Active Member
Dr. Rodrigo González Enríquez

Leader of the Research Group
Dr. Germán Eduardo Dévora

Active Member
Dr. Jesús Álvarez Sánchez

Investigation Group CA-036

Water Treatment and Alternative Technology

Collaborators


Dra. Reyna Guadalupe Sánchez Duarte


Dra. María del Rosario Martínez Macías


Dra. María Magdalena Armendaríz Ontiveros


Dra. Ma. Araceli Correa Murrieta

Investigation Group: Water Treatment and Alternative Technology

Researcher	Major Academic degree	Member of the national system of researchers	Teacher in accredited program of chemical engineer
Germán Eduardo Dévora Isiordia	Dr.	SNI-1	X
Jesús Alvarez Sánchez	Dr.	SNI-1	X
Rodrigo González Enríquez	Dr.	--	X
Reyna Guadalupe Sánchez Duarte	Dra.	SNI-1	X
María del Rosario Martínez Macías	Dra.	SNI-1	X
Ma. Araceli Correa Murrieta	Dra.	SNI-1	X
María Magdalena Armendáriz Ontiveros	Dra.	SNI-C	X
TOTAL	**100 %**	**86 %**	**100 %**

Instituto Tecnologico de Sonora

Natural Resources

Departament: Water Sciences and Environmental

Educational Program Chemical Engineer

Research Laboratories

1. **Dr. Germán Eduardo Dévora Isiordia**
   Desalination of brackish and marine waters with Renewable Energies
2. **Dr. Jesús Álvarez Sánchez**
   Polymers and materials
3. **Dr. Rodrigo González Enríquez**
   Hydrogeochemical and Environmental Explorations
4. **Dra. Reyna Guadalupe Sánchez Duarte**
   Biopolymers
5. **Dra. María del Rosario Martínez Macías**
   Biopolymers and phytoremediation with microalgae
6. **Dra. Ma. Araceli Correa Murrieta**
   Bioadsorbents
7. **Dra. Maria Magdalena Armendariz Ontiveros**
   Dynamic Biosystems and Renewable Energies

Research Laboratory:

Desalination of brackish and marine waters with Renewable Energies

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AUTHORIZED PROJECTS

CONACYT

Operation, analysis of the problem and pollution generated in desalination plants located in the Mexican Republic, in order to determine the regulations applicable to this item

Períod:

2007-2010

Amount:

$197,000 USD

Benefits to ITSON

$ 107,000 USD

A reverse osmosis desalination plant 150 m^3/d was acquired

Agricultural productive projects are elaborated in Yaqui Valley

Products

Before Desalination plant

Brackish water well

4,000 mg/L Salinity

Yield: **22 Ton/Ha** **7.5 Ton/Ha** **27 Ton/Ha** **4 Ton/Ha**

Tomato

Sorghum

Mango

Ricinus Communis

Products

After Desalination plant

Brackish water well 4,000 mg/L

Reverse Osmosis

300 mg/L

Tomato

Sorghum

Mango

Ricinus Communis

		Tomato	Sorghum	Mango	Ricinus Communis
Before:	Yield:	**22 Ton/Ha**	**7.5 Ton/Ha**	**27 Ton/Ha**	**4.1 Ton/Ha**
After:	Yield:	**24 Ton/Ha**	**9.0 Ton/Ha**	**29 Ton/Ha**	**5.3 Ton/Ha**

Innovation stimulus program (PEI)

(CONACYT)

Prototype development of solar desalination plant, for rehabilitation of salitrated wells on the coast of Hermosillo, Sonora; Mexico

Período:

2015-2016

Monto:

$ 198,000 USD

Delivered Products

Reverse Osmosis Desalination Plant

RO = 40 m^3/d

Delivered Products

Solar Park ITSON 120 kWh

3 Generation System

24 Panels in fixed system ~ 30 kWh
36 Panels in 1 axis system ~ 40 kWh
24 Panels in 2 axis system ~ 50 kWh

Future International Research
postdoctoral products

HEAT TRANSFER
- Storage Heat
- Phase Change Materials
- Solar Desalination Tower
- Corrosion

PROCESS HEAT
- Photovoltaic
- Direct Currently
- Reverse Osmosis
- Desalination Plant Managment

