي	
a) Publications dans des revues	424	أ) النشر في المجالات	
b) Ouvrage	0	ب) المؤلفات	
c) Editeur ou membre d'un comité éditorial (en cours)	0	ج) ناشر أو عضو لجنة نشر	
d) Brevets d'inventions	0	د) براءات الاختراع	
Total de la production scientifique	424	مجموع الإنتاج العلمي	

3									
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Cours dispensé en Algérie					7 pts/نقطة					
رقم N°	اسم المدرسة الموسومة Nom de l'école thématique	عنوان الدرس المقدم Titre du cours dispensé	الفترة (من - إلى) Période (Début, Fin)	مؤسسة (الهيئة المستقبلة) Etablissement (structure d'accueil)	القيمة Valeur	أعضاء هيئة التدريس في الجزائر				
1										
2										
3										

d) مشاريع وبرامج البحث الحالية

A					24 pts/نقطة					
مشاريع البحث الدولية المتعددة الأطراف										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1	D00L05UN090120180002	01/01/2018	31/12/2022	Application s biotechnologique pour un agriculture durable			Pr BOUTOUMI Hocine	Membr	50%	12,00
2										
3										

B					20 pts/نقطة					
مشاريع البحث الدولية الثنائية الأطراف										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

C					16 pts/نقطة					
مشاريع البحث ما بين القطاعات										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

D					12 pts/نقطة					
مشاريع البحث القطاعية										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

E1					8 pts/نقطة					
مشاريع البحث الخاص: إشباع المؤسسة										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

E2					15 pts/نقطة					
مشاريع البحث الخاص: بحث تطبيقي										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

E3					15 pts/نقطة					
مشاريع البحث الخاص: تطوير										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

E4					6 pts/نقطة					
مشاريع البحث الخاص: بحث تكويني (مشروع الأطروحة، ما بعد التدرج، ...)										
رقم N°	رقم التسجيل ID	تاريخ بداية المشروع Date debut du projet	تاريخ نهاية المشروع Date fin du projet	عنوان المشروع Intitulé du Projet	العنوان الإلكتروني URL	النوع Type	اللقب و الاسم لعنصر الفرقة Nom et Prénom du membre de l'équipe	رئيس/عضو R/M	حصة Part des A	القيمة Valeur
1										
2										
3										

e) رئيس أو عضو اللجنة العلمية و/أو لجنة تنظيم محاضرة أو ورشة عمل

Exp+					40 pts/نقطة				
استثنائي: مؤتمر عالمي									
رقم N°	اسم المحاضرة Nom de la Conférence	اللقب و الاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع / مسجل En tant que P/M	حصة %	القيمة Valeur	
1									
2									
3									

Exp					20 pts/نقطة				
استثنائي: مؤتمر قاري									
رقم N°	اسم المحاضرة Nom de la Conférence	اللقب و الاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع/مسجل En tant que P/M	حصة %	القيمة Valeur	
1									
2									
3									

A+, A, B, B+					24 pts/نقطة				
محاضرة متعلقة مع الأعمال									
رقم N°	اسم المحاضرة Nom de la Conférence	اللقب و الاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع/مسجل En tant que P/M	حصة %	القيمة Valeur	
1									
2									
3									

C, C+					15 pts/نقطة				
محاضرة علمية دولية مع الأعمال									

رقم N°	اسم المحاضرة Nom de la Conférence	اللقب والاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع/معدل En tant que P/M	حصة %	القيمة Valeur
1								
2								
3								

Conférence nationale ou séminaire périodique مؤتمر وطني أو لقاء منتظم **12 نقطة**

رقم N°	اسم المحاضرة Nom de la Conférence	اللقب والاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع/معدل En tant que P/M	حصة %	القيمة Valeur
1	Séminaire National de Génie des Procédés (SNGP 2018)	BOUTOUMI Hocine	2018		Comité Scientifique	Membre	50%	6.00
2								
3								

Conférence de diffusion de la science et/ou de la vulgarisation محاضرة للاعلان العلمي و/أو التعميم **10 نقطة**

رقم N°	اسم المحاضرة Nom de la Conférence	اللقب والاسم Nom et prénom	السنة Année	العنوان الإلكتروني URL	اللجنة العلمية / التنظيمية Comité CS/CO	موقع/معدل En tant que P/M	حصة %	القيمة Valeur
1								
2								
3								

Mémoires ou thèses dirigés et/ou soutenus مذكرات أو أطروحات موجهة وتمت مناقشتها **3 pts/نقطة**

Mémoire PFE [master, ingénieur, science médical] (sujet pris dans le laboratoire) مذكرة ماستر الخديمي (موضوع متعلق في المختبر) **3 pts/نقطة**

رقم N°	رقم تسجيل المذكرة N° d'enregistrement	لقب واسم الطالب Nom & Prénom de(s) l'étudiant(s)	عنوان بحث الماستر Intitulé du titre de master	كتب المذكرة Rapporteur du mémoire	تاريخ المناقشة Date de sout.	مكان المناقشة Lieu de soutenance	عدد إصدار صنف WOS # Pub. Vos	رقم ISSN de(s) revus(s)	عدد إصدار صنف B # pub. Cat B	رقم ISSN de(s) revus(s)	القيمة Valeur
1	4.540.1.467	KHALDI Salah et KHEMICI Abdraouf	EXTRACTION, CARACTERISATION ET APPLICATION DES FUROCOUMARINES	Pr BOUTOUMI H	2017	U. Blida 1					3,00
2	4.540.1.426	ABABZI Mounia et ACHOUR Imane	Etude de l'inhibition électrochimique d'acier XC48 par l'extrait de Salvadora persica	Pr BOUTOUMI H	2017	U. Blida 1					3,00
3	4.540.1.450	ZEGHRABA Yahia	Silylation de l'acétate de cellulose	Pr BOUTOUMI H	2017	U. Blida 1					3,00
4	MA.540.1.61	ABZOUZI Wisssem	Valorisation biologique de l'huile essentielle de l'espèce Lippia citriodora modifié	Pr BOUTOUMI H	2017	U. Blida 1					3,00
5	4.540.1.482	KECHAD Meriem et BELABBAS Ikram	Extraction, Elaboration de pommades anti-hémorroïdes à base d'huiles essentielles	Pr BOUTOUMI H	2017	U. Blida 1					3,00
6	4.540.1.507	ABDERRAHIM Chanez et ACHOUR Dallal M	Extraction des huiles végétales et des polyphénols de deux variétés d'épis de blé	Pr BOUTOUMI H	2017	U. Blida 1					3,00
7	4.540.1.504	BENZEGHIMI Amina	Biodégradation d'un colorant azoïque par une bactérie issue de la betterave rouge	Pr BOUTOUMI H	2017	U. Blida 1					3,00
8	MA.540.1.67	HAMADI Zineb	Etude de la réaction de thionation des huiles essentielles de l'armoise blanche et	Pr BOUTOUMI H	2017	U. Blida 1					3,00
9	4.540.1.532	BOUALAMI Imene	Synthèse et caractérisation de photocatalyseur nanocomposite à base d'oxyde de	Pr KHALAF H et Pr Boutoumi H	2018	U. Blida 1					3,00
10	4.540.1.546	BELHABCHI Oussama et BELGUEBLI Moat	Etude de Dessalement de Pétrole Brute	Pr KHALAF H	2018	U. Blida 1					3,00
11	4.540.1.553	BOUSSOURA Abdelhak	Extraction des hydrocarbures Aromatiques	Pr KHALAF H	2018	U. Blida 1					3,00
12	4.540.1.541	ZIAT Omar et AISSANI Abdellah	Etude de l'influence de dopage de TiO2 par oxyde de Tungstène (W2O3) sur l'acti	Pr KHALAF H	2018	U. Blida 1					3,00
13	4.540.1.467	GUETTACHE Abderrahmane et BEN LOUL	Etude des paramètres de fonctionnement De l'unité de production du propane	Pr KHALAF H	2018	U. Blida 1					3,00
14	MA.540.1.84	CHAAR Feriel et EL-AHOUEL Sara	Extraction, modification chimique et valorisation de l'activité microbiologique de	Pr BOUTOUMI H	2018	U. Blida 1					3,00
15	MA.540.1.40	ATT SI ALI Khadija et KADDI Sabiha	Extraction, modification chimique et application antimicrobienne des furcouma	Pr BOUTOUMI H	2018	U. Blida 1					3,00
16	4.540.1.603	ABBAS Meriem et THIRKI Djazia	Elaboration d'un antiseptique semi-solide à partir	Pr BOUTOUMI H	2018	U. Blida 1					3,00
17	4.540.1.588	KEFCIOUR Imane et GHENDOUZ Houria	Extraction, formulation semi-solide et application antifongique de l'extrait des ra	Pr BOUTOUMI H	2018	U. Blida 1					3,00
18	4.540.1.489	BELLALI Imène et MENACER Rabea	Formulation semi-solide à base de l'huile des grains de nigelle locale	Pr BOUTOUMI H	2018	U. Blida 1					3,00
19	4.540.1.565	CHERFI Amina	Etude de la dégradation forcée d'un	Pr BOUTOUMI H	2018	U. Blida 1					3,00
20	4.540.1.602	KASMI M'hamed	Extraction, Elaboration de pommades anti-hémorroïdes à base d'huiles essentiell	Pr BOUTOUMI H	2018	U. Blida 1					3,00
21	4.540.1.3xx	AINADOU Samira	Application photo catalytique des nano composites à base d'oxyde de zinc et sulf	Pr BOUTOUMI H	2019	U. Blida 1					3,00
22	4.540.1.669	ADDA Ryma et EZZROUG Ibtissem	Valorisation des rejets par distillation et séchage	Pr BOUTOUMI H	2019	U. Blida 1					3,00
23	4.540.1.628	BENKADDOUR Fatima et BOUGRESSI Sab	Valorisation pharmacologique d'une formulation à base d'huiles de Pistacia Lentis	Pr BOUTOUMI H	2019	U. Blida 1					3,00
24	4.540.1.617	BENOUARED Noussaiba et BOUNEKHLA	Comparaison de la libération d'un principe actif supporté de synthèse et de source	Pr BOUTOUMI H	2019	U. Blida 1					3,00
25	4.540.1.3xx	NEDJARI Younes Abderraouf	Etude de l'impact du point de rosé sur AMOCLAN® BID 1g	Pr BOUTOUMI H	2019	U. Blida 1					3,00
26	4.540.1.678	CHANANE Rachid et DJEMAI Farouk	Optimisation du taux de monomère libre dans une réaction de polymérisation du	Pr BOUTOUMI H	2019	U. Blida 1					3,00
27	4.540.1.663	ALIA Nessorine et KECIOUR Zouina	Hydrophobisation de polymères naturels et de synyhèses hydroxylés	Pr BOUTOUMI H	2019	U. Blida 1					3,00
28	MA.540.1.2x	BOUCHACHIA Rouflla et AMEUR Selma	Valorisation via héli-synthèse des huiles essentielles à chémotype aldéhyde	Pr BOUTOUMI H	2019	U. Blida 1					3,00
29	MA.540.1.3x	BELLAHMER Hanane et SADKI Hayat	Phytoscreening et valorisation des propriétés photosensibilisantes des furcouma	Pr BOUTOUMI H	2019	U. Blida 1					3,00
30	4.540.1.418	CHAMBE Cristóvão Zefanias	Etude de l'extraction liquide-liquide du molybdène par le tri-n-octyl oxyde sous i	Dr BOUCHERIT Ahmed	2017	U. Blida 1					3,00
31	4.540.1.3XX	KHALFAOUI Zineb et KERKACHE Hour	Dopage du beurre avec de l'huile d'olive	Pr BOUTOUMI H	2016	U. Blida 1					3,00
32	4.540.1.570	MADANI Amel	Optimisation de l'atelier de broyage cuit à la cimenterie de Meftah	Dr BOUCHERIT Ahmed	2018	U. Blida 1					3,00
33	4.540.1.562	MOHAMED Hamida Habiba	Etude de l'extraction liquide-liquide du molybdène par une base de Schiff de type	Dr BOUCHERIT Ahmed	2019	U. Blida 1					3,00
34	4.540.1.3xx	RAMOUL Amira et ABBES ORABI Nesrine	Etude de l'extraction liquide-liquide du molybdène par une base de Schiff de type	Dr BOUCHERIT Ahmed	2019	U. Blida 1					3,00
35	4.540.1.355	TOBJI Lamia et AMANI Zahia	Valorisation des huiles essentielles et de la résine du faux Poivrier	Pr BOUTOUMI H	2016	U. Blida 1					3,00
36	4.540.1.362	FAHIMA Abdenour	Acétylation de la cellulose en vue de l'élaboration de membranes	Pr BOUTOUMI H	2016	U. Blida 1					3,00
37	4.540.1.370	ELMEHDI HEDJALA Amina	Formulation de pommade anti-inflammatoire à base d'Encens Oliban	Pr BOUTOUMI H	2016	U. Blida 1					3,00
38	4.540.1.357	SAADOUNE Zineb et MEGUENNI Fadhlia	mpact de la composition des huiles essentielles du Citrus sinensis (Orange) Citrus	Pr BOUTOUMI H	2016	U. Blida 1					3,00
39	4.540.1.352	DRIOUECHE Asma et MAHI Yasmine	Valorisation biologique des huiles essentielles de Ruta Montana et d'Artemisia he	Pr BOUTOUMI H	2016	U. Blida 1					3,00

Mémoire de Magister / DEMS مذكرة الماجستير **5 pts/نقطة**

رقم N°	رقم تسجيل المذكرة N° d'enregistrement	لقب واسم الطالب Nom & Prénom de(s) l'étudiant(s)	عنوان بحث الماجستير Intitulé du titre de magister	كتب المذكرة Rapporteur du mémoire	تاريخ المناقشة Date de sout.	مكان المناقشة Lieu de soutenance	عدد إصدار صنف WOS # Pub. Vos	رقم ISSN de(s) revus(s)	عدد إصدار صنف B # pub. Cat B	رقم ISSN de(s) revus(s)	القيمة Valeur
1											
2											
3											

Thèse de Doctorat / DESM (concerne le candidat membre de l'équipe et le directeur de thèse) أطروحة الدكتوراه (المرشح العضو في الفرقة ومشرف الأطروحة) **15 pts/نقطة**

رقم N°	رقم تسجيل المذكرة N° d'enregistrement	لقب واسم الطالب في الدكتوراه Nom & Prénom du doctorant	عنوان بحث الدكتوراه Intitulé du titre de doctorat	مشرف الأطروحة Directeur de thèse	تاريخ المناقشة Date de sout.	مكان المناقشة Lieu de soutenance	عدد إصدار صنف WOS # Pub. Vos	رقم ISSN de(s) revus(s)	عدد إصدار صنف B # pub. Cat B	رقم ISSN de(s) revus(s)	القيمة Valeur
1	5.540.1.047	BOUKHATEM Horiya	Préparation, caractérisation et étude de l'activité photocatalytique de nanocomp	Pr KHALAF H	2018	U Blida 1					15,00
2	5.540.1.060	DJOUADI Lila	Preparation des nanocomposites à base de TiO2 - montmorillonite dopés par bis	Pr KHALAF H	2019	U Blida 1					15,00
3											

Habilitation (cette rubrique concerne seulement les candidats) التأهيل (تخص هذه الخاتمة المرشحين فقط) **15 pts/نقطة**

رقم N°	رقم تسجيل المذكرة N° d'enregistrement	لقب واسم المرشح Nom & Prénom du candidat	عنوان بحث الدكتوراه Intitulé du titre de doctorat	مشرف الأطروحة Directeur de thèse	تاريخ المناقشة Date de sout.	مكان المناقشة Lieu de soutenance	عدد إصدار صنف WOS # Pub. Vos	رقم ISSN de(s) revus(s)	عدد إصدار صنف B # pub. Cat B	رقم ISSN de(s) revus(s)	القيمة Valeur
1											
2											
3											

g) Distinctions et Prix الشهادات والجوائز

Exceptionnel à l'international				استثنائي على المستوى الدولي		80 pts/نقطة
رقم N°	إسم الباحث Nom du chercheur	إسم الجائزة Nom du Prix	السنة Année	القيمة Valeur		
1	Pr KHALAF Hussein	Outstanding contribution in reviewing of one of Elsevier Journals "Applied Clay Science"	2017	80,00		
2						
3						