INSTITUTO TECNOLÓGICO DE SONORA
Educar para Trascender

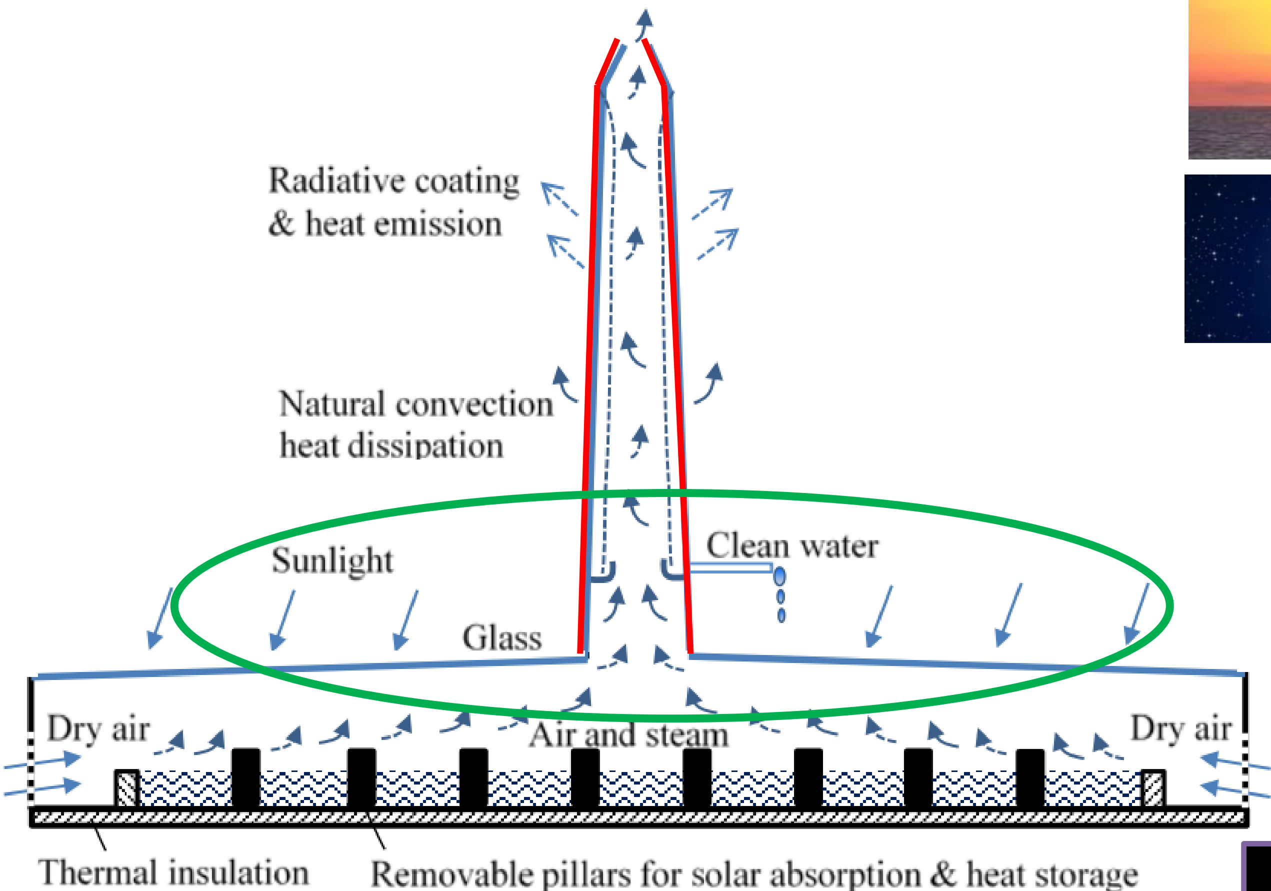
THE UNIVERSITY OF ARIZONA

UNIVERSIDAD DE SONORA
TODO LO ILUMINAN
1942

HEAT TRANSFER

Solar Desalination Tower + Black Blocks + PCM

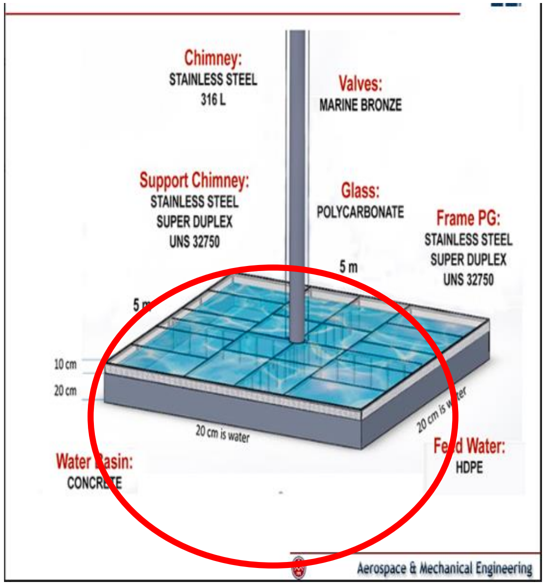
Sonora and Arizona



Heat Storage + Release

PCM = Phase Change Materials

Corrosion



WATER BASIN

COATINGS

Paints and Coatings

Chitosan pearls

Materials

Salt spray chamber

Used for testing the corrosive resistance of products

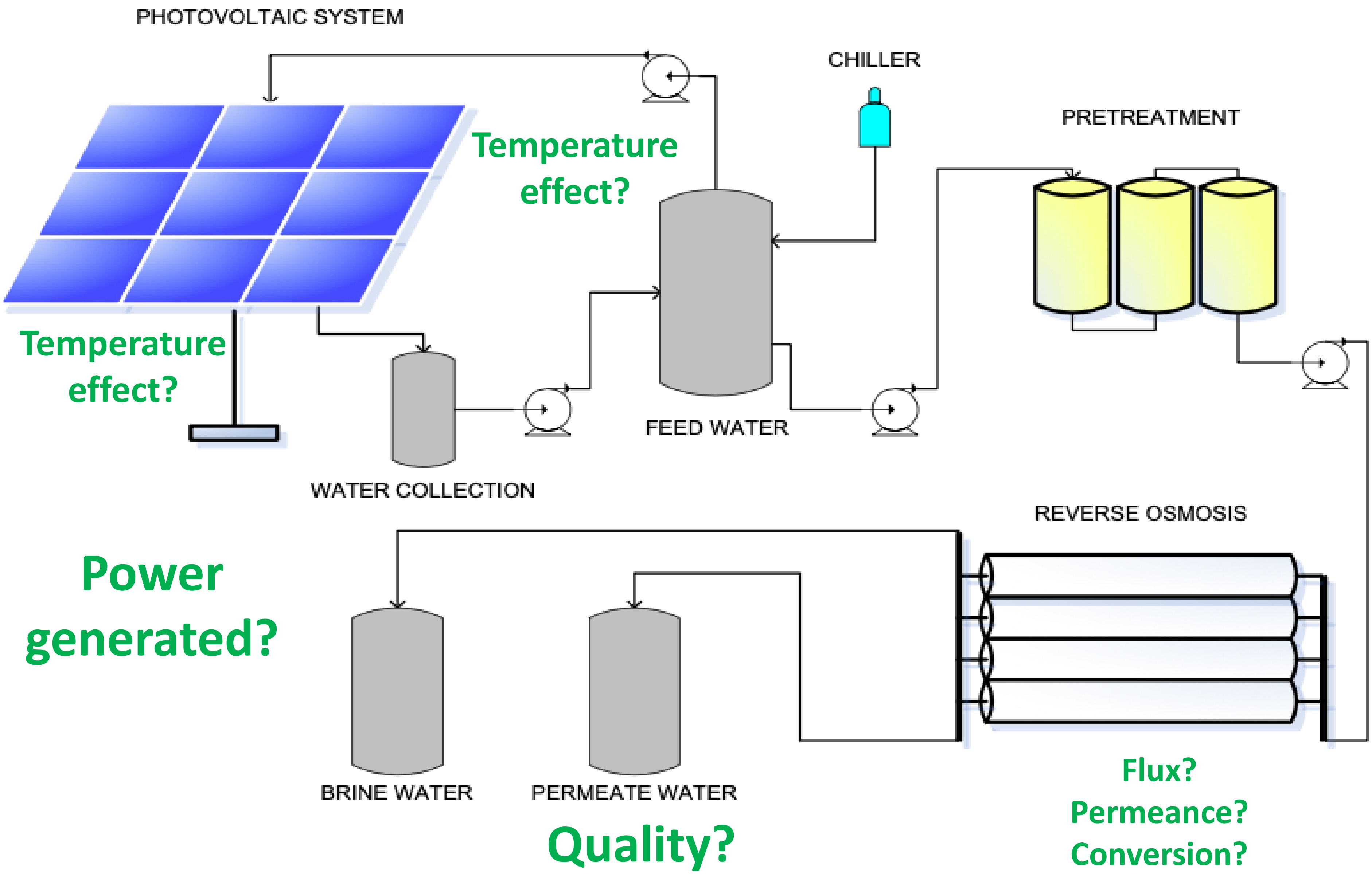
Fog chamber

samples

Coating

- Corrosion
- Time
- Cost
- Decision
- Recycle

PROCESS HEAT



Delivered Products

Open access peer-reviewed chapter

Using Desalination to Improve Agricultural Yields: Success Cases in Mexico

By Germán Eduardo Dévora-Isiordia, María del Rosario Martínez- Macías, Ma. Araceli Correa-Murrieta, Jesús Álvarez-Sánchez and Gustavo Adolfo Fimbres-Weihs

Submitted: November 16th 2017 Reviewed: March 28th 2018 Published: November 5th 2018
DOI: 10.5772/intechopen.76847

IMTA Instituto Mexicano de Tecnología del Agua — Tecnología y Ciencias del Agua

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Inicio > Vol. 4, núm. 3 (2013) > Dévora-Isiordia

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Buscar
Ámbito de la búsqueda: Todo
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- Por título

Evaluación de procesos de desalinización y su desarrollo en México

Germán Eduardo Dévora-Isiordia, Rodrigo González-Enríquez, Saúl Ruiz-Cruz

Resumen