International				دولي		50 pts/نقطة
رقم N°	إسم الباحث Nom du chercheur	إسم الجائزة Nom du Prix	السنة Année	القيمة Valeur		
1						
2						
3						

National exceptionnel				وطني استثنائي		60 pts/نقطة
رقم N°	إسم الباحث Nom du chercheur	إسم الجائزة Nom du Prix	السنة Année	القيمة Valeur		
1						
2						
3						

National				وطني		30 pts/نقطة
رقم N°	إسم الباحث Nom du chercheur	إسم الجائزة Nom du Prix	السنة Année	القيمة Valeur		
1						
2						
3						

h) Membre de jury de DESM, doctorat ou d'habilitation ع) عضو لجنة التحكيم لمنظمة الدكتوراه أو التأهيل

Dans l'établissement				داخل المؤسسة		3 pts/نقطة
رقم N°	نوع النشاط Type de l'activité	عنوان Titre	عضو في فرقة التحكيم Membre de l'équipe du jury	مترشح (اسم ، لقب) Candidat (Nom;Prénom)	مؤسسة Etablissement	القيمة Valeur
1	Doctorat	Etude des effets d'inhibition du cadmium et du plomb et leur phytoaccumulation par la plante aquatique et épuratrice Lemna photodégradation catalytique de la matière organique en phase aqueuse couplée à l'ultrafiltration par membrane 2019	Pr KHALAF Hussein	AGGOUN Amelle	U Bida 1	3,00
2	Doctorat	Etude des effets d'inhibition du cadmium et du plomb et leur phytoaccumulation par la plante aquatique et épuratrice Lemna	Pr KHALAF Hussein	BENLEMMANE Widad	U Bida 1	3,00
3	Doctorat	Extraction, caractérisation et identification de quelques composés (métabolites) secondaires de Inula viscosa (Inule visqueuse)	Pr BOUTOUMI Hoine	AGGOUN Amelle	U Bida 1	1,80
4	Doctorat	Extraction, caractérisation et identification de quelques métabolites secondaires actifs d'une plante spontanée Allium triquetrum	Pr BOUTOUMI Hoine	OUAHCHIA Celia	U Bida 1	3,00
5	Doctorat	Etude des interactions contenu- contenant : Matières plastiques - Produits Pharmaceutiques 2019	Pr BOUTOUMI Hoine	MENACER Amel	U Bida 1	1,80
6	Doctorat	ETUDE CONCEPTUELLE DE LA COMPÉTENCE RHIZOSPHERIQUE CHEZ LES RHIZOBACTERIES PHYTOBENEFIQUES (PGPR)	Pr BOUTOUMI Hoine	AIT MESBAH Zohra	U Bida 1	3,00
7	Doctorat	Hydrogénélyse en phase vapeur du glycérol sur des catalyseurs à base de tungstène déposé sur des matériaux mesostructurés	Pr BOUTOUMI Hoine	BERDJA Rafik	U Bida 1	1,80
8	Habilitation		Pr KHALAF Hussein	NADJI Lamia	U Bida 1	1,80
9	Habilitation		Pr BOUTOUMI Hoine	HECINI Mouna	U Bida 1	3,00
10	Habilitation		Pr BOUTOUMI Hoine	CHERIF Hamida Saida	U Bida 1	1,80
11	Habilitation		Pr BOUTOUMI Hoine	DEMBAHRI Zahra	U Bida 1	1,80
12	Habilitation		Pr BOUTOUMI Hoine	DEBIB Aïcha	U Bida 1	1,80
13	Habilitation		Pr BOUTOUMI Hoine	AOUJ Salaheddine	U Bida 1	1,80
14	Habilitation		Pr BOUTOUMI Hoine	BANI Safa	U Bida 1	1,80
15	Habilitation		Pr BOUTOUMI Hoine	BOUZIDI Naïma	U Bida 1	1,80
16	Habilitation		Pr BOUTOUMI Hoine	HECHAMA Kamel	U Bida 1	1,80

National hors établissement				المؤسسات الوطنية		20 pts/نقطة
رقم N°	نوع النشاط Type	عنوان Titre	عضو في فرقة التحكيم Membre de l'équipe du jury	مترشح (اسم ، لقب) Candidat (Nom;Prénom)	مؤسسة Etablissement	القيمة Valeur
1	Doctorat	Dégradation des émulsions d'huile de coupe par des procédés d'oxydation 2017	Pr KHALAF Hussein	CHACHOU Lynda	USTHB	12,00
2	Doctorat	Etude de la photodégradation catalytique et oxydative des produits pharmaceutiques en solution aqueuse 2017	Pr KHALAF Hussein	BENNEMLA Messaoud	USTHB	12,00
3	Doctorat	Modification et fonctionnalisation des polymères en vue de leurs applications dans des formulations aqueuses 2017	Pr KHALAF Hussein	TERKEMANI Naila	U Y F Médéa	12,00
4	Doctorat	Elaboration de nouveaux Matériaux Poreux à base d'argile : caractérisation et utilisation pour la dépollution des effluents industriels	Pr KHALAF Hussein	MOHAMMED AZIZI Fatouma	USTHB	12,00
5	Doctorat	Modélisation et Optimisation de la Dépollution des lixiviats 2018	Pr KHALAF Hussein	LESSOUED Ridha	ENP	12,00
6	Doctorat	Traitements physico-Chimiques associés aux techniques membranaires d'une eau usée urbaine 2019	Pr KHALAF Hussein	MAZARI Lilia	USTHB	12,00
7	Doctorat	Extraction des métabolites secondaires d'intérêt pharmaceutique par des techniques émergentes : Caractérisation et Application	Pr KHALAF Hussein	MEGATELI Sara	U Y F Médéa	12,00
8	Doctorat	Modification et fonctionnalisation des polymères en vue de leurs applications dans des formulations aqueuses 2017	Pr BOUTOUMI Hoine	TERKEMANI Naila	U Y F Médéa	12,00
9	Doctorat	Extraction des métabolites secondaires d'intérêt pharmaceutique par des techniques émergentes : Caractérisation et Application	Pr BOUTOUMI Hoine	MEGATELI Sara	U Y F Médéa	12,00
10	Doctorat	Synthèse enzymatique d'un tensioactif non ionique de type sucroester par la lipase Ricinus Communis 2017	Pr BOUTOUMI Hoine	SEPHA Farida	U Y F Médéa	12,00
11	Doctorat	Valorisation physico-chimique de la biomasse locale en vue de la synthèse de macromolécule et composés actifs : Application	Pr BOUTOUMI Hoine	YOUCEF ETTOUMI Khadija	U Y F Médéa	12,00
12	Habilitation		Pr KHALAF Hussein	BOUDRICHE Lilya	USTHB	12,00
13	Habilitation		Pr BOUTOUMI Hoine	ZOUAMBIA Yamina	U Y F Médéa	12,00
14	Doctorat	Etude des activités antioxydantes et antibactériennes de l'Artemisia judaica L. par les composés du métabolisme secondaire	Pr BOUTOUMI Hoine	BENMANSOUR Nebahat	U TLEMCCEN	12,00

Etranger au pays de l'établissement				المؤسسات الأجنبية		50 pts/نقطة
رقم N°	نوع النشاط Type	عنوان Titre	عضو في فرقة التحكيم Membre de l'équipe du jury	مترشح (اسم ، لقب) Candidat (Nom;Prénom)	مؤسسة Etablissement	القيمة Valeur
1						
2						
3						

Tableau récapitulatif 2 جدول المحصلة 2

Rayonnement, visibilité et attractivité académique	القيمة / Valeur	الإشعاع، المقروئية والاستقطاب الأكاديمي
a) Plénière ou tutorial à une conférence scientifique ou un cours dans un workshop	0	أ) حصة علمية أو أعمال موجهة في محاضرة علمية أو درس في ورشة عمل
b) Communication à une conférence scientifique	37	ب) مداخلة ضمن محاضرة علمية
c) Participation à des écoles thématiques de recherche	0	ج) المشاركة في المدارس الموضوعاتية للبحث

d) Projets et programmes de recherche en cours	12	د) مشاريع وبرامج البحث الحالية
e) Président ou membre du CS et/ou du CO d'une conférence ou d'un workshop	6	هـ) رئيس أو عضو اللجنة العلمية و/أو لجنة تنظيم محاضرة أو ورشة عمل
f) Mémoires ou thèses dirigés et/ou soutenus	147	و) مذكرات أو أطروحات موجهة وتمت مناقشتها
g) Distinctions et Prix	80	ز) الشهادات والجوائز
h) Membre de jury de DESM, doctorat ou d'habilitation hors établissement	203	ح) عضو لجنة التحكيم لمناقشة الدكتوراه أو التأهيل
Total rayonnement, visibilité et attractivité académique	485	مجموع الإشعاع، المقرونية والاستقطاب الأكاديمي

4. Adéquation et interactions avec l'environnement économique, culturel et social

Retour

4. التلاؤم والتفاعل مع المحيط الاقتصادي والثقافي والاجتماعي

a) Organisation de périples scientifiques, de salons ou autres activités pour la diffusion de la science et de la technologie et de la diffusion de la culture scientifique

(أ) تنظيم قوافل علمية ومعارض ونشاطات أخرى بهدف نشر العلوم والتكنولوجيا ونشر الثقافة العلمية

Exceptionnel : organisation de périples scientifiques avec des personnalités de premier rang mondial

نقطة/100 pts استثنائي : تنظيم قوافل علمية مع شخصيات عالمية بارزة

رقم N°	اسم الحدث أو المحاضرة العلمية Nom de l'événement ou de la présentation du Scientifique	وصف وجيز للحدث Description succincte de l'événement	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

Organisation de cycles de conférences grand public, de salon ou de journées d'innovation ou de vulgarisation

نقطة/50 pts تنظيم سلسلة محاضرات للجمهور العريض، معارض أو أيام الابتكار أو التعميم

رقم N°	اسم الحدث أو المحاضرة العلمية Nom de l'événement ou de la présentation du Scientifique	وصف وجيز للحدث Description succincte de l'événement	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

Participation ou organisation d'émission, film ou reportage

نقطة/30 pts المشاركة في أو إعداد حصص، فيلم أو تحقيق

رقم N°	اسم الحدث أو المحاضرة العلمية Nom de l'événement ou de la présentation du Scientifique	وصف وجيز للحدث Description succincte de l'événement	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

Organisation et/ou participation à des activités de vulgarisation

نقطة/30 pts تنظيم و/أو المشاركة في أنشطة التعميم

رقم N°	اسم الحدث أو المحاضرة العلمية Nom de l'événement ou de la présentation du Scientifique	وصف وجيز للحدث Description succincte de l'événement	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

b) Partenariat avec le secteur socio-économique

(ب) الشراكة مع القطاع الاجتماعي والاقتصادي

Convention (avenant)

نقطة/30 pts الاتفاقية (الملحق)

رقم N°	تحديد الشريك Identification du partenaire	نوع النشاط Type d'action	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

Rapport d'expertise (ou enquête), réalisation de guide ou de fiche technique

نقطة/30 pts تقرير الخبير (أو التحقيق) ، إعداد دليل أو بطاقة تقنية

رقم N°	تحديد الشريك Identification du partenaire	نوع النشاط Type d'action	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

Exploitation du brevet

نقطة/30 pts استغلال براءة الاختراع

رقم N°	تحديد الشريك Identification du partenaire	نوع النشاط Type d'action	اللقب والاسم لعضو الفرقة Nom et prénom du membre de l'équipe	السنة Année	الصفة رئيس / عضو En tant que Responsable/Membre	حصة %	القيمة Valeur
1							
2							
3							

c) Post graduation spécialisée

(ج) الدراسات المتخصصة في ما بعد التدرج

Formations

نقطة/10 pts التكوين

رقم N°	اسم التكوين Intitulée de la formation	اسم الدرس المقدم Intitulé du cours dispensé	تعريف الشركاء Identification du ou des partenaire(s)	ممثل عضو في الفرقة Membre intervenant de l'équipe	مؤسسة الاستقبال Structue d'accueil	# ساعات/أسبوع # d'heures/semaine	الفترة (من - إلى) Période (Début, Fin)	رئيس / عضو En tant que R/M	القيمة Valeur
1									
2									
3									

Encadrements / Soutenances

نقطة/5 pts التلخيص / المناقشات

رقم N°	رقم تسجيل المذكرة N° d'enregistrement	لقب واسم الطالب Nom & Prénom de(s) l'étudiant(s)	عنوان بحث المذكرة Intitulé du mémoire	كاتب المذكرة Rapporteur du mémoire	تاريخ المناقشة Date de soutenance	مكان المناقشة Lieu de soutenance	القيمة Valeur
1							
2							
3							

Tableau récapitulatif 3

جدول المحصلة 3

Adéquation et interactions avec l'environnement économique, culturel et social	القيمة/القيمة Valeur	التلاؤم والتفاعل مع المحيط الاقتصادي والثقافي والاجتماعي
a) Organisation de périples scientifiques, de salons ou autres activités pour la diffusion de la science et de la technologie et de la diffusion de la culture scientifique	0	(أ) تنظيم قوافل علمية ومعارض ونشاطات أخرى بهدف نشر العلوم والتكنولوجيا ونشر الثقافة العلمية
b) Partenariat avec le secteur socio-économique	0	(ب) الشراكة مع القطاع الاجتماعي والاقتصادي
c) Post graduation spécialisée	0	(ج) الدراسات المتخصصة في ما بعد التدرج
Total de l'adéquation et interactions avec l'environnement économique, culturel et social	0	مجموع تلاؤم وتفاعل مع المحيط الاقتصادي والثقافي والاجتماعي

5. Visibilité sur le Web (Facultatif)



5. الوضوح على شبكة الانترنت (إختياري)

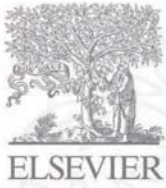
Visibilité de l'équipe sur le web

وضوح الفرقة على شبكة الانترنت

Visibilité de l'équipe sur le web	%	Valeur	وضوح الفرقة على شبكة الانترنت
a) Référencement du site web dans des moteurs de recherche scientifique spécialisée.			أ) مرجعية موقع الانترنت ضمن محركات البحث العلمية المتخصصة
b) Nombre des pages du site web de l'équipe			ب) عدد صفحات موقع الفرقة على شبكة الانترنت
c) Nombre des documents en formats pdf, ps, doc, docs, ppt, tex, référencés dans les moteurs de recherche scientifique spécialisés			ج) عدد الوثائق في شكل pdf, ps, doc, docs, ppt, tex التي أشير إليها في محركات البحث العلمية المتخصصة
Total			المجموع

Bilan Récapitulatif de l'Equipe 1

2. Production scientifique	424	2. الإنتاج العلمي
3. Rayonnement, visibilité et attractivité académique	485	3. الإشعاع، المقروئية والاستقطاب الأكاديمي
4. Adéquation et interactions avec l'environnement économique, culturel et social	0	4. التلاؤم والتفاعل مع المحيط الاقتصادي والثقافي والاجتماعي
5. Visibilité sur le web		5. الوضوح على شبكة الانترنت
Total	909	مجموع



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in recognition of the contributions made to the quality of the journal





The Performance of the *Ruta Montana L.* Essential Oil Bisulfite Adduct as Mixed Natural Emulsifier and a Comparison with Single Tailed Surfactant

Asma Drioueche, Hocine Boutoumi & Ahmed Boucherit

To cite this article: Asma Drioueche, Hocine Boutoumi & Ahmed Boucherit (2019): The Performance of the *Ruta Montana L.* Essential Oil Bisulfite Adduct as Mixed Natural Emulsifier and a Comparison with Single Tailed Surfactant, Journal of Dispersion Science and Technology, DOI: [10.1080/01932691.2019.1654897](https://doi.org/10.1080/01932691.2019.1654897)

To link to this article: <https://doi.org/10.1080/01932691.2019.1654897>



Published online: 21 Aug 2019.