Existen diversos procesos de desalinización y se diferencian por costos, impacto ambiental, calidad del producto y energía consumida. Mediante comparación entre procesos térmicos y de membranas se encontraron las diferentes tecnologías existentes para desalar agua de mar, número de plantas instaladas, tecnología utilizada, fuentes de abastecimiento y uso del agua desalinizada. La factibilidad técnica y principal objetivo del trabajo consistió en la comparación de los sistemas de desalinización térmicos y de membranas respecto a costos de producción

HERRAMIENTAS DEL ARTÍCULO
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Research Article — Open Access — CrossMark

Evaluation of the effect of the salinity of irrigation water on the yield of castor plant hybrids (*Ricinus communis L.*) in Mexico

Abstract

The study consists of evaluating the response of three hybrids of castor plant (*Ricinus communis L.*), Zoya 856, Olga 864 and Galit K-93, to four irrigation treatments at different salt concentrations (2.3, 3.12, 3.9 and 4.68 dS m^{-1}) simultaneously. The objective was to compare the yield between hybrids for each treatment, as well as to determine the effects caused by excess salt in the stages of germination, flowering and growth of the plant. The research was conducted in Block 1916 of the Yaqui Valley, located in the state of Sonora, Mexico. Irrigation water was obtained from a brackish well with 3,900 mg L^{-1} of total dissolved solids adjacent to the study area and subjected to a desalination process by reverse osmosis using a system with an output of $150 m^3 d^{-1}$, equipped with 12 membrane modules (model SWC4-MAX) with dimensions of 0.20mx1.01m. The results showed that the germination and flowering stages were delayed as the concentration of salts increased. In conclusion, the yield of the hybrids increased under irrigation with higher salinity, with the Olga 864 hybrid having the highest production (2.28 ton Ha^{-1} with irrigation of 4.68 dS m^{-1}).

Keywords: castor plant, desalination, reverse osmosis, yield

Volume 2 Issue 5 - 2018

Devora-Isiordia Ge,[1] Valdez-Torres Lc,[1] Granillo-Moreno Ka,[2] Robles-Lizarraga A,[2] Martinez-Macias Mr,[1] Álvarez-Sánchez J[1]
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Received: September 11, 2018 | **Published:** October 22, 2018

IAPE '19, Oxford, United Kingdom
ISBN: 978-1-912532-05-6

Application of Photovoltaic Solar Energy for rehabilitation of saline wells in Hermosillo, Sonora, Mexico

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vhjimeneza@gmail.com

ABSTRACT

Water scarcity takes place when the demand exceeds the supply for fresh water in the given area. The three main aspects that characterize the scarcity of water are: the physical lack of available water to satisfy the demand; the level of development of infrastructure that controls storage, distribution and access; and the institutional capacity to provide the necessary water services. In [...] solar tracking system to increase the efficiency of the photovoltaic system, this to produce >20 cubic meters/day, giving this water production, the feasibility of using the land in disuse for raising livestock, obtaining very efficient results.

Keywords
Solar Desalination, Photovoltaic Energy, Wells Rehabilitation.

deswater.com

EDS European Desalination Society
Dissemination of information about the following European Union Projects

Desalination Publications
Tel. +39.348.8848406, Fax +1 928 5433066
dwt@deswater.com

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SCIENCE AND ENGINEERING

ISSN Print 1944-3994, ISSN Online 1944-3986

The journal is dedicated to research and application of desalination technology, environment and energy considerations, integrated water management, water reuse, wastewater and related topics.

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- Indexed Article Published JCR, SCOPUS,WofS
- Participation in congress
- Thesis Master and phD

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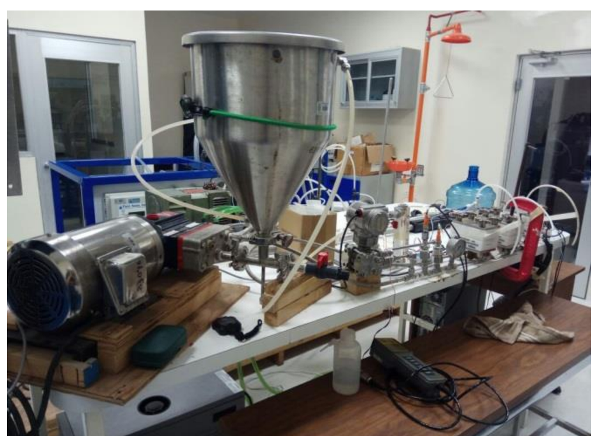
Teaching Professional Development Program (PRODEP)

PREPARATION AND CHARACTERIZATION OF NEW COMPOSITE MEMBRANES CHLORINE RESISTANT AND THEIR APPLICATION IN REVERSE OSMOSIS

Period:
2012-2013

Amount:
$ 25,000 dollars



Funding Infrastructure

(CONACYT)

SCIENTIFIC EQUIPMENT ACQUISITION TO CHARACTERIZE OF COMPOSITE MEMBRANES AND THEIR APPLICATION IN DESALINATION SEA WATER BY REVERSE OSMOSIS

Period:

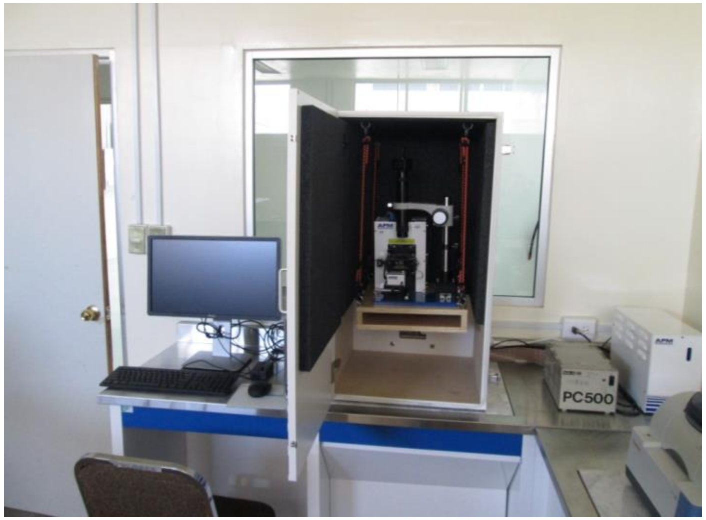
2013-2014

Amount:

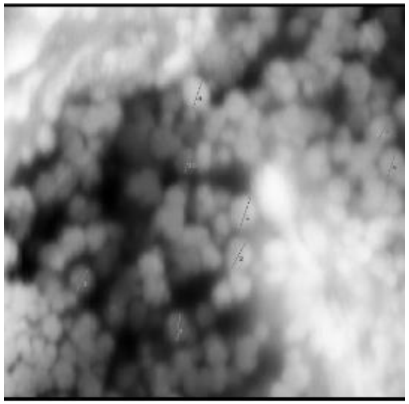
$ 96,000 dollars

Delivered Products

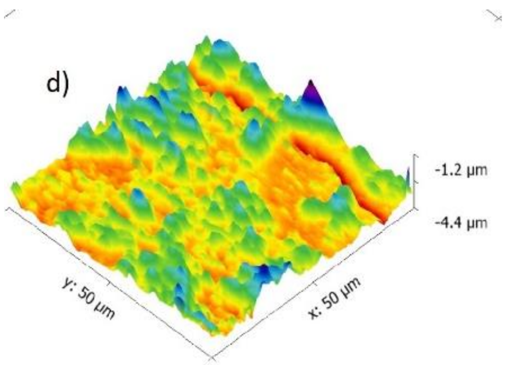
Atomic Force Microscopy (AFM)