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The Performance of the *Ruta montana* L. Essential Oil Bisulfite Adduct as Mixed Natural Emulsifier and a Comparison with Single Tailed Surfactant

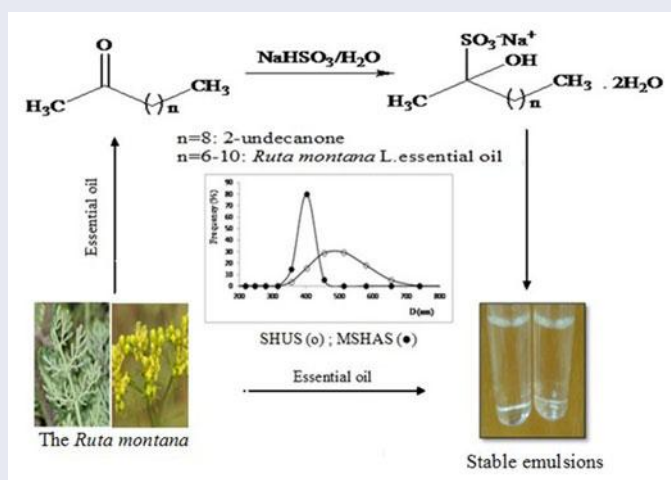
Asma Driouèche, Hocine Boutoumi, and Ahmed Boucherit

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ABSTRACT

The aim of the present study is the use of *Ruta montana* L. essential oil consisting mainly of aliphatic ketones (93%) of variable chains length (C_9 - C_{13}) as a raw material for the synthesis of a natural emulsifier. The *Ruta montana* L. essential oil in water emulsions, were prepared using sodium 2-hydroxyundecane-2-sulfonate (SHUS) as a single bifunctional anionic-nonionic surfactant and mixed sodium 2-hydroxyalkyl-2-sulfonate (MSHAS) as a mixture surfactant containing different alkyl chains length, obtained by the action of sodium hydrogenosulfite aqueous solution on the 2-undecanone and the *Ruta montana* L. essential oil respectively. The synthesized surfactants were characterized by Fourier transform infrared Spectroscopy (FTIR), nuclear magnetic resonance spectroscopy NMR (1H , ^{13}C , APT, HSQC) and thermogravimetric analysis (TGA). The synergistic effect of the mixture surfactant on the surface tension, emulsion morphology, droplet size distribution, viscosity and stability with time of emulsions was investigated. Critical micelle concentration (CMC) values obtained by surface tension and conductivity measurement were respectively 1 mM and 0.8 mM and the surface tension at CMC, γ_{CMC} were $47.4 \text{ mN}\cdot\text{m}^{-1}$ and $39.6 \text{ mN}\cdot\text{m}^{-1}$ for the model surfactant and the mixture respectively. The adsorption efficiency of the surfactants at the surface was very important in particular for the emulsions prepared from the surfactant mixture. The non-Newtonian and viscoelastic behavior of the prepared emulsions were directly related to the significant increase of their viscosities resulting from the decrease of the droplets size characterized by Dynamic Light Scattering (DLS) with values of 418.3 nm and 376 nm for the model surfactant and the mixture.

GRAPHICAL ABSTRACT



ARTICLE HISTORY

Received 12 June 2019
Accepted 8 August 2019



KEYWORDS

Ruta montana L.; Essential oil; synergism; natural surfactant; emulsion stability

Introduction

The use of essential oils in low doses requires their solubilization in an aqueous media using an emulsifying agent. In addition of the toxicity of the synthetic surfactants in particular the nonionic surfactants, namely the Triton X-100

and the Tween 80, problems of instability of these formulations and the non reproducibility of their applications were met. These disadvantages can be remedied by the use of natural surfactants obtained directly from a natural source, animal or vegetal. These surface agents are responded poorly,

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Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/ldis.

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Antimicrobial Activity of the Thio-Cyclized *Lippia citriodora* Leaf Essential Oil Cultivated in Algeria

Fatma Zohra Benoua, Moussa Brada, Hocine Boutoumi, Mohamed Bezzina, Ahmed Boucherit, Asma Driouèche, Marie-Laure Fauconnier & Georges Lognay

To cite this article: Fatma Zohra Benoua, Moussa Brada, Hocine Boutoumi, Mohamed Bezzina, Ahmed Boucherit, Asma Driouèche, Marie-Laure Fauconnier & Georges Lognay (2019) Antimicrobial Activity of the Thio-Cyclized *Lippia citriodora* Leaf Essential Oil Cultivated in Algeria, Journal of Biologically Active Products from Nature, 9:4, 250-259, DOI: [10.1080/22311866.2019.1666739](https://doi.org/10.1080/22311866.2019.1666739)

To link to this article: <https://doi.org/10.1080/22311866.2019.1666739>



Published online: 04 Nov 2019.



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Simulation of Adsorption Kinetics of Malachite Green onto Activated Carbon

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A. Benmaamar,^a A. Benmaamar,^a and A. Aggoun^b

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Received August 10, 2016; accepted June 13, 2017

Abstract

In this work, activated carbon was produced from residue of fruit of *Sapindus* and used for the application of adsorption removal of malachite green dye from simulated aqueous solution. Adsorption kinetics of malachite green onto activated carbon was studied in a batch system. The effects of pH and contact time were examined. The malachite green maximum adsorption occurred at pH 6 (4.5 mg/g) and the lowest adsorption occurred at pH 2 (4.1 mg/g). The apparent equilibrium was reached after 120 min. Optimal experimental conditions were determined. In order to determine the best-fit-adsorption Kinetics, the experimental data were analyzed using pseudo-first-order, pseudo-second-order, pseudo-third-order, Esquivel, and Elovich models. Linear regressive and non-linear regressive methods were used to obtain the relative parameters. The statistical functions were estimated to find the suitable method which fit better the experimental data. Both methods were suitable to obtain the parameters. The non-linear pseudo-first-order model was the best to fit the equilibrium data. The present work showed that activated carbon can be used as a low cost adsorbent for the malachite green removal from water.

Keywords: Activated carbon (AC), malachite green (MG), linear, non-linear regression.

Introduction

Malachite green (MG) is used in coloring paper, dyeing cottons, wools, silk, leather and coating for paper stock. The treatment of effluents containing such dyes is of great interest due to their harmful impacts on receiving waters [1]. The best efficient method used for the quick removal of dyes from the aqueous solution is the physical adsorption [2]. Aromatic solutes showed slightly better adsorption than aliphatic solutes, due to the potential to form $\pi - \pi$ bonds with the basal planes of activated carbon. No significant influence of solute charge or size was observed [3]. This work aims to understand the potential of activated

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A non-toxic microbial surfactant from *Marinobacter hydrocarbonoclasticus* SdK644 for crude oil solubilization enhancement

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ARTICLE INFO

Keywords:

Marinobacter hydrocarbonoclasticus
Biosurfactant
Waste frying oil
Crude oil solubilization
Artemia bioassay

ABSTRACT

This study aims to investigate the ability of a biosurfactant produced by *Marinobacter hydrocarbonoclasticus* strain SdK644 isolated from hydrocarbon contaminated sediment to enhance the solubilization rate of crude oil contaminated seawater. Phylogenetic analysis shows that strain SdK644 was very closely related to *M. hydrocarbonoclasticus* with 16S rRNA gene sequence similarity of 97.44%. Using waste frying oil as inducer carbon source, the producing biosurfactant by strain SdK644 was applied to improve crude oil solubilization in seawater. The preliminary characterization of the produced biosurfactant by FT-IR analysis indicates its possible classification in a glycolipids group. Results from crude oil solubilization assay showed that SdK644 strain biosurfactant was 2-fold greater than Tween 80 surfactant in crude oil solubilization and 12-fold higher than seawater control, as shown by GC-MS analysis of aliphatic compounds. Furthermore, this bioactive compound was shown to be nontoxic against *Artemia* larvae in short-term acute toxicity bioassay. Generally, the results showed the possible use of *M. hydrocarbonoclasticus* strain SdK644 biosurfactant in bioremediation processes of the marine environments.

1. Introduction

Petroleum pollution of the environment is of grave risk because petroleum hydrocarbons are toxic to all forms of life. The contamination of the environment by crude oil is quite common because of its widespread use and its accompanying disposal operations and accidental spills (Zahed et al., 2010). The total input of petroleum hydrocarbons into the oceans from all sources is about 1.300.000 t per year. Alone, natural seeps account for 46% and 37% by all activities associated with consumption of petroleum products. Adding to all this, during transportation of petroleum products, accidental spills and operational discharges of cargo oil contributes with 12% of the total flux discharged, followed by far by extraction processes (3%) (NRC, 2003).

Crude oil -a heterogeneous mixture of hydrocarbons- consists mainly of alkanes, cycloalkanes, and aromatics. Low amounts of resins (nitrogen, sulfur, and oxygen compounds), and asphaltic fraction (partially oxygenated and highly condensed) exist also in crude oil with

varying rates depending on the nature of the oil, light or heavy (Tyagi et al., 2011; Weng et al., 2015). Microorganisms capable of degrading hydrocarbons have a ubiquitous existence (NRC, 2003; Vandecasteele, 2005; McGenity et al., 2012). The principal-hydrocarbon degrader bacteria in marine environments are: *Alcanivorax*, *Marinobacter*, *Thalassolituus*, *Cycloclasticus*, *Oleispira*, and a few others (Yakimov et al., 2007; Acosta-González and Marqués, 2016).

The biodegradation kinetics of crude oil in seawater is controlled by numerous factors such as crude oil composition and concentration, temperature, oxygen, nutrients supply, salinity, pH, and oil availability to microorganisms (Vandecasteele, 2005). Petroleum hydrocarbons have a limited bioavailability because they are mostly insoluble in water (Chen et al., 2013). To overcome this kinetic limitation, the application of synthetic surfactants or biosurfactants can promote this availability by reducing interfacial tensions between the two immiscible phases, which leads to increase the surface area of oil slick and therefore improve the solubility of hydrocarbons (Urum and Pekdemir,

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Characterization of an Algerian diatomite by inverse gas chromatography: Specific and non-specific contribution and Lewis acid–base parameters

Hanifa Daoui, Hocine Boutoumi, Yasmine Bouhamidi, Ahmed Boucherit &
Mohamed Zouikri

To cite this article: Hanifa Daoui, Hocine Boutoumi, Yasmine Bouhamidi, Ahmed Boucherit & Mohamed Zouikri (2018): Characterization of an Algerian diatomite by inverse gas chromatography: Specific and non-specific contribution and Lewis acid–base parameters, International Journal of Polymer Analysis and Characterization, DOI: [10.1080/1023666X.2018.1478247](https://doi.org/10.1080/1023666X.2018.1478247)

To link to this article: <https://doi.org/10.1080/1023666X.2018.1478247>



Published online: 18 Jul 2018.



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Characterization of an Algerian diatomite by inverse gas chromatography: Specific and non-specific contribution and Lewis acid–base parameters

Hanifa Daoui^a, Hocine Boutoumi^a, Yasmine Bouhamidi^b, Ahmed Boucherit^c, and Mohamed Zoukri^d

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ABSTRACT

The fundamental understanding of the behavior of a solid is intimately related to the understanding of the interactions on the surface of the latter, a major challenge in particular if the material is natural and ecological. The infinite dilution-inverse gas chromatography was used to evaluate the surface thermodynamic properties of several phases (grafted and/or coated) diatomite. A series of non- or polar-solute probes were injected at temperatures of 45 °C and 90 °C. The dispersive surface free energies values of the supports decrease with increasing temperature and their active surface is amphoteric with predominantly acidic character.

ARTICLE HISTORY

Received 11 April 2018
Accepted 16 May 2018

KEYWORDS

Diatomite; infinite dilution-inverse gas chromatography (ID-IGC); dispersive surface free energy; specific component of surface free energy; Lewis acid–base parameters

Introduction

The inverse gas chromatography (IGC) is an extension of the conventional method. It is considered as an effective and efficient technique in the thermodynamic characterization of the materials surfaces, such as polymers, biopolymers, natural fibers, pharmaceutical materials or textiles.^[1–5] The use of this technique to define the surface physico-chemical properties comes at a period where a number of scientists seek more and more to give a better interpretation of the mechanisms of retention and thus to have the parameters that can improve the quality of the separation. All the more, as the awareness of the importance of the interactions on the solid surface in the understanding of the behavior of the latter, has largely contributed to the development of the method.

Thus, for several years, a particular attention was concerned to the phenomenon of adsorption on the various supports, which plays a not insignificant role in the retention of solutes. This problem has amplified with the development of the technique in particular with the improvement of the sensitivity of the detectors. In order to meet the criteria of performances (i.e. an inertia of the support, an improvement of the retention times, a decrease of the adsorption phenomena, etc.), we propose to study the surface properties of grafted stationary phases and of others coated with polar and apolar stationary phase. To our knowledge, very few works in the literature describe the

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Research paper

Degradation of aqueous ketoprofen by heterogeneous photocatalysis using Bi₂S₃/TiO₂–Montmorillonite nanocomposites under simulated solar irradiation



Lila Djouadi^a, Hussein Khalaf^a, Horiya Boukhatem^{a,b}, Hocine Boutoumi^a, Amina Kezzime^c, J. Arturo Santaballa^d, Moisés Canle^{d,*}

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^d Universidade da Coruña, Grupo Reactividade Química e Fotorreactividade (React!), Departamento de Química, Facultade de Ciencias & CIGA, E-15071 A Coruña, Spain

ARTICLE INFO

Keywords:

Heterogeneous photocatalysis
Ketoprofen
Nanocomposites
Montmorillonite
Bi₂S₃
TiO₂

ABSTRACT

The photocatalytic degradation of Ketoprofen (KP), 2-(3-benzoylphenyl)-propionic acid was studied under near UV–Vis irradiation (NUV–Vis) using supported photocatalysts. Bi₂S₃/TiO₂–montmorillonite (Bi₂S₃/TiO₂–Mt) photocatalysts were synthesized using a two-step ion exchange and impregnation method, and characterized using different techniques: Fourier transform infrared spectra (FTIR), X-ray fluorescence (XRF), X-ray diffraction (XRD), UV–Vis diffuse reflectance spectroscopy (UV–Vis DRS) and photo-electrochemistry. Successful intercalation of TiO₂ and Bi₂S₃ in the montmorillonite (Mt) was carried out, and the corresponding energy diagram for the Bi₂S₃/TiO₂ heterojunction has been proposed. The resulting Bi₂S₃/TiO₂–Mt nanocomposites were able to degrade KP under NUV–Vis irradiation. KP photodegradation was monitored by HPLC. The kinetics of photocatalytic transformation followed the Langmuir–Hinshelwood kinetic model. Pseudo-first-order kinetics adequately fitted the experimental data (*t*_{1/2} ca. 17 min at pH 11, *t*_{1/2} ca. 44 min at pH 3. 0.5 g·L⁻¹ Bi₂S₃/TiO₂ (25/75)–Mt nanocomposite). Factors affecting the kinetics of the process, such as the different Bi₂S₃/TiO₂ ratio and initial pH solution have been discussed. KP photoproducts were identified using HPLC–MS, and the corresponding reaction mechanism has been proposed. Photodegradation of KP over Bi₂S₃/TiO₂–Mt nanocomposites under NUV–Vis irradiation starts with the decarboxylation of KP and subsequent hydroxylation by HO[•] and oxidation by HO[•] and other reactive oxygen species (ROS) leads to the formation of photoproducts. TiO₂ and Bi₂S₃ intercalated in the montmorillonite are cheap and efficient nanocomposites for the abatement of persistent organic pollutants (POP), such as KP, using NUV–Vis light.