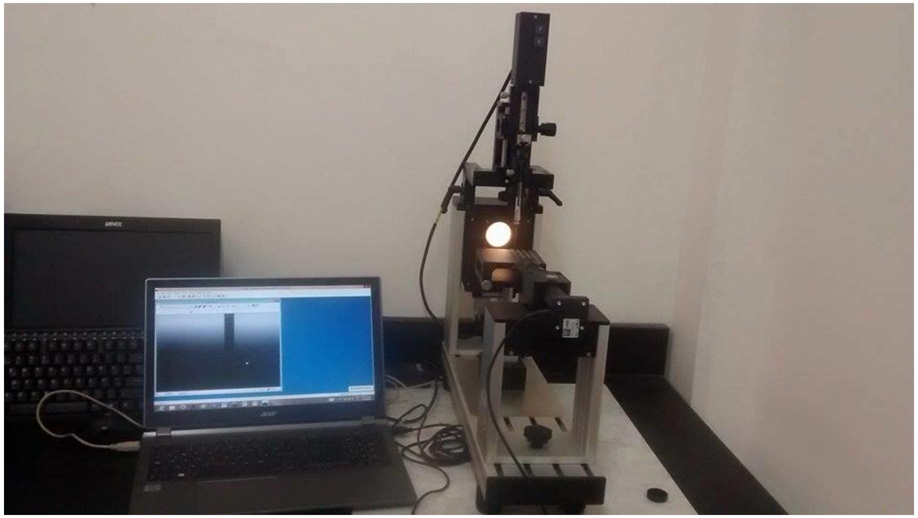
ZnO Nanoparticle

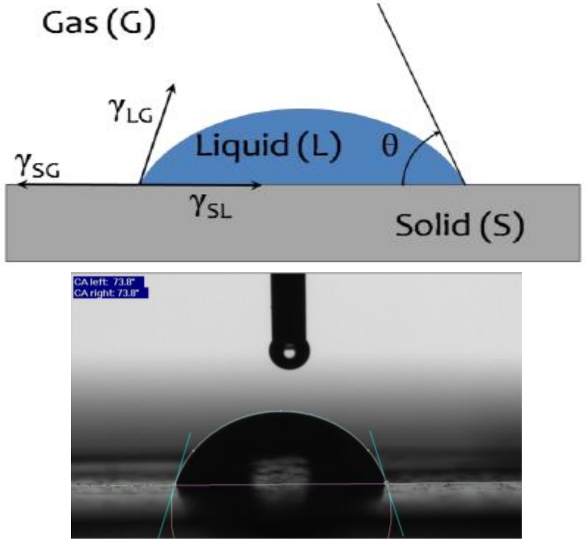


Membrane roughness



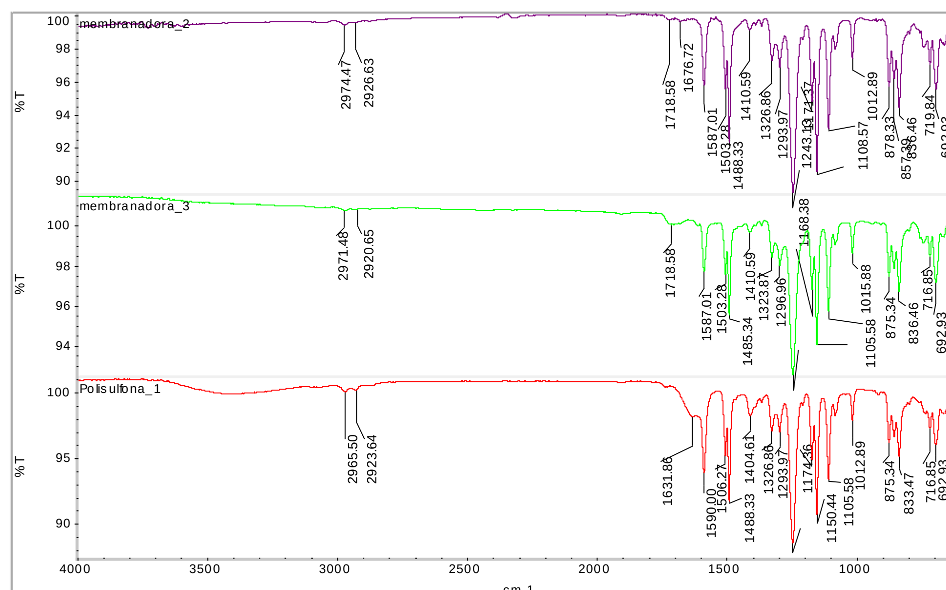
Contact Angle





Delivered Products

Infrared spectrophotometer by ATR (Attenuate total reflectance)



Research laboratory at ITSON

Biopolymers

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Copper bioadsorption of acidic water from mines in a natural polymer (chitosan)

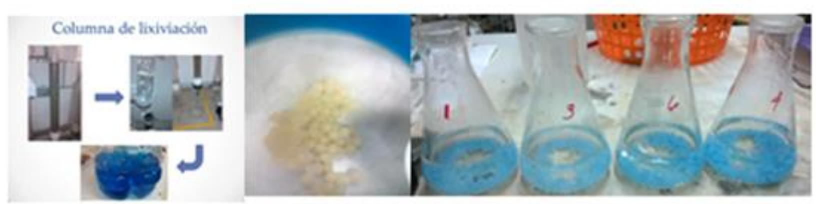
Evaluate the chitosan adsorption capacity as bio adsorbent of Allura red dye through kinetics and isotherm of adsorption.

Time frame:

2016-2017

Amount:

$ 5,200 USD



Production and characterization of chitosan nanoparticles to adsorb dyes

Synthesis chitosan-tripolyphosphate nanoparticles by using the ionic gelation method for the adsorption of food dyes

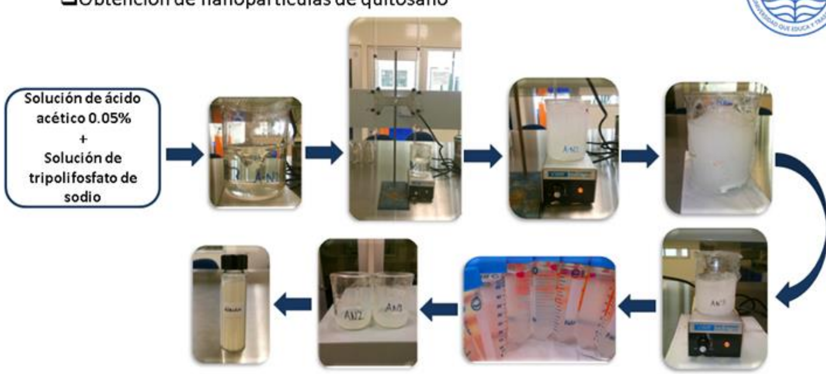
Time frame:

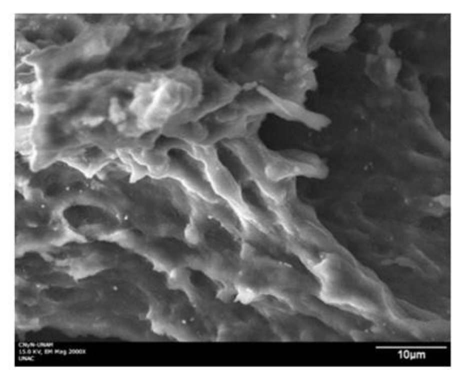
2018-2019

Amount:

$ 5,200 USD

❑Obtención de nanopartículas de quitosano





Micrografía electrónica de barrido (SEM) de nanopartículas de plata-quitosano

Chitosan crosslinked for membrane preparation

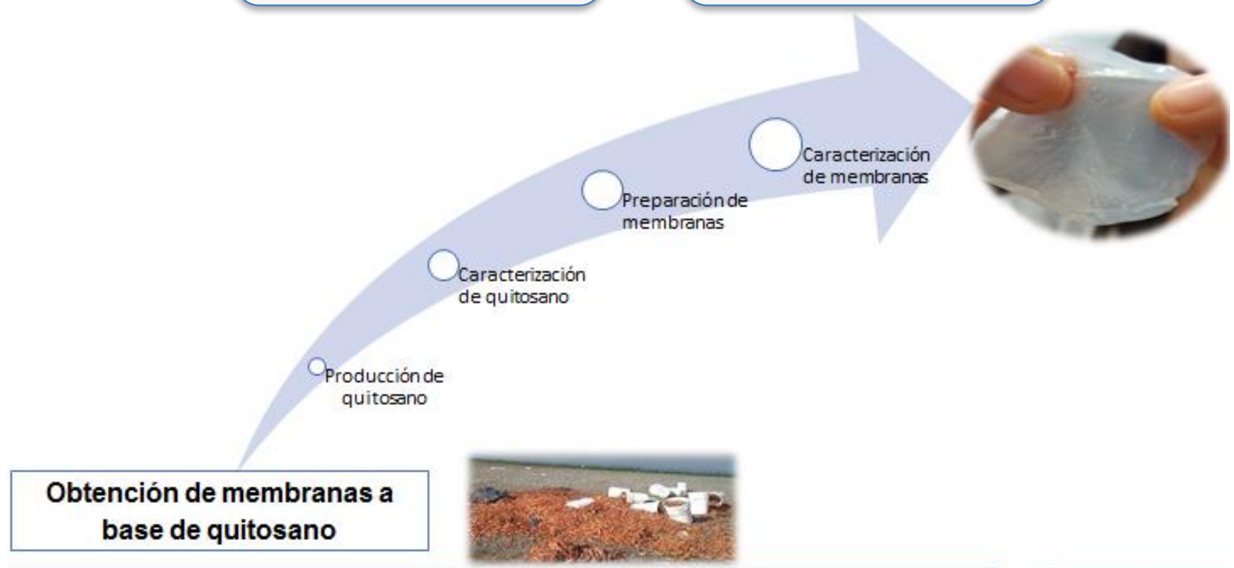
Production of chitosan-based membranes with the incorporation of chemical compounds (crosslinkers, plasticizers and/or grafting) in their matrix, for possible use in filtration processes and /or seawater desalination processes.

Time frame:

2019-2020

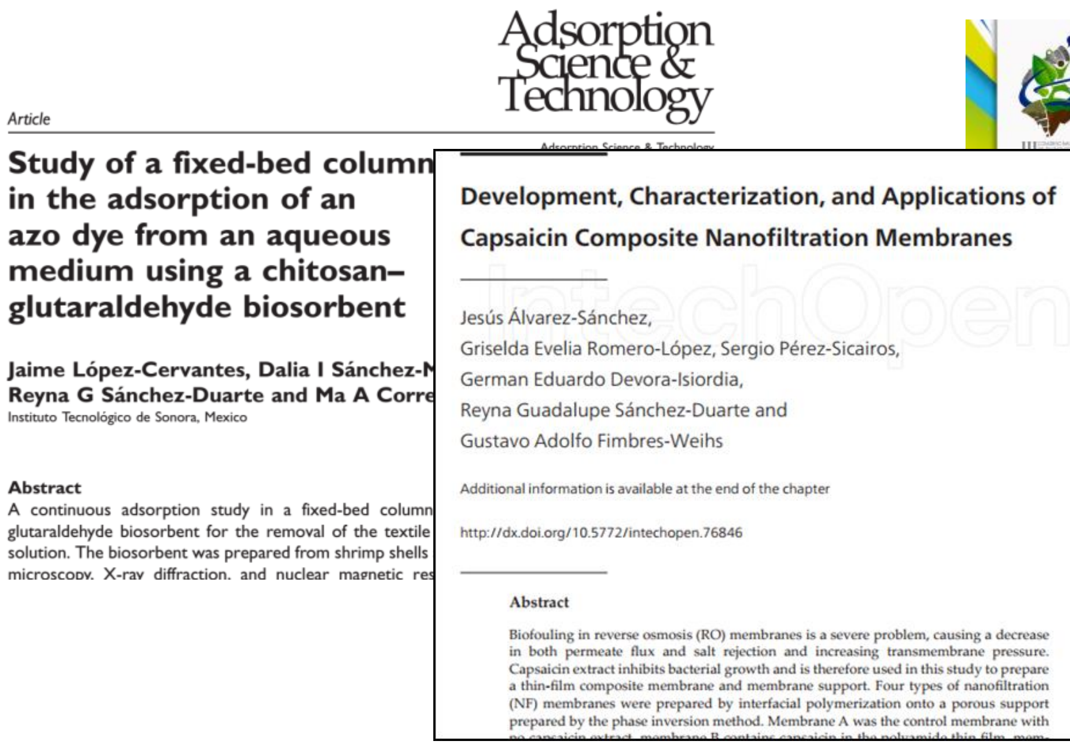
Amount:

$ 2,080 USD



Delivered Products

- Articles published in international journals and chapter of the book
- Presentations at national and international congresses
- Thesis Topics



Adsorption Science & Technology

Article

Study of a fixed-bed column in the adsorption of an azo dye from an aqueous medium using a chitosan–glutaraldehyde biosorbent

Jaime López-Cervantes, Dalia I Sánchez-M
Reyna G Sánchez-Duarte and Ma A Corre
Instituto Tecnológico de Sonora, Mexico

Abstract
A continuous adsorption study in a fixed-bed column glutaraldehyde biosorbent for the removal of the textile solution. The biosorbent was prepared from shrimp shells microscopy, X-ray diffraction, and nuclear magnetic res

Development, Characterization, and Applications of Capsaicin Composite Nanofiltration Membranes

Jesús Álvarez-Sánchez,
Griselda Evelia Romero-López, Sergio Pérez-Sicairos,
German Eduardo Devora-Isiordia,
Reyna Guadalupe Sánchez-Duarte and
Gustavo Adolfo Fimbres-Weihs

Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/intechopen.76846

Abstract

Biofouling in reverse osmosis (RO) membranes is a severe problem, causing a decrease in both permeate flux and salt rejection and increasing transmembrane pressure. Capsaicin extract inhibits bacterial growth and is therefore used in this study to prepare a thin-film composite membrane and membrane support. Four types of nanofiltration (NF) membranes were prepared by interfacial polymerization onto a porous support prepared by the phase inversion method. Membrane A was the control membrane with