1. Introduction

In the past decade, there has been a growing interest in the occurrence of pharmaceuticals and personal care products (PPCPs) in aquatic environments. Common wastewater treatment processes are not efficient enough for the elimination of a variety of PPCP because of their low biodegradability (Halling-Sørensen et al., 1998; Huber et al., 2003; Petrović et al., 2005). Consequently, these compounds occur in sewage treatment plant (STP) effluents, and are discharged into surface waters (Halling-Sørensen et al., 1998; Huber et al., 2003; Petrović et al., 2003 and Petrović et al., 2005). Besides classical biological treatments, photochemical processes and advanced oxidation processes (AOP) may

be a solution for the elimination and degradation of PPCP (Burrows et al., 2002; Ternes et al., 2002).

Ketoprofen (2-(3-benzoylphenyl) propionic acid, KP -Scheme 1-, is one of the worldwide most-used non-steroidal anti-inflammatory drugs (NSAID), also used as analgesic and antipyretic. Anti-inflammatory and analgesic effects are due to inhibition of prostaglandin synthesis, while its antipyretic effect is attributed to a resetting of the hypothalamic temperature-regulating center. These drugs are widely used as non-prescription drugs (Abdel-Hamid et al., 2001; Dvorak et al., 2004; Marco-Urrea et al., 2010).

Heterogeneous photocatalysis is an alternative remediation technology and has attracted attention of many research groups around the

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Impact of the Composition of the Essential Oils of *Citrus sinensis* (orange) and *Citrus limonum* (lemon) on the Microbiological Activity

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Abstract

The composition of the essential oils of Citrus sinensis (orange) and Citrus limonum (lemon) showed a microbiological activity. These essential oils were extracted by hydrodistillation from the peel of citrus fruit of Citrus sinensis and Citrus limonum. Their antibacterial activity was determined in vitro by two different methods (Aromatogram and Vapor phase methods) on 07 strains (04 bacteria, 02 yeasts and 01 fungus). The Screening highlighted that the two essential oils either pure or diluted had a remarkable bacteriostatic activity towards the growth of certain bacterial strain. Also, these two essential oils presented a strong power antifungal. It is clear from this study that the essential oil of Citrus limonum presented an antibacterial activity higher than the essential oil of Citrus sinensis against the same bacteria.

Keywords: *Citrus limonum; Citrus sinensis; Essential Oils; microbiological activity.*

I. Introduction

The essential oils occupy an important place in man daily life. They have very interesting properties which find their applications in various fields such as medicine, pharmacy, cosmetology, agriculture, etc. For instance the use of essential oils dates back to a very long time, since prehistorically man practiced already in its own way the extraction of odorous ingredients of plants [1].

The development of new therapeutic agents is essential to manage the bacterial resistance and the food oxidation phenomena. In this goal, the investigation of plants represents an inestimable potential for the development of new antimicrobial substances. The essential oils are beginning to gain a great interest as an important potential source of natural molecules [2]. They are the object of studies considering their possible use as an alternative for the treatment of infectious diseases [3].

The essential oils are one of the most important active ingredients of herbs with interesting and useful antibacterial and therapeutic activities which depend mainly on their chemical composition [4].

The sources of these aromatic plants are widely spread in the nature. Algeria has a series of important and various species. This was the stimulating factor for this work the objective of which was the extraction and the study of the chemical analysis and the biological activity of essential oils from two species belonging to the same botanical family, namely the Rutaceae family represented by the two *Citrus limonum* and *Citrus sinensis* species.

II. Materials and methods

A. Biological material

The *Citrus* fruit freshly harvested, cleaned, washed, and had their Barks cut into small pieces. During this study, two essential oils were tested in vitro on: 04 bacterial strains 02 Gram + and 02 Gram-, 02 yeast; 01 fungus. These pathogenic germs are part of the ATCC collection and were supplied by the Institute Pasteur of Algiers. These species are often responsible for major problems of public health, due to their natural resistance to various antimicrobial agents. The bacterial strains were hospital strains isolated from the samples on the sick.



EFFECT OF CADMIUM AND LEAD ON NITRATE AND PHOSPHATE REMOVAL BY THE DUCKWEED *LEMNA GIBBA*

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(RECEIVED 27 JULY 2017; RECEIVED IN REVISED FORM 28 JANUARY 2018; ACCEPTED 12 MARCH 2018)

ABSTRACT – In the present study, the effect of the heavy metals, such as cadmium and lead on the removal of nitrate (NO₃⁻) and orthophosphate (PO₄³⁻) was assessed using *Lemna gibba*. Duckweed plant was cultured in N and P-rich medium, supplemented with heavy metals. A total of two initials (0.1 and 1 mg/L) concentrations of Cd and Pb were used. Samples were taken every two days to assess plants efficiency in removing both nutrients and heavy metals over Six days. Results showed that in control and in all treatments (Cd and Pb), nitrate and orthophosphate concentrations decreased markedly within the two days of initiating experiments as compared to the initial concentrations (1.76 ±0.01 mg P/L and 850±0.01 mg N/L). The highest phosphate removal efficiencies (percentage removal) were obtained on the fourth day at 1 mg Cd/L and 1 mg Pb/L. Whereas, nitrate removal showed maxima on the sixth day at 1 mg Cd/L and at 0.1 mg Pb/L. As compared to the control, the presence of Cd and Pb at 0.1 mg/L in the culture medium had no effect on phosphate removal, while a Pb concentration of 1 mg/L revealed a better phosphate removal. Cd and Pb at 0.1 mg/L enhanced nitrate removal as compared to control. *Lemna gibba* was able to simultaneously remove Cd, Pb, nitrate and phosphate, major causes of contamination and eutrophication in water bodies.

KEYWORDS: HEAVY METALS, NUTRIENTS, PHYTOREMEDIATION, AQUATIC PLANT, EUTROPHICATION.

INTRODUCTION

Heavy metal contamination and eutrophication of aquatic ecosystem are global environmental problems. The problem of water pollution by heavy metals is becoming more and more serious with the increasing industrialization.

Unlike organic substances, heavy metals are essentially non-biodegradable and therefore accumulate in the environment (Ali et al., 2013). Because of their toxicity, cadmium and lead are of prime environmental concern (Scheifler et al., 2002). Over the past five decades, the worldwide release of Cd has reached 22.000 tones (Singh et al., 2003) and a total of 4 million tons of Pb are mined in one year (Dirilgen, 2011). Their bioaccumulation through the food chain can pose risks to human health (Gisbert et al., 2003). The threat of these

toxic metals to human and animal health is aggravated by their long-term persistence in the environment (Forstner, 1995). Often present in industrial effluents, cadmium and lead are hazardous to living organisms in the aquatic system (Nanda Kumar et al., 1995). Cadmium occurs in natural and wastewaters, and it originates from many industrial sources such as processing, smelting and mining ores, reclamation of scrap metals, incineration for disposal of waste products, run-off carrying fertilizers and fungicides etc. (Liu et al., 2007). For lead, the most important sources into wastewater include batteries, pigments; paints, petrol, cables, steels, alloys, and plastic industries (Salem et al., 2000). Also, eutrophication of water bodies is an important global

Comparative study of the degradation rate of new and regenerated mineral oils following electrical stress

 ISSN 1751-8687
 Received on 19th February 2018
 Revised 3rd July 2018
 Accepted on 1st October 2018
 doi: 10.1049/iet-gtd.2018.6077
 www.ietdl.org

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Abstract: The objective of this contribution was to study the behaviour of new and regenerated insulating oil used in power transformers under the influence of an electric stress. To estimate the degradation rate of the dielectric fluids, one thousand (1000) successive breakdowns were generated according to the IEC 60156 standard. The parameters such as dissipation factor ($\tan \delta$), resistivity, total acid number (TAN) and oil water content were measured and examined following IEC/ISO standards. Good correlations have been obtained between TAN/resistivity and $\tan \delta$ which might provide a 'picture' of the fluid condition. The dissolved oxidation products for the two dielectric fluids (after the application of electric breakdowns) was evaluated by Fourier-transform infrared spectroscopy. The results obtained indicate that the degradation of the parameters is significant and confirms the influence of an alternative electric field (AC) on the new and regenerated oils. It was also suspected that inhibitors and antioxidants were removed from the oil after regeneration. Their concentration should therefore be monitored and replenished when necessary.

1 Introduction

Power transformers are one of the vital and expensive elements in the industry of electrical energy. Their essential functions in the transmission and distribution allow them attracting the attention of engineers and researchers. Especially, their insulation mainly composed of mixed cellulosic materials and oil, are of concerns. Their condition and lifespan can be mathematically or experimentally evaluated by the physicochemical, electrical or mechanical characteristics of their insulation system [1, 2]. A large number of power transformers are filled with mineral oils because of their advantages that constitute unique combinations of dielectric, cooling and oxidation stability properties [3].

Power transformer oil undergoes continuous deterioration and degradation because of electrical, thermal, mechanical and environmental stresses occurring during operation [4]. Therefore, any deterioration in the oil can lead to premature failure of the equipment. When the mineral oil is subjected to high thermal and electrical stresses, gases are generated from the decomposition of the molecules [3].

The electric stress accelerates ageing, possibly by increasing the precipitation of acid produced from the oil degradation onto paper surfaces. Chemically speaking, the acid build-up will worsen the insulating paper tensile strength.

Aggressive decay products being absorbed by the solid insulation attack the cellulose fibres too. Sludge produced may stick onto the large surface of power transformer, and affects heat transfer between the core/coil and the tank/radiators surfaces.

The cracking process of cellulose (depolymerisation by a succession of chemical reactions) causes chain scissions along with the release of gases and moisture into the surrounding oil and some large molecules such as furfurals. In the complex oil-impregnated dielectrics used in high-voltage insulation, oil is usually the weaker component of the system, both in dielectric strength and in reaction to environmental stress. Knowledge of the stability of insulating oils under electrical stress is of utmost importance to both electrical-equipment designers and operating engineers.

The process of decomposition of insulating oils under electric stress begins with the breakdown of unstable mineral oil molecules covalent bonds. Oxygen, moisture or other chemical reactive

radicals can spontaneously be generated; the process being catalysed by heat [5, 6]. Free radicals are very reactive and can adversely affect the physicochemical and dielectric properties of the insulating oil. The sources of energy at the origin of a covalent bond splitting are three folds:

- The strong electro-magnetic stress at the origin of the free electron injection process in the insulating fluid [7, 8].
- The thermal stress generated by the active parts.
- Finally, the aggressiveness of dissolved oxygen.

Free electrons (e⁻) accelerated by electric field are primary source for the breakdown of vulnerable covalent bonds ($\sim 4 \text{ eV} \approx 386 \text{ kJ mol}^{-1}$). Electrons escape from the conduction band of the metal conductor and are emitted from its surface, especially during very short but frequent voltage surges [9, 10].

2 Motivation for the work

The goal of this study is to study the behaviour of new and regenerated mineral oils under the impact of an electric stress. For this purpose, the degradation rate of some physicochemical and the electric properties of the insulating oils was assessed. All the obtained results are compared and analysed.

3 Sample description

3.1 New oil

Power oil, a naphthenic, uninhibited, mineral oil produced by APAR INDUSTRIES LTD was considered. This high grade is referenced as new oil. Power oil serves as comparison baseline for the regenerated oil in the following benchmark tests.

3.2 Regenerated oil

This study proposes a regenerated oil sample, recovered by a process of regeneration based on the principle of a physical and chemical treatment. The proposed protocol of regeneration was already verified [11] by coupling the centrifugation, the dehydration and the sorption with four different adsorbents:

USE OF ACTIVATED CARBON FROM SAPINDUS FOR THE ADSORPTION OF METHYLENE BLUE

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(Received 3 April 2017 – Accepted 18 January 2018)

ABSTRACT

Hamad, Taous, Zoubir Benmaamar, Mohamad Nedjioui and Ahmed Boucherit. 2018. Use of activated carbon from sapindus for the adsorption of methylene blue. Lebanese Science Journal, 19(1): 112-122.

Activated carbon was produced from Sapindus fruit residue and was used for the adsorption of methylene blue dye from simulated aqueous solution. Adsorption kinetics of methylene blue onto activated carbon were studied in a batch system. The effects of pH and contact time were examined. The goal of the present study was the determination of the optimal experimental conditions. The maximum adsorption of methylene blue occurred at pH 6.0 (4.83 mg/g) and the lowest adsorption occurred at pH 2.0 (4.35 mg/g). 120 min was the time needed for apparent equilibrium. Adsorption modelling was determined by using the Freundlich and Langmuir isotherms. Data were interpreted based on R^2 and various error distribution functions. Adsorption isotherm was best described by non linear Freundlich isotherm model. In order to determine the best-fit-adsorption kinetics, the experimental data were analyzed using pseudo-first-order, pseudo-second-order, pseudo-third-order, Esquivel, and Elovich models. The needed relative parameters were determined by linear and non-linear regressive methods. The statistical functions were estimated to find the suitable method which fit the experimental data. Both methods were suitable to obtain the required parameters. The model that best fit the present equilibrium data was the linear Elovich model (type 1 and 2). The present work showed that activated carbon can be used as a low cost adsorbent for the methylene blue removal from aqueous solutions.

Keywords: Activated carbon (AC), methylene blue (MB), modelling, linear regression, non-linear regression.

INTRODUCTION

In coloring paper, dyeing cottons, wools, silk, leather and coating for paper stock, methylene blue (MB) is used. The treatment of effluents containing such dyes is of great interest due to its harmful impacts on receiving water (Kushwaha *et al.*, 2014). The best efficient method used for the quick removal of dyes from aqueous solutions was physical adsorption (Allen *et al.*, 2005). A slightly better adsorption was shown by aromatic solutes compared to aliphatic solutes, due to the potential to form π - π bonds with the basal planes of activated carbon. No significant influence of solute charge or size was observed (De Ridder, 2012).

Adsorption process was used for the elimination of pollutant from simulated aqueous solution and is extremely influenced by the medium of the solution, which affects the adsorption rate, the nature of the adsorbent surface charge, the aqueous adsorbate species speciation and the ionization extent. Functional dissociation groups on the adsorbate and adsorbent were affected by a pH change during the adsorptive process (Khattra *et al.* 2009).

In this study, the potential of activated carbon (AC) was evaluated to remove MB dye from simulated aqueous solutions in batch mode.

Revue Agrobiologia

www.agrobiologia.net

ISSN (Print): 2170-1652

e-ISSN (Online): 2507-7627



ÉTAT PHYTOSANITAIRE DU BLÉ DUR LOCALE STOCKÉ EN ALGÉRIE

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Reçu le 19/05/2017, Révisé le 17/06/2017, Accepté et mis en ligne le 30/06/2017

Résumé

Objectifs: L'objectif de cette étude est d'évaluer l'abondance et la diversité des insectes et des acariens ainsi le taux de contamination du aux moisissures dans le blé dur stocké en Algérie.

Méthodes: Les échantillons de grains de blé dur ont été collectés au niveau de silos métalliques de douze wilayas du nord d'Algérie. L'identification des arthropodes est réalisée sous loupe binoculaire et la contamination fongique sous microscope optique en s'appuyant sur les clés et les catalogues d'identifications.

Résultats: L'étude a révélé des infestations croisées d'insectes et de champignons dont le taux diffèrent en fonction des localités. Les insectes présents au niveau des silos appartiennent à l'ordre des Lépidoptères, des Coléoptères et des Hyménoptères ont été enregistrés. Les Coléoptères majoritaires sont représentés par cinq familles avec une dominance des: *Sitophilus oryzae* et *Rhizopertha dominica*. Les Lépidoptères et les Hyménoptères sont représentés respectivement par une seule famille. L'étude mycologique a révélé la présence de moisissures du stockage représenté par l'*Aspergillus* et le *Penicillium* avec une abondance de 31% et 12% et des moisissures du champs du genre *Alternaria*, *Bipolaris*, *Fusarium* et *Rhizopus* avec des abondances respectives de 22%, 10%, 9% et 16%.

Conclusion: La gestion des silos de stockages en Algérie doit être orientée vers une lutte contre toutes les sources de déperditions par un contrôle judicieux et permanent du blé.

Mots clés: insecte, stockage, grains, blé dur, moisissure.

PHYTOSANITARY STATE OF DURUM WHEAT LOCAL STORAGE IN ALGERIA

Abstract

Objectives: The objective of this study is to evaluate the abundance and diversity of insects and the rate of mold contamination of durum wheat stored in Algeria.

Methods: Samples of durum wheat grains were collected at metallic silos in twelve wilayas in northern Algeria. The identification of arthropods is carried out under a binocular microscope and the fungal contamination under optical microscope through the keys and catalogs identifications.

Results: The study found that stored wheat grains were infested with insects and fungi at different rates depending on the locality. The presence of *Lepidoptera*, *Coleoptera* and *Hymenoptera* was recorded. The main *Coleoptera* are represented by five families with a dominance of: *Sitophilus oryzae* and *Rhizopertha dominica*, the *Lepidoptera* and *Hymenoptera* were respectively represented by only one family. The mycological study revealed the presence of two categories of molds, most of which are known to be toxinogenic: The ones of the storage of *Aspergillus* and *Penicillium* with an abundance of 31% and 12% of the total flora identified and the field pathogens Genus *Alternaria* 22%, *Rhizopus* 16%, *Bipolaris* 10% and *Fusarium* 9%.

Conclusion: The management of storage silos in Algeria must be directed towards a fight against all sources of losses by a judicious and permanent control of wheat.

Keywords: insect; storage; grain, durum wheat, mold.

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Volume 3 Issue 3, pp.104-112

Date of Publication: 18th November 2017

DOI-<https://dx.doi.org/10.20319/mijst.2017.32.104112>

OPTIMIZATION OF THE FORMULATION PARAMETERS OF A PARAPHARMACEUTICAL 100% BIO CREAM

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Abstract

The extraction of the aromatic fraction (hydrolat, essential oil) fresh aerial part of Lavandula vera was accomplished by steam distillation. The average yield of essential oil is 1-2%. The anti-inflammatory cream BIO obtained has interesting dermal properties. This cream is endowed with remarkable healing properties and anti-infectious. It leads to dermatological applications and opens the way eventually fruitful research. During this work we have formulated an anti-inflammatory cream 100% BIO whose active ingredient is the essential oil of lavender with these attractive properties. Optimization of formulation parameters made it possible to have a stable cream. Physicochemical analysis, sensory (with diagram properties evaluation) and comparative study with a reference cream (conventional) was able to show the qualities of our BIO cream.

Keywords

Formulation, Emulsion, Essential oil, BIO cream, Safety testing

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Available Online at: <http://grdspublishing.org/>

Transformer oil reclamation by combining several strategies enhanced by the use of four adsorbents

ISSN 1751-8687
 Received on 9th December 2016
 Revised 7th March 2017
 Accepted on 26th March 2017
 doi: 10.1049/iet-gtd.2016.1995
 www.ietdl.org

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Abstract: From an environmental perspective, petroleum-based aged oils removed from power transformers are source of several pollutants and therefore cannot be disposed of without due care. The degradation of oil in in-service transformers is due to various factors concurrent with the operation of the units over several years. The present study proposes a new strategy to rejuvenate used mineral oils by combining centrifugation, dehydration and sorption with four different adsorbents: activated carbon (ACH), silica gel (SG), magnesium oxide (MO) and activated bentonite (AB). The process of regeneration proposed in this study resulted in a level of restoration that saw the used oil take on the characteristics of new oil (colour, dissipation factor, resistivity, permittivity, acid number). The results also showed that the optimum form of the re-refined base oil can be attributed to a 10% (w/w) quaternary mixture of the adsorbents, itself comprised of 1% ACH, 6% SG, 1% MO and 2% AB. The anticipated benefits are reduced risk of dielectric breakdown blamed for over 75% of extra high-voltage (EHV) power transformer failures and extended transformer life expectancy by retarding the solid insulation aging processes.

1 Introduction

Insulating oils play an importance role in several industrial applications. Among a variety of uses are those concerned with power transformers with the aim of insuring reliability of these important assets. However, the drawback of the insulating liquid is that, under service conditions, it undergoes a slow but steady degradation processes. A progressive degradation and premature aging result from various phenomena including electrical and thermal stresses and chemical contaminants [1]. Moreover, metallic and cellulosic particles in suspension along with other products are impurities that increase the rate of degradation and shorten the useful life of the transformers. The failure potential of the transformer, therefore, is directly correlated with the liquid insulating material. Degraded insulating material is responsible for 75% of failed transformers [2].

The degradation of insulating oil begins as soon as the equipment is energised. A series of chemical reactions occur when the oil is exposed to a combination of electrical and thermal stresses, oxygen and the coil core components. Thus, as the oxidation process progresses, acids and polar compounds are formed and in turn become sludge. Sludge affects heat transfer between the core/coil and the tank/radiators surfaces. Consequently, the heat transfer capacity of the system is affected, increasing the operating temperature of the transformer and accelerating the degradation of the oil. Fortunately, mineral oils in this condition can be changed or treated by a specific process [3]. For good environmental and economic reasons, oxidised oils can be reused after regeneration. Regeneration means that unwanted pollutants are eliminated by adsorption processes, including the elimination of acidic components, water and other aging by-products. Currently, with adsorption as one of the principal mechanisms of regeneration, activated bauxite seems to be one key to resolve this problem. Activated bauxite is used as a low-cost adsorbent for the recovery of degraded oil and regenerates the oil to almost its initial condition. However, the drawback of the regeneration process with bauxite is the large volume of wastes. Thus, numerous investigations have attracted considerable

attention by focusing on the production of low-cost adsorbents using cheap and available materials. As reported in various articles, the micro particles of carbonated of amorphous calcium phosphate (CACP) are an adequate adsorbent for the removal of polar compounds present in used mineral oil. Furthermore, as an alternative, biopolymers such as chitosan polysaccharide (CHS from natural sources—especially insects, crustacean shells and fungal cell walls—are also used to bind the adsorbent CACP micro particles together, a high performance of the process compared with those where bauxite is used. Yet, activated carbon (AC) as conventional adsorbent has proved to be effective in this field and offers manifold advantages in terms of the removal of both organic and inorganic pollutants. This material has proved to possess great potential as adsorbent due to its porous structure and its high specific surface, which can be appropriately modified by physical and/or chemical treatments. The use of date pits, which constitute ~10% (w/w) of the total weight of the date itself, has proved to be beneficial for this process. Moreover, using the date palm in this way offers a useful, substantial and beneficial alternative to simple disposal or use as animal feed [4]. Bentonite, occurring in natural form as clays, also hold commercial importance for bleaching oils and fats [5]. As such, they are termed bleaching clays. These particular properties can be modified for the purpose of colour removal (bleaching) and for enhancing critical properties. Usually, the mineral clays are treated with HCl and/or H₂SO₄ to reach activated forms. Relevant literature and extensive review papers describing the ability of activated bentonite's compounds in acting as an adsorbent for impurities, suspended matters, sediment and the removal of contaminants such as the ash and carbon content found in used transformer oil are available [6].

This article summarises work related to oil treatment of power transformers. The intent is to propose an environmentally friendly four adsorbents-based system to rejuvenate service-aged oil. The objective of the proposed strategy is mainly focused on obtaining high-quality regenerated oil with properties close to new oil.



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ENHANCED COAGULATION FOR ALGAE REMOVAL IN A TYPICAL ALGERIA WATER TREATMENT PLANT

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Abstract

This work aims to study the physicochemical and biological parameters of Boukerdene Dam's water and treated water at different steps of the treatment processes in Sidi-Amar's Station (Tipaza, Algeria) with a particular interest to the phytoplankton. This work is also related to the demonstration of the enhanced coagulation (EC) process as an efficient method in algae and organic matter (OM) removal from surface water by its application in jar tests. The diversity of the phytoplankton shows the presence of 21 genera comprising 30 algae species out of 8 samples taken from the Boukerdene Dam. Among the identified genera, seven of them are responsible for the unpleasant tastes and odours of water; six others are responsible for filter fouling. Generally, the conventional drinking water treatment processes employed at this water treatment plant shows a limited efficiency of OM and algae removal. The novelty of this work is that the jar tests of EC (pH 6 and alum dose 15 mg L⁻¹) as only one stage of water treatment, without chlorination and filtration, improve the removal of OM and algae at 97 to 99%, respectively.

Keywords: algae, bacteria, enhanced coagulation (EC), natural organic matter (NOM), surface water

Received: February, 2013; Revised final: February, 2014; Accepted: February, 2014

1. Introduction

Since trihalomethanes (THMs) were found in disinfected water using chlorine in the 1970s by Rook (1974), disinfection by-products (DBPs) have become a center of awareness in water treatment. In fact, more than 700 species of DBPs have been affirmed. Among DBPs, THMs and haloacetic acids (HAAs) were the two DBP groups detected at the greatest levels and most frequently found in disinfected water using chlorine through the world (Hong et al., 2013). In addition, the important DBP precursor was usually suggested to be natural organic matter (NOM). NOM is known as the complicated

matrix of naturally existing organic materials detected in natural waters (Boucherit et al., 2015; Ghernaout et al., 2011; Ghernaout and Boucherit, 2015). Indeed, the NOM may notably influence several features of water treatment, comprising the coagulation efficiency and disinfectants use (Ghernaout et al., 2010a). Consequently, NOM impacts drinking water quality by participating in DBPs formation, biological re-growth in the distribution system, colour, taste, and odour generation (Chen et al., 2008; Wang et al., 2013).

In Algeria (North of Africa), it is well known that water resources are basically surface waters (Ghernaout et al., 2010b). In Tipaza City (North of

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REMOVAL OF MALACHITE GREEN BY ADSORPTION ONTO ACTIVATED CARBON: MODELLING OF THE ADSORPTION KINETICS

ELIMINATION DU VERT DE MALACHITE PAR ADSORPTION SUR CHARBON ACTIF: MODELISATION DE LA CINETIQUE D'ADSORPTION

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RESUME

Dans ce travail, le charbon actif a été préparé à partir des résidus du fruit de Sapindus et utilisé comme adsorbant pour éliminer le vert de malachite contenu dans une solution aqueuse simulée. La cinétique d'adsorption du vert de malachite sur charbon actif a été étudiée en batch. Les effets du pH et du temps de contact ont été examinés. La quantité maximale adsorbée du vert de malachite a été obtenue à pH 6 (4.5 mg/g) et la quantité minimale a été obtenue à pH 2 (4.1 mg/g). Le temps d'équilibre apparent a été atteint après 120 min. Les conditions expérimentales optimales ont été déterminées. Dans le but de déterminer le modèle de cinétique d'adsorption le plus adéquat, les résultats expérimentaux ont été analysés en utilisant les modèles cinétiques pseudo-premier-ordre, pseudo-deuxième-ordre, pseudo-troisième-ordre, pseudo-premier-ordre, esquivel, et elovich. Le modèle non linéaire pseudo-premier-ordre est le plus adapté pour représenter les résultats expérimentaux. Cette présente étude montre que le charbon actif est un adsorbant moins onéreux, qui peut être utilisé, pour éliminer le vert de malachite de l'eau.

MOTS CLES: Charbon actif (AC), vert de malachite (VM), modélisation, linéaire, régression non-linéaire.

ABSTRACT

In this work, activated carbon was produced from residue of fruit of Sapindus and used for the application of adsorption removal of malachite green dye from simulated aqueous solution. Adsorption kinetics of malachite green onto activated carbon was studied in a batch system. The effects of pH and contact time were examined. The malachite green maximum adsorption occurred at pH 6 (4.5 mg/g) and the lowest adsorption occurred at pH 2 (4.1 mg/g). The apparent equilibrium was reached after 120 min. Optimal experimental conditions were determined. In order to determine the best-fit-adsorption kinetics, the experimental data were analyzed using pseudo-first-order, pseudo-second-order, pseudo-third-order, esquivel, and elovich models. Linear regressive and non-linear regressive methods were used to obtain the relative parameters. The statistical functions were estimated to find the suitable method which fit better the experimental data. Both methods were suitable to obtain the parameters. The non linear pseudo-first-order model was the best to fit the equilibrium data. The present work showed that activated carbon can be used as a low cost adsorbent for the malachite green removal from water.

KEYWORDS: Activated carbon (AC), malachite green (MG), Modelling, linear, non-linear regression.



Diclofenac degradation using mont-La (6%)-Cu_{0.6}Cd_{0.4}S as photocatalyst under NUV–Vis irradiation. Operational parameters, kinetics and mechanism



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ARTICLE INFO

Keywords:

Photocatalysis
Semiconductor sulfides
Diclofenac
UV–Vis
Pollution abatement
Persistent organic pollutants
Modified clays
Montmorillonite
Nanocomposites

ABSTRACT

We report the aqueous photodegradation -under NUV–Vis radiation- of diclofenac, a common non-steroidal anti-inflammatory drug found to be persistent in the environment, using mont-La(6%)-Cu_{0.6}Cd_{0.4}S, a nanocomposite prepared by simple cation exchange and impregnation method. Operational parameters relevant for the process have been optimized: amount of catalyst, dissolved oxygen concentration, initial diclofenac concentration and pH. Heterogeneous suspensions of 1 g L⁻¹ of mont-La(6%)-Cu_{0.6}Cd_{0.4}S nanocomposite allowed removal of ca. 92% of 10 mg L⁻¹ solution of diclofenac at pH = 5.9 with natural dissolved oxygen from air within 240 min, meanwhile TOC removal was 67%. The photocatalytic process is adequately described by the Langmuir-Hinshelwood kinetic model, following apparent pseudo-first order kinetics. A suitable reaction mechanism has been proposed, based on the available kinetic evidences and the reaction products observed by HPLC–MS analysis.

1. Introduction

Pollution of the aquatic environment with microcontaminants can be attributed to different sources, such as emissions from production sites, direct disposal in households, excretion, and human and animal medical care products [1]. The use of pharmaceuticals and personal care products (PPCPs) is increasing steadily because of the increasing World population and fast urbanization.

PPCPs have been frequently detected in water ways as micro-pollutants (ranging from ng L⁻¹ to µg L⁻¹) that can have potentially harmful environmental effects, even at concentrations as low as ppt, [2] and their bioaccumulation in the aquatic life will become a threat to the environment [3,4].

Pharmaceuticals are a class of emerging environmental contaminants that are extensively and increasingly being used in human and veterinary medicine [5]. Pharmaceuticals are often classified according to therapeutic purpose (*i.e.*, antibiotic, analgesic, antidepressant, *etc.*), and their worldwide consumption is substantial. Their active ingredients comprise a variety of synthetic chemicals produced

by pharmaceutical companies in both the industrialized and the developing world [6].

Non-steroidal anti-inflammatory drugs (NSAIDs) are of the greatest environmental interest due to their widespread availability [7]. Diclofenac (2-(2,6-dichlorophenylamino) phenylacetic acid (DIC), C₁₄H₁₁NO₂Cl₂ (Scheme 1), is one of the most consumed and commonly used NSAIDs, mainly for symptomatic treatment of low back pain, post-surgery pain, musculoskeletal injuries and chronic pain associated with cancer [7,8], but also for the treatment of hyperthermia, rheumatoid arthritis, osteoarthritis, and ankylosing spondylitis, soft tissue disorders, renal colic, acute gout, dysmenorrhea and migraine [9]. It is sold in different presentations depending on the intake mode: tablets, capsules, suppositories, and intravenous solutions, and in ointments and gels for dermal application [10,11]. Accumulation of DIC in the food chain and its toxicity to liver, kidney, gill cells, as well as renal lesions even at low concentrations may cause a major ecological damage to different species, such as vultures [12]; therefore, it is urgent and necessary to remove this compound from wastewater.

Recently, attention has been paid to different methods for DIC

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Phytochemical Characterization and *in vivo* Anti-inflammatory and Wound-healing Activities of *Argania spinosa* (L.) Skeels Seed Oil

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(Received April 21, 2016; Revised October 27, 2016; Accepted November 1, 2016)

Abstract: The extracted oil of *Argania spinosa* (L.) was investigated in regard to its fatty acid composition and polyphenols by Gas Chromatography-Mass Spectrometry (GC-MS) and Ultra-high Performance Liquid Chromatography-Electro Spray Ionization-Quadruple Time Of Flight-Mass Spectrometry (UPLC-ESI-QTOF-MS), respectively. The reduction rate of topical inflammation of extracted oil was calculated using a mouse model. The skin toxicity of argan oil on intact and damaged skin was assessed using a rabbit model. The findings revealed a rich content of monounsaturated and polyunsaturated fatty acids and presence of phenolic acids. The oil exhibited a reduction of inflammation and facilitated a healing process without any irritation. The experimental study revealed that *A. spinosa* seed oil displays remarkable wound-healing and anti-inflammatory activities related to its chemical composition. Argan oil has positive potential for skin medicinal application.

Keywords: *Argania spinosa* (L.) Skeels; oil; chemical composition; anti-inflammatory; wound-healing. © 2016 ACG Publications. All rights reserved.

1. Introduction

Argan tree, *Argania spinosa* (L.) Skeels, belongs to the *Sapotaceae* family and represents only the species of the genus *Argania* [1].

The species *A. spinosa* is the most original tree of North Africa, and endemic in southwestern Morocco, where it grows over about 828 000 ha [2]. In Algeria, the argan tree can be found in the southwest of the province of Tindouf between Jebel Ouarkziz and Hamada. Unfortunately, it has been ignored by the local population its range is now limited to an area of 3 000 hectares [3, 4]. Some years ago, successful attempts to cultivate this tree were made in many places such as Stidia (a region in Mostaganem province), Chlef and Mascara.

The most valuable part of argan tree is its fruit, which is highly sought after its oil is extracted from its seeds. Argan oil is eaten raw in the southwest of Morocco [4, 5]. Recent studies suggested that dietary argan oil from fruits could protect against cancer [6, 7] and atherosclerosis, and improve plasma lipid profiles, paraoxonase activities and LDL peroxidation in healthy Moroccan men [8]. It is traditionally used for treatment of rheumatism, constipation, diabetes and respiratory difficulties. Moreover, argan oil is used externally for skin diseases, against juvenile acne, flaking and wrinkled or scaly dry skin, as well as for nourishing hair and as a moisturizing oil [9]. This oil has been widely used in traditional medicine for centuries to cure wounds and burns [10, 11, 12].

The multiple virtues of argan oil regarding human health are due to its chemical composition, such as the glyceride fraction (99%), which is rich in polyunsaturated fatty acids like oleic (47.7%) and

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A batch study of adsorption equilibrium and kinetic for methylene blue onto synthesized zeolite

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Received 26 Apr 2016,
Revised 24 Nov 2016,
Accepted 08 Dec 2016

Keywords

- ✓ Synthesized zeolite (ZS),
- ✓ Methylene blue (MB),
- ✓ Linear,
- ✓ Non-linear regression,
- ✓ Kinetic adsorption,
- ✓ Error estimation,
- ✓ Regression coefficient (R^2)

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Abstract

Synthesized zeolite (SZ) was characterized by nitrogen adsorption-desorption experiments (specific surface area measurements by the BET method), by XRD, and used for the methylene blue (MB) adsorption in synthesized water. The BET surface area (S_{BET}) was 509.9637 m²/g. The XRD indicated the formation of zeolite Y. Kinetic adsorption of methylene blue (MB) onto synthesized zeolite (SZ) was studied in a batch system. The effects of pH and contact time were examined. The maximum adsorption occurred at pH 7. The plateau of the equilibrium state was obtained after 60 min. In order to determine the best-fit-kinetic adsorption, the experimental data were analyzed using pseudo-first-order, pseudo-second-order, pseudo-third-order, esquivel, and elovich models. Linear regressive and non-linear regressive methods were used to obtain the relative parameters. The error analysis was calculated to find which method was better to fit the experimental data. The non-linear pseudo-second order model was best to fit the equilibrium data. The value of free energy (ΔG) was also determined. The present work showed that SZ can be used as a low cost adsorbent for the MB removal from water.

1. Introduction

The textile industry is one of industrial waste water source. This contaminated water is very toxic for the human and animals [1]. Methylene blue (MB) is used in coloring paper, dyeing cottons, wools, silk, leather and coating for paper stock. Although methylene blue is not strongly hazardous, it can cause some harmful effects, such as heartbeat increase, vomiting, shock, cyanosis, quadriplegia, and tissue necrosis in humans [2]. The test, application and development of many treatment methods were the essential subjects of many articles such as: physical, chemical, biological [3]. Chemical coagulation-flocculation [4] different type of oxidation processes [5] biological process [6], membrane-based separation processes [7] and adsorption [8] were the treatments used in the purification of waters.

The best efficient method used for the quickly removal of dyes from the aqueous solution is the physical adsorption [9]. In this case, activated carbon has been proven to be widely used adsorbent for lowering the concentration of dyes in waste water, but it presents some disadvantages such as: flammability [10], less regenerability at low temperature [11-12], weak hydrophobicity [13] ...

Actually, the best alternative to carbon adsorbent is zeolite [10]. Recently, commercial zeolites have been used to remove the dissolved pollutants in water and/or wastewater [14]. However, there are relatively limited studies done on the cationic dyes adsorption by synthesized zeolites [15]. In this work, we are interesting to the potential of SZ for the MB dye removal from simulated waste water using batch method. To optimize experimental variables (such as: pH and contact time), the adsorption kinetic efficiency of MB was studied. Linear and non-

THIONATION OF ESSENTIAL OILS FROM ALGERIAN *ARTEMISIA HERBA-ALBA* L. AND *RUTA MONTANA* L.: IMPACT ON THEIR ANTIMICROBIAL AND INSECTICIDAL ACTIVITIES

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Abstract. Essential oils were extracted from *Artemisia herba-alba* L. and *Ruta montana* L. by means of steam distillation and thionated with a reagent combination of phosphorus pentasulfide and sodium bicarbonate. Both parent essential oils and their modified ones were screened for their biological and insecticidal activities. The results showed that essential oils were composed mainly of ketones; essential oils from *Artemisia herba-alba* L. and those from *Ruta montana* L. consisted of bicyclic monoterpenes and acyclic aliphatic ketones (thujone, camphor and 2-undecanone), respectively. The antimicrobial activity of essential oils was substantially improved upon thionation (from 10 to 34 mm and from 11 to 32 mm). The insecticidal effect of the thionated essential oil from *Ruta montana* L. was observed to be very significant, but that of the essential oil from *Artemisia herba-alba* L. was observed to decrease (from 100% to 70% after 24 h). The extracted essential oils as well as their thionated forms were characterized by GC-MS, FT-IR, and UV-visible.

Keywords: essential oil, thionation, *Artemisia herba-alba* L., *Ruta montana* L., GC-MS analysis.

Received: 06 April 2017/ Revised final: 21 August 2017/ Accepted: 26 September 2017

Introduction

Biologically active molecules from essential oils are known for their pharmacological [1], antimicrobial [2], insecticidal [3], and antioxidant [4] activities. Essential oils, acting as homogeneous matrixes, consist chiefly of hydrocarbon and oxygenated mono- and sesquiterpenes [5] and, in some instances, of aliphatic terpenes (2,4-dimethyl hexane) as in *Ruta* type [6]. Apart from the bioactive molecules, essential oils composed of tolerable terpenoids such as alcohols and aldehydes [7], and of toxic terpenes such as ketones [8]. A variety of ketones with different structures are present in variable proportions in the chemical compositions of essential oils of some species like *Absinthe* [9], *Artemisia* [10], *Salvia officinalis* L. (sage) [11], *Peppermint* [12], and *Ruta* [13].

Overall, the difference in the chemical compositions of essential oils would impart different biological activities. Some bacterial strains and fungi exhibit some resistance against some essential oils, as they are fitted with suitably

adapted protecting systems. Similarly, some insects develop a certain defensive behavior against some essential oils and can be thus unaffected when treated with.

Sulfur-containing compounds are widely known for their biological and pharmacological activities [14]. Henceforth, one of the objectives is to test different essential oils and to determine which are the most effective against bacteria, fungi and insects, that is, alleviating the relative resistance of these species towards the treating molecules, that thionation of the essential oils of *Ruta Montana* L. (*Rutaceae*) and *Artemisia herba-alba* L. was undertaken. By doing so, the physicochemical properties of the essential oils from these plants, and their hydrophobicity and volatility are expected to be enhanced as a result of the formation of thioketones (or thiones), less polar groups than ketones would induce a hydrogen bonding lowering, in addition to the displacement of the tautomeric equilibrium towards the formation of the enethiol.

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Blida le : 22/10/2019

INVITATION

A
L'attention du Professeur
BOUTOUMI H

Monsieur,

Dans le cadre de l'obtention du diplôme de Doctorat en science agronomiques vous êtes cordialement invité en tant qu'examinateur à la soutenance de :

Mr BERDJA Rafik qui aura lieu le samedi 26/10/ 2019 à 09h : 00h à l'Université

Blida1, Faculté des Sciences de la Nature et de la Vie (SNV) (Salle de Soutenance du département des Biotechnologies

Dans l'attente de vous voir parmi nous, veuillez accepter Monsieur l'ex pression de mon profond respect.

V/Doyenne Chargée de la PGRS

ناتبة العميدة مكلفة بما بعد التدرج
والبحث العلمي والعلاقات الخارجية
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يتضمن تصريح بإلقاء أطروحة دكتوراه علوم

في : العلوم الفلاحية

تخصص: العلوم الفلاحية

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- بمقتضى مقرر رقم 305، الصادر عن وزير التعليم العالي و البحث العلمي بتاريخ 15 أكتوبر 2018 المتضمن تعيين السيد بزينة محمد، بصفة مدير، بالنيابة، لجامعة البليدة 1.

يقرر

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بالقاء أطروحة الدكتوراه المذكور تحت عنوان:

Etude conceptuelle de la compétence rhizosphérique chez les rhizobactéries phyto-bénéfiques (PGPR).

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قاسي يحي	أستاذ التعليم العالي	جامعة باب الزوار	عضوا مناقشا
بن شعبان مسعود	أستاذ التعليم العالي	جامعة البليدة 1	مقررا ومشرفا

المادة الثالثة: يكاف عميد كلية العلوم الطبيعة و الحياة بتنفيذ هذا المقرر الذي سينشر في النشرة الرسمية لجامعة البليدة 1

10 1 JUL 2019

البليدة في:

مدير الجامعة

مدير جامعة البليدة 01

الأستاذ: بزينة محمد



الجمهورية الجزائرية الديمقراطية الشعبية
REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE

MINISTERE DE L'ENSEIGNEMENT SUPERIEUR
ET DE LA RECHERCHE SCIENTIFIQUE

وزارة التعليم العالي والبحث العلمي

Université de Blida 1



جامعة البليدة

Faculté des Sciences de la Nature et de la Vie

كلية علوم الطبيعة والحياة

B.P : 270 -Route De Soumâa – Blida

ص.ب: 270 -طريق الصومعة – البليدة

Service de la Post –Graduation et de la Recherche Scientifique



Blida le : 16/09/2019

INVITATION

A

**L'attention du Professeur
BOUTOUMI Hocine**

Monsieur,

Dans le cadre de l'obtention du diplôme de Doctorat LMD sciences Biologiques vous êtes cordialement invité en tant qu'examinateur à la soutenance de :

Mme MENACER Amel qui aura lieu le Dimanche 29/09/ 2019 à 10h : 00h à l'Université

Blida1, Faculté des Sciences de la Nature et de la Vie (SNV) (Salle de Soutenance du département de Biologie)

Dans l'attente de vous voir parmi nous, veuillez accepter Monsieur l'ex pression de mon profond respect.

V/Doyenne Chargée de la PGRS

ناتبة العميدة مكلفة بما بعد التدرج
والبحوث العلمي والدراسات الخارجية
د. تاريدة ترضة



الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التعليم العالي و البحث العلمي

جامعة البليدة 1

11.0 JUL 2019

مقرر رقم 116 المؤرخ في

يتضمن تصريح بإلقاء أطروحة دكتوراه الطور الثالث
في : البيولوجيا

تخصص: البيولوجيا و الصحة

السيد رئيس جامعة البليدة 1

بمقتضى المرسوم التنفيذي رقم 13-163 المؤرخ في 15 أفريل 2013 المعدل و المتمم للمرسوم التنفيذي رقم 89-137 المؤرخ في 01 أوت 1989 المعدل و المتمم و المتضمن انشاء جامعة البليدة 1 ،
- بمقتضى المرسوم التنفيذي رقم 08-265 المؤرخ في 17 شعبان 1429 الموافق 19 أوت 2008 و المتضمن نظام الدراسات للحصول على شهادة الليسانس ، شهادة الماستر و شهادة الدكتوراه ،
- بمقتضى القرار رقم 191 المؤرخ في 16 جويلية 2012 ، الذي يحدد تنظيم التكوين في الطور الثالث من أجل الحصول على شهادة الدكتوراه،
- بمقتضى مقرر رقم 305 ، الصادر عن وزير التعليم العالي و البحث العلمي بتاريخ 15 أكتوبر 2018 ، المتضمن تعيين السيد **بزينة محمد** ، بصفة مدير ، بالنيابة ، لجامعة البليدة 1 .

يقرر

المادة الأولى : يرخص للسيد (ة) : مناصر آمال
بالقاء أطروحة الدكتوراه المذكور تحت عنوان :

Extraction, caractérisation et identification de quelques métabolites secondaires actifs d'une plante spontanée *Allium triquetum* L, et activités biologiques.

المادة الثانية : تكوين أعضاء لجنة المناقشة من الأعضاء التالية :

الاسم و اللقب	الرتبة	المؤسسة الأصلية	الصفة
قطارني جمال	أستاذ التعليم العالي	جامعة البليدة 1	رئيسا
خالي مصطفى	أستاذ محاضر أ	جامعة البليدة 1	عضوا مناقشا
بوتومي حسين	أستاذ التعليم العالي	جامعة البليدة 1	عضوا مناقشا
حوالي كريم	أستاذ التعليم العالي	جامعة تيزي وزو	عضوا مناقشا
سعيدي فيروز	أستاذ التعليم العالي	جامعة البليدة 1	مقرا و مشرفا

المادة الثالثة : يكلف عميد كلية علوم الطبيعة و الحياة بتنفيذ هذا المقرر الذي سينشر في النشرة الرسمية لجامعة البليدة 1

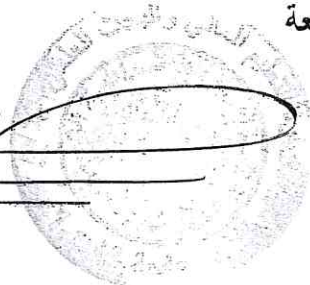
11.0 JUL 2019

البليدة في :

مدير الجامعة

مدير جامعة البليدة - 1 بالنيابة

ب. ب. ب. محمد



الجمهورية الجزائرية الديمقراطية الشعبية
REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE

MINISTERE DE L'ENSEIGNEMENT SUPERIEUR
ET DE LA RECHERCHE SCIENTIFIQUE

وزارة التعليم العالي والبحث العلمي

Université de Blida 1



جامعة البليدة

Faculté des Sciences de la Nature et de la Vie

كلية علوم الطبيعة والحياة

B.P : 270 -Route De Soumâa – Blida

ص.ب: 270 -طريق الصومعة – البليدة

Service de la Post –Graduation et de la Recherche Scientifique



Ref *LS* /FSNV/PGRS/2019

Blida le : 26/05/2019

INVITATION

A
L'attention du Professeur
BOUTOUMI H

Monsieur,

*Dans le cadre de l'obtention du diplôme de Doctorat LMD en biologie vous êtes
cordialement invité en tant que président de jury à la soutenance de :*

Melle OUAHCHIA Celia qui aura lieu le jeudi 30/05/2019 à 09h : 00h à l'Université

**Blida1, Faculté des Sciences de la Nature et de la Vie (SNV) (Salle de Soutenance du département de
Biotechnologies**

*Dans l'attente de vous voir parmi nous, veuillez accepter Monsieur l'expression de mon profond
respect.*

V/Doyenne Chargée de la PGRS

تأيد العيادة مكلفة بما بعد التدبير
بالتعاون مع العلاقات الخارجية
د. شافية شرفية





Service de la Post -Graduation et de la Recherche Scientifique

Réf: /PGRS/FSNV/22018

Blida le : 26/11/2018



A
L'attention du Professeur
BOUTOUMI Hocine

Objet : **Expertise de la thèse de doctorat de**

Mr BERDJA Rafik

Monsieur,

*En vue de l'obtention du titre de Docteur, nous avons l'honneur de vous informer que, le conseil scientifique de la faculté des sciences de la nature et de la vie réuni le 15 juillet 2018, vous désigne pour évaluer scientifiquement la thèse de doctorat de **Mr BERDJA Rafik***

Pour cela, je vous demande de bien vouloir remettre le rapport d'expertise annexe 5 (copie-jointe) sous pli fermé au service de la PGRS de la faculté dans un délai n'excédant pas les 60 jours

Je vous prie Monsieur de croire à l'assurance de ma considération distinguée.

Vice Doyenne chargée de la PGRS

الجامعة الجزائرية للدراسات والبحوث والعلوم الطبيعية والحياة
مكتبة بومهد العلمة
والبحوث العلمي والعلاقات الخارجية
د. شافية شريعة



Service de la Post-Graduation et de la Recherche Scientifique

Réf : /FSNV/PGRS/2018

Blida, le

A

**L'attention du Professeur
BOUTOUMI Hocine**

Objet : Invitation

Monsieur ,

*Dans le cadre de l'habilitation universitaire, nous avons l'honneur de vous inviter à assister à la soutenance du **Dr DEBIB Aicha**, qui aura lieu le 09/01/2019 à 09h. à la salle de soutenance de biologie pavillon 2*

Dans l'attente de vous voir parmi nous, je vous prie Monsieur de croire à l'assurance de ma parfaite considération.

Vice Doyenne Chargée

de la PGRS



République Algérienne Démocratique et Populaire

**Ministère de l'enseignement supérieur
et de la recherche scientifique**

**Université
Yahia Fares de Médéa**

Faculté de la Technologie



وزارة التعليم العالي والبحث العلمي

جامعة يحي فارس بالمدينة

كلية التكنولوجيا

**نيابة عمادة الكلية لما بعد التدرج والبحث العلمي
و العلاقات الخارجية**

**Vice décanat chargé de la Post-Graduation, de la
Recherche Scientifique et des Relations Extérieures**

N°26/PGRSRE/FT/18-19

MEDEA Le : 21/11/2018

A Monsieur Le Professeur Boutoumi Hocine

Université de Blida

Objet : Expertise d'une thèse de doctorat

Monsieur,

En vertu de la résolution du conseil scientifique adoptée lors de sa réunion du **15 novembre 2018**, inhérente à l'expertise et l'évaluation des travaux rentrant dans le cadre des soutenances de thèse de doctorat, vous êtes désigné membre de jury examinateur

J'ai l'honneur de vous solliciter de bien vouloir expertiser la thèse du doctorante **M^{me}. Megatli Sara**, intitulé : « **Extraction des Métabolites secondaires d'untérêt pharmaceutique par des techniques émergents : caractéristique et application** »

Cordialement,



LE VICE DOYEN

**نائب عميد كلية التكنولوجيا بالمدينة
بعد التدرج والبحث العلمي والعلاقات الخارجية**

د. بلحاج عبد المنعم



Service de la Post –Graduation et de la Recherche Scientifique

Réf : 98 /PGRS/FSNV/2018

Blida le : 10/09/2018

A

**L'attention du Professeur
BOUTOUMI HOUCINE**

Objet : **Expertise de la thèse de doctorat de
Melle OUAHCHIA Celia**

Monsieur,

*En vue de l'obtention du titre de Docteur, nous avons l'honneur de vous informer que, le conseil scientifique de la faculté des sciences de la nature et de la vie réuni le 16 mai 2018, vous désigne pour évaluer scientifiquement la thèse de doctorat de **Melle OUAHCHIA Celia***

Pour cela, je vous demande de bien vouloir remettre le rapport d'expertise F5 (copie-jointe) sous pli fermé au service de la PGRS de la faculté dans un délai n'excédant pas les 45 jours.

Je vous prie Monsieur de croire à l'assurance de ma considération distinguée.

Vice Doyenne chargée de la PGRS

ناتبة العميدة مكلفة بما بعد التدريس
والبحث العلمي والعلاقات الخارجية
د. شأوية شرفية



وزارة التعليم العالي والبحث العلمي

جامعة البليدة 1

02 DEC 2018

مقرر رقم 11 المؤرخ في

يتضمن الترخيص بالمناقشة أمام لجنة التأهيل الجامعي
في: البيولوجيا

السيد رئيس جامعة البليدة 1

- بمقتضى المرسوم التنفيذي رقم 13-163 المؤرخ في 15 أفريل 2013 المعدل والمتمم للمرسوم التنفيذي رقم 89-137 المؤرخ في 01 أوت 1989 المعدل والمتمم والمتضمن إنشاء جامعة البليدة 1.
- بمقتضى المرسوم رقم 98-254 المؤرخ في 24 ربيع الثاني عام 1419 الموافق ل 17 أوت 1998 الخاص بالتكوين الدكتوراه والتأهيل الجامعي والدراسات فيما بعد التدرج المتخصص لاسيما المادة 113.
- بمقتضى المقرر رقم 521 المؤرخ في 05 سبتمبر 2013 المحدد لكيفيات تطبيق التأهيل الجامعي.
- بمقتضى المقرر رقم 305 الصادر عن وزير التعليم العالي والبحث العالي بتاريخ 15 أكتوبر 2018 المتضمن تعيين السيد بزينة محمد، بصفة مدير، بالنيابة، لجامعة البليدة 1.
- بناء على التقرير الإيجابي لأعضاء لجنة المناقشة.

يقرر

المادة 1: يرخص للسيدة: ديبب عائشة بالتقدم أمام لجنة تحكيم التأهيل الجامعي في التخصص المذكور أعلاه.

المادة 2: يتكون أعضاء لجنة التحكيم للمناقشة من:

رئيسا	جامعة البليدة 1	أستاذة التعليم العالي	سعيد فيروز
عضوا	جامعة البليدة 1	أستاذ التعليم العالي	بوتومي حسين
عضوا	جامعة عنابة	أستاذة التعليم العالي	جدي سماح
مدعوا	جامعة البليدة 1	أستاذة محاضرة (أ)	مكلات عتيقة
مدعوا	جامعة البليدة 1	أستاذ التعليم العالي	باديس عبد المالك
مدعوا	جامعة تيارت	أستاذ التعليم العالي	عقاد حبيب

لتقييم وتقدير نوعية الأعمال العلمية للمرشح وتدوينها في شكل مقرر.

المادة 3: تكلف عميدة كلية العلوم الطبيعية والحياة بتنفيذ هذا المقرر الذي سينشر في النشرة الرسمية لجامعة البليدة 1.

02 DEC 2018 البليدة في:

مدير الجامعة
جامعة البليدة 01

بازينة محمد
بازينة محمد



Université Saad Dahlab Blida 1



Attestation de participation
DÉCERNÉE À
KOUACHE Amel

En reconnaissance de sa participation active au Séminaire National de Génie des Procédés qui a eu lieu du 07 au 08 novembre 2018 (SNGP2018) à l'Université Saad Dahlab Blida 1, par une communication sous forme **Poster**, dont l'intitulée :

ÉTUDE ÉLECTROCHIMIQUE DE LA CORROSION D'UN ACIER AU CARBONE PAR UN INHIBITEUR VERT DANS HCL 1M.

Co-Auteurs: A. Khelifa, H. Boutoumi, A. Haddad, A. Feghoui

PRÉSIDENTE DU SNGP2018

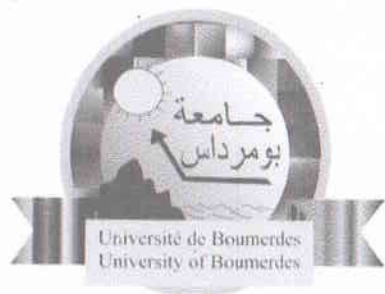
Présidente Comité
d'Organisation SNGP 2018

Pr. A. HADJ ZIANE

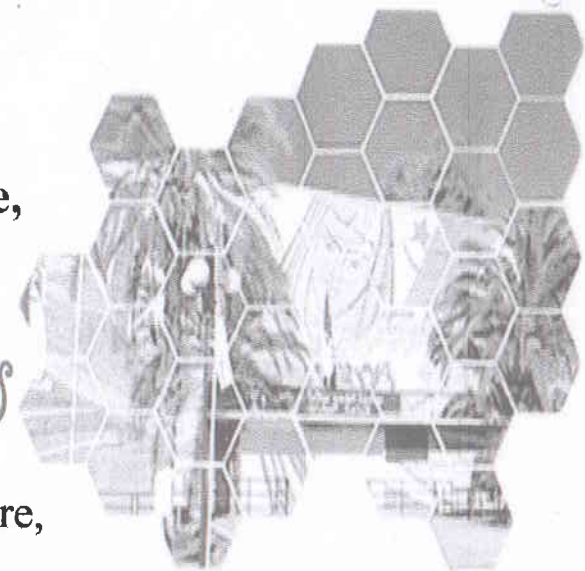


07-08 NOVEMBRE 2018

RÉPUBLIQUE ALGÉRIENNE DÉMOCRATIQUE ET POPULAIRE
MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITÉ M'HAMED BOUGARA – BOUMERDES
FACULTÉ DES SCIENCES
DÉPARTEMENT DE CHIMIE
en collaboration avec le
LABORATOIRE DE TECHNOLOGIE ALIMENTAIRE



1^{ère} Journée Nationale de l'Agro-alimentaire,
Engineering et environnement
-Le 16 Avril 2017-



ATTESTATION


Le comité d'organisation de la 1^{ère} Journée Nationale de l'Agro-alimentaire,
Engineering et Environnement, atteste que :

Mme **Menacer Amel** a présenté une *Communication Affichée* intitulée

« *Macro and micro-elements of leaves and bulbs of the Algerian Allium Plant
(Allium triquetrum L.)* »

Co-auteur: Saïdi F.

La Présidente du séminaire


Mme. YAHIAOUI Kerima
Présidente JNAEE - 2017


2017
JNAEE



REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
MINISTRE DE L'ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITE DE GHARDAÏA
FACULTE DES SCIENCES DE LA NATURE ET DE LA VIE ET SCIENCES DE LA TERRE
SEMINAIRE NATIONALE SUR LES PLANTES SPONTANÉES
LE 15 NOVEMBRE 2017



ATTESTATION DE PARTICIPATION

Le président du comité d'organisation du Séminaire National sur les Plantes Spontanées (SNPS 2017) atteste que :

Mme/Mlle/M. MENACER Amel a présenté une communication affichée Intitulée :

Etude de la composition chimique des extraits de bulbes d'une plante spontanée et Endémique en Algérie

Allium triquetrum L.

Coauteur(s) : SAIDI F.

Doyen de la faculté SNVSNT



عميد كلية
علوم الطبيعة و الحياة و علوم الأرض
بشهر حسن

Président du comité d'organisation

الأستاذ : بن خراطة صالح
رئيس لجنة تنظيم المنتدى
SNPS 2017



الجمهورية الجزائرية الديمقراطية الشعبية
 REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
 وزارة التعليم العالي والبحث العلمي
 MINISTERE DE L'ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE SCIENTIFIQUE
 جامعة سعيد داهل بلديا 1
 UNIVERSITE SAAD DAHLEB BLIDA 1
 كلية علوم الطبيعة والحياة
 FACULTE DES SCIENCES DE LA NATURE ET DE LA VIE
 قسم بيولوجيا الجمادات الكائنات الحية
 DEPARTEMENT DE BIOLOGIE DES POPULATIONS DES ORGANISMES
 LABORATOIRE DE BIOTECHNOLOGIE, ENVIRONNEMENT ET SANTE



Attestation de participation

1^{ER} SEMINAIRE NATIONAL « PHYTOTHERAPIE & SANTE »

Blida les 16, 17 et 18 mai 2017



Le comité d'organisation atteste que **Mme MENACER Amel** a participé aux travaux du séminaire avec une communication orale intitulée

Etude de la composition chimique de l'extrait méthanolique des feuilles d'une plante algérienne *Allium triquetrum* L. par CG-MS
MENACER Amel et Saidi fairouz

La Doyenne

La Chef de Département BPO

La Directrice du laboratoire BES

La présidente du comité d'organisation





الجمهورية الجزائرية الديمقراطية الشعبية
REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
وزارة التعليم العالي و المعهد العالي
MINISTERE DE L'ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE SCIENTIFIQUE
جامعة سعد حطلم بلديدة 1
UNIVERSITE SAAD DAHALB BLIDA 1
كلية علوم الطبيعة والحياة
FACULTE DES SCIENCES DE LA NATURE ET DE LA VIE
قسم بيولوجيا الجماعات والكائنات الحية
DEPARTEMENT DE BIOLOGIE DES POPULATIONS DES ORGANISMES
LABORATOIRE DE BIOTECHNOLOGIE, ENVIRONNEMENT ET SANTE



Attestation de participation

1^{ER} SEMINAIRE NATIONAL « PHYTOTHERAPIE & SANTE »
Blida les 16, 17 et 18 mai 2017



Le comité d'organisation atteste que **Mme DJORI Amel** a participé aux travaux du séminaire avec une communication affichée intitulée

Évaluation de l'efficacité d'une macrophyte aquatique Pour le traitement des eaux polluées.
DJORI. Amel, DJORI. Louisa, Boutoumi Houcine.

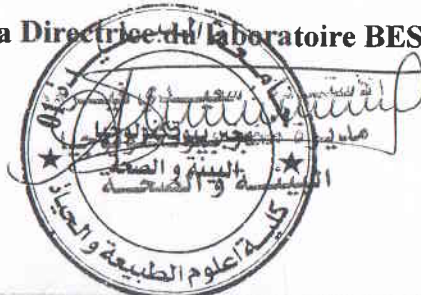
La Doyenne



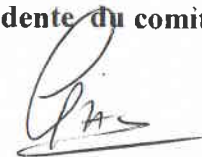
La Chef de Département BPO



La Directrice du Laboratoire BES



La présidente du comité d'organisation



CERTIFICATE OF ATTENDANCE



The CIBSDD 2017 organizing committee confirms the participation
Of Taleb.F Co-authors :Moulaï-mostefa.N, Boutoumi H and boussbel.L

With Poster Communication: Bioremediation d'un effluent industriel contenant du bleu cibacette, a l'aide
d'un consortium de microorganismes issus de la betterave rouge.

At The First International Congress On Biotechnologies For Sustainable Development

CIBSDD 2017 BOMERDES ALGERIA 24-25 OCTOBER

Organizing Committee Chair

Pr. SAHIR-HALOUANE.F

Pr. SAHIR HALOUANE.F

Présidente
CIBSDD 2017



Université Saad Dahlab Blida 1



Attestation de participation
DÉCERNÉE À
KOUACHE Amel

En reconnaissance de sa participation active au Séminaire National de Génie des Procédés qui a eu lieu du 07 au 08 novembre 2018 (SNGP2018) à l'Université Saad Dahlab Blida 1, par une communication sous forme Poster, dont l'intitulée :

ÉTUDE ÉLECTROCHIMIQUE DE LA CORROSION D'UN ACIER AU CARBONE PAR UN INHIBITEUR VERT DANS HCL 1M.

Co-Auteurs: A. Khelifa, H. Boutoumi, A. Haddad, A. Feghoul

PRÉSIDENTE DU SNGP2018

Présidente Comité
d'Organisation SNGP 2018
Pr. A. HADJ ZIANE



07-08 NOVEMBRE 2018

Protection d'un acier au carbone contre la corrosion acide par un inhibiteur vert

A. Kouache^{1,2}, A. Khelifa², H. Boutoumi², A. Haddad¹, S. Bouyegh¹, A. Feghoul¹, B. idir¹, A. labe¹, A. Azzeddine¹.

¹ - Research Center in Industrial Technologies CRTI, P.O.BOX 64, Cheraga 16014, Algiers, Algeria

^{1,2} Laboratoire de Génie chimique, Département de Génie des Procédés, Faculté de Technologie, Université de Blida I, BP 270, Route de Soumaâ, 09000, Blida, Algérie

Email : kouacheamel@yahoo.fr, a.kouache@csc.dz

Les pertes par corrosion, représentent une composante importante du pourcentage des pertes technologiques dans diverses industries impliquant un nettoyage acide [1]. En termes de protection, les inhibiteurs constituent un moyen pratique et économique pour lutter contre la corrosion [2]. Cependant, la mise au point d'inhibiteurs de corrosion non toxiques et biodégradables devient un enjeu primordial. Les extraits de plantes sont devenus importantes comme source d'inhibition écologiquement acceptable, facilement disponible et utilisable pour une vaste gamme de prévention de la corrosion [3].

L'objectif de ce travail consiste à étudier l'action inhibitrice d'une substance verte et naturelle à base de plante, sur le comportement à la corrosion de l'acier au carbone X 70 largement utilisé dans la construction des pipelines, dans HCl 1M, en utilisant différentes techniques électrochimiques. Les résultats obtenus montrent que l'inhibiteur est doté d'un pouvoir inhibiteur appréciable, et le caractère dominant dans notre cas traduit une cinétique de transfert de charge.

Mots clés : *acier, corrosion, plante, techniques électrochimiques, efficacité inhibitrice.*

Références

[1]. A. Ongun Yüce, B. Dogru Mert, G. Kardas, B. Yazici, Electrochemical and quantum chemical studies of 2-amino-4-methyl-thiazole as corrosion inhibitor for mild steel in HCl solution, Corrosion Science 83 (2014) 310–316.

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الجمهورية الجزائرية الديمقراطية الشعبية
République Algérienne Démocratique et Populaire
وزارة التعليم العالي والبحث العلمي
Ministère de l'Enseignement Supérieur et de la Recherche Scientifique
Université Ibn Khaldoun – Tiaret



Faculté des Sciences de la Nature et de la Vie
Laboratoire d'Agro-Biotechnologie et de Nutrition des zones arides et semi-arides
*Journée Scientifique Nationale sur La Recherche et la Valorisation des Plantes d'Intérêts
Ecologique, Economique et Patrimonial*
Le 06 Octobre 2018

ATTESTATION DE PARTICIPATION

Le comité scientifique de la Journée atteste que :

Melle/Mme/Mr : **DRIOUCHE Asma.**

A présenté une communication orale

Co-auteurs : BOUTOUMI. H , LETTREUCHE. H.

Intitulée : **Extraction, caractérisation et intérêt biologique des furocoumarines à partir de la plante « Rutamontana».**

Le Président du comité Scientifique
Dr. MIARA Mohamed Djamel


Univ. I. K. Tiaret
F. SNV - LABNZA
06-10-2018

Le Doyen de la Faculté
Pr. Abdelatif NIAR


وزارة التعليم العالي والبحث العلمي
جامعة تيارت
الأستاذة: ليلى عبد اللطيف

Directeur du laboratoire ABNZAS
Pr. Dellal Abdelkader


مسدير المحبير
ع. دلال



Université Saad Dahlab Blida 1



Attestation de participation
DÉCERNÉE À
DRIOUECHE Asma

En reconnaissance de sa participation active au Séminaire National de Génie des Procédés qui a eu lieu du 07 au 08 novembre 2018 (SNGP2018) à l'Université Saad Dahlab Blida 1, par une communication sous forme **Poster**, dont l'intitulée :

ÉTUDE DE L'ÉFFET SYNERGIQUE DE L'HYDROPHOBISATION DE L'HUILE ÉSSentielle DE L'ARTEMISIA JUDICA PAR THIONATION.

Co-Auteurs: Hocine BOUTOUMI

PRÉSIDENTE DU SNGP2018

07-08 NOVEMBRE 2018

Présidente Comité
d'Organisation SNGP 2018

Pr. A. HADJ ZIANE





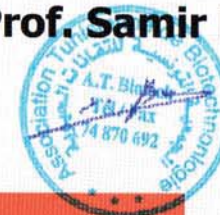
Participation Certificate

The organizers of the 16th International Days of Biotechnology (IDB2017) certify that Mr. /Mrs. /Miss. **DRIOUECHE Asma** participated in this scientific event with poster communication entitled «*Synthesis, characterization and valorization of biosurfactant from essential oil of Ruta montana L.*».

Number :180

Chairman

Prof. Samir BEJAR



Yasmine Hammamet, Tunisia, 18-22 December 2017

République Algérienne Démocratique et Populaire
 Ministère de l'Enseignement Supérieur et de la Recherche Scientifique
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 ÉVALUATION DES NOUVEAUX PROJETS DE RECHERCHE UNIVERSITAIRE
État d'agrément

Etablissement: Université Blida 1

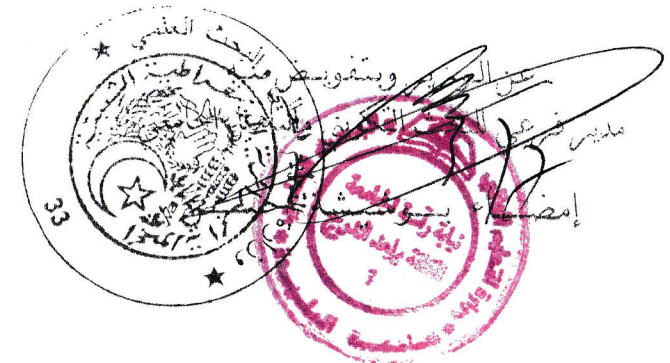
Session: 2018

Domaine: SCIENCES DE LA NATURE ET DE LA VIE

Filière: Biotechnologies

Intitulé du Projet	Chef de Projet	Membres de l'équipe	Grade	Observations
Applications Biotechnologiques pour une agriculture durable	Mme. AMMAD Faiza Grade: MCA	M. Boutoumi Hocine Mme. Haçj-Sadok ep. Nebih Dhaouya M. Dahel Abdelghani Mme. Mekhaldi Delel M. YALA ANIA	PR MAB Doctorant Doctorant Doctorant	- Projet agréé à partir du : 01/01/2018 - Durée du projet: 04 ans - Code de projet: D00L05UN090120180002

PRA09





Contents lists available at ScienceDirect

Applied Catalysis B: Environmental

journal homepage: www.elsevier.com/locate/apcatb

Photocatalytic activity of mont-La (6%)-Cu_{0.6}Cd_{0.4}S catalyst for phenol degradation under near UV visible light irradiation



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ARTICLE INFO

Article history:

Received 26 December 2016

Received in revised form 28 March 2017

Accepted 29 March 2017

Available online 9 April 2017

Keywords:

Photocatalysis

Semiconductor sulfides

Phenol

UV-vis

Pollution abatement

Persistent organic pollutants

Modified clays

Montmorillonite

Nanocomposites

ABSTRACT

A mont-La (6%)-Cu_{0.6}Cd_{0.4}S nanocomposite was prepared by a simple cation exchange and impregnation method and its application for the phenol removal from wastewater was studied. The photocatalyst was characterized by X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDS) and UV-vis diffuse reflectance spectroscopy (UV-vis DRS). Phenol in aqueous solution was used as a model compound for evaluation of near UV-vis (filter cut-off for $\lambda \geq 366$ nm) photocatalytic activity. We have studied the following parameters: load of photocatalyst, load of phenol, pH, [O₂], and irradiation wavelength. Within 240 min, heterogeneous suspensions of 1 g·L⁻¹ of mont-La (6%)-Cu_{0.6}Cd_{0.4}S nanocomposite allowed removal of ca. 86% of 20 mg·L⁻¹ solution of phenol at pH = 5.44, with dissolved oxygen from air, with 77.8% TOC removal. The kinetics of photocatalytic transformation followed the Langmuir-Hinshelwood kinetic model. Pseudo-first-order kinetics adequately fitted the experimental data and the obtained rate constants are reported. With the mont-La (6%)-Cu_{0.6}Cd_{0.4}S catalyst 84% removal of phenol degradation efficiency was achieved after five consecutive photocatalytic cycles. Twelve main photoproducts were observed from phenol photodegradation, using HPLC-MS. The used photocatalyst is promising for green chemistry use in abatement of persistent organic pollutants.

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1. Introduction

The release of toxic and persistent organic pollutants (POPs) into the aquatic environment is a matter of growing concern, and addressing this issue for remediation is considered to be an urgent environmental need [1]. Many persistent organic pollutants, which are highly toxic and hazardous to human health and ecosystems, are present in industrial wastewaters from chemical factories [2], and are responsible for contamination of ground and surface water [1]. The biodegradability of these compounds is usually very low, leading to their accumulation in the environment [2].

Among POPs, phenol and its derivatives are generally considered as some of the most relevant organic pollutants discharged into the environment, considered by the US EPA as some of the

most pollutant compounds, causing considerable damage to human health and to the ecosystems [3] and recognized as carcinogenic compound [4]. Phenols are harmful to living organisms even at low concentrations [5]. They are easily absorbed through the skin and mucous membranes, and toxic to different organs and tissues: lungs, liver, kidneys, and genitourinary system [6]. They are released from herbicides, pesticides, textiles, dyes, paints, oil refining, coal conversion, plastics, pharmaceutical, chemical, agrochemical, and petrochemical industries, etc. [3,7–10]. Phenol, with rather high solubility [11], causes unpleasant taste and odor of drinking water [5,12].

For all the above mentioned reasons, phenols have been listed as priority pollutants for degradation by many governmental environmental agencies [4]. It has become a challenge to achieve an effective removal of this POP from wastewater, to minimize risks. Consequently, considerable efforts have been devoted to develop suitable treatment methods that can easily get rid of these highly recalcitrant POPs [12].

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“Gheorghe Asachi” Technical University of Iasi, Romania



ENHANCED COAGULATION FOR ALGAE REMOVAL IN A TYPICAL ALGERIA WATER TREATMENT PLANT

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Abstract

This work aims to study the physicochemical and biological parameters of Boukerdene Dam's water and treated water at different steps of the treatment processes in Sidi-Amar's Station (Tipaza, Algeria) with a particular interest to the phytoplankton. This work is also related to the demonstration of the enhanced coagulation (EC) process as an efficient method in algae and organic matter (OM) removal from surface water by its application in jar tests. The diversity of the phytoplankton shows the presence of 21 genera comprising 30 algae species out of 8 samples taken from the Boukerdene Dam. Among the identified genera, seven of them are responsible for the unpleasant tastes and odours of water; six others are responsible for filter fouling. Generally, the conventional drinking water treatment processes employed at this water treatment plant shows a limited efficiency of OM and algae removal. The novelty of this work is that the jar tests of EC (pH 6 and alum dose 15 mg L⁻¹) as only one stage of water treatment, without chlorination and filtration, improve the removal of OM and algae at 97 to 99%, respectively.

Keywords: algae, bacteria, enhanced coagulation (EC), natural organic matter (NOM), surface water

Received: February, 2013; Revised final: February, 2014; Accepted: February, 2014

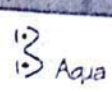
1. Introduction

Since trihalomethanes (THMs) were found in disinfected water using chlorine in the 1970s by Rook (1974), disinfection by-products (DBPs) have become a center of awareness in water treatment. In fact, more than 700 species of DBPs have been affirmed. Among DBPs, THMs and haloacetic acids (HAAs) were the two DBP groups detected at the greatest levels and most frequently found in disinfected water using chlorine through the world (Hong et al., 2013). In addition, the important DBP precursor was usually suggested to be natural organic matter (NOM). NOM is known as the complicated

matrix of naturally existing organic materials detected in natural waters (Boucherit et al., 2015; Ghernaout et al., 2011; Ghernaout and Boucherit, 2015). Indeed, the NOM may notably influence several features of water treatment, comprising the coagulation efficiency and disinfectants use (Ghernaout et al., 2010a). Consequently, NOM impacts drinking water quality by participating in DBPs formation, biological re-growth in the distribution system, colour, taste, and odour generation (Chen et al., 2008; Wang et al., 2013).

In Algeria (North of Africa), it is well known that water resources are basically surface waters (Ghernaout et al., 2010b). In Tipaza City (North of

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Université De Carthage - Tunisie
L'Institut National des Sciences et Technologies de la Mer
Laboratoire de Biotechnologie et Biodiversité Aquatiques
Institution de la Recherche et de l'Enseignement Supérieur Agricoles

1er Colloque International Bio-ressources et Économie Bleue et Verte

ATTESTATION

Le Comité d'Organisation du Premier Colloque International de Bioressources et Economie Bleue et Verte tenu à Hammamet - Tunisie du 26 au 29 avril 2018, certifie que :

Mme MOGHNI Nassiba

A présenté une communication Affichée intitulée :

Treatment of polluted water using heterogenous photocatalysis

Co-auteur; H.Khalaf



Président de Séance

Présidentes du Colloque

Du 26 au 29 Avril 2018
à l'hôtel les colombes Hammamet - Tunisie

Université Saad Dahlab Blida 1



Attestation de participation
DÉCERNÉE À
MOGHNI Nassiba

En reconnaissance de sa participation active au Séminaire National de Génie des Procédés qui a eu lieu du 07 au 08 novembre 2018 (SNGP2018) à l'Université Saad Dahlab Blida 1, par une communication sous forme Poster, dont l'intitulé :

INVESTIGATION OF LIGHT ON POLLUTED WATER PHOTODEGRADATION.

Co-Auteurs: Hussein Khalaf

PRÉSIDENTE DU SNGP2018

07-08 NOVEMBRE 2018
Pr. A. MADZIANE
Présidente Comité Organisation SNGP 2018

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Faculté des Sciences



CNCM

02 > 03 Juillet 2019

Attestation de Participation

Le président de la **Conférence Nationale sur la Chimie des Matériaux,**

Tenue à l'Université M'hamed Bougara-Boumerdes, les **02** et **03** Juillet 2019, Atteste que

Nassiba Moghni

a présenté une communication intitulée

VALORISATION OF ALGERIAN BENTONITE IN WATER TREATMENT

Co-auteur: H.Khalaf

Boumerdès le : 02/07/2019

Dr. IREKT Amar

[Signature]
Président de la CNCM



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Ministère de l'Enseignement Supérieur et de la Recherche Scientifique
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Université M'Hamed Bougara Boumerdes
Faculté des Sciences
Département Chimie



Certificate of Participation

This is to certify that

MOGHNI Nassiba

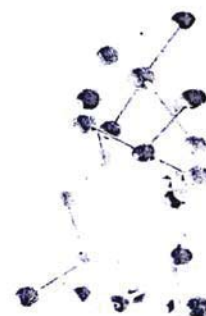
Has successfully participated in the
International Symposium on Materials Chemistry

19-21 March 2018, Boumerdes - Algeria

With a Poster presentation entitled:

"Elaboration of a highly active nano-material for water treatment"

Co-authors: H. Khalaf



Université Saad Dahlab Blida 1



Attestation de participation
DÉCERNÉE À
Pr. BOUTOUMI Houcine

En reconnaissance de sa participation active au Comité Scientifique du Séminaire National de Génie des Procédés qui a eu lieu du 07 au 08 novembre 2018 (SNGP2018) à l'Université Saad Dahlab Blida 1.

PRÉSIDENTE DU SNGP2018

07-08 NOVEMBRE 2018

Présidente Comité
d'Organisation SNGP 2018
Pr. A. HADI ZIANE


Présidente Comité
d'Organisation SNGP 2018
Pr. A. HADI ZIANE