*Currently, we started with metal coating test with Chitosan as an anticorrosive

Research Laboratory:

Biopolymers and phytoremediation with microalgae

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Effect of light intensity on kinetic growth rate and lipid content on microalgae *Nannochloropsis oculata.*

Evaluate the effect of different light intensities on lipid content and biomass productivity on *Nannochloropsis oculata.*

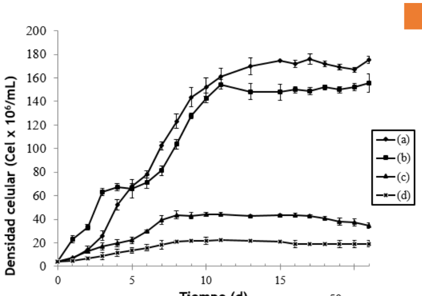
Time:

2011-2012

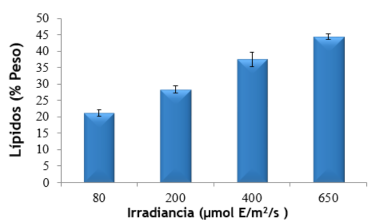
Available money

$ 5,200 USD

Diferentes intensidades de luz



Cinética de crecimiento del cultivo de *Nannochloropsis oculata* en cultivos en lote alimentado con intensidades de luz: 650 µmol E/m²/s (a), 400 µmol E/m²/s (b), 200 µmol E/m²/s (c), 80 µmol E/m²/s (d).



Contenido de lípidos en la biomasa de *Nannochloropsis oculata* a diferentes intensidades de luz

Effect of fed-batch and semicontinuos regimen on *Nannochloropsis oculata* grown in different culture media to high-value products.

Evaluate different grown system and different culture media on microalgae *N. oculata.*

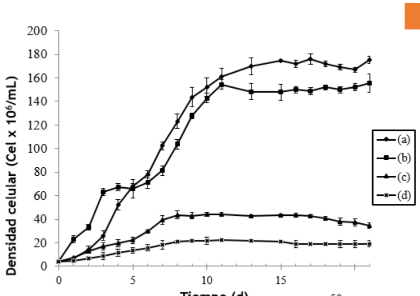
Time

2013-2014

Available money

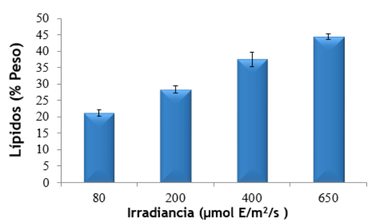
$ 3,130 USD

Diferentes intensidades de luz



Cinética de crecimiento del cultivo de *Nannochloropsis oculata* en cultivos en lote alimentado con intensidades de luz: 650 µmol E/m²/s (a), 400 µmol E/m²/s (b), 200 µmol E/m²/s (c), 80 µmol E/m²/s (d).

Contenido de lípidos en la biomasa de *Nannochloropsis oculata* a diferentes intensidades de luz



Effect of removal of heavy metals from acid mine water on biomass and lipid productivity to improve biofuels production (PROFAPI 2016)

Biosorption of heavy metals from acid mine water by marines microalgae (PROFAPÍ 2017)

Determine the adsorption capacity of copper in acid mine water, using lyophilized biomass of microalgae as adsorbent.

Time

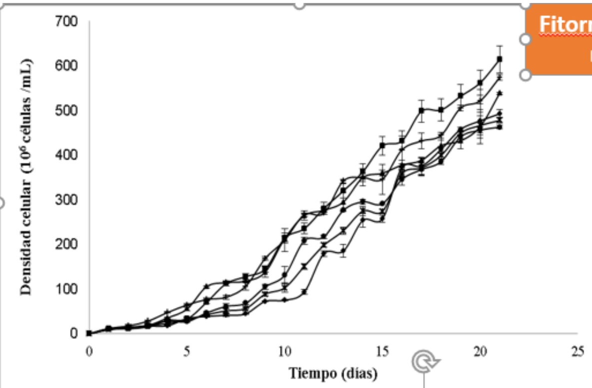
2016-2017

Available money

$ 2,810 USD

PRODUCTS

Fitorremediación de aguas ácidas de minas reactor tubular (7L)



Aguilar, *et al.*, 2018

Figura 12. Cinéticas de crecimiento de *N. oculata* a diferentes concentraciones de metales (Cu y Fe); control (cuadrado); con 1.16 mg Cu L^{-1} (más); 1.74 mg Cu L^{-1} (triángulo); 2.32 mg Cu L^{-1} (rombo); 3.48 mg Cu L^{-1} (asterisco); 4.64 mg Cu L^{-1} (círculo).

Concentración de metales pesados (mg Cu L^{-1})	Densidad celular (x10^6cel mL^{-1})	Velocidad específica de crecimiento (d^{-1})	Productividad de biomasa (g L^{-1} d^{-1})	% Lípidos	Productividad de lípidos (g L^{-1} d^{-1})
Control	614.25±30.71a	0.331±0.018a	0.261±0.002	33.058±5.398a	0.086±0.001a
1.16	573.96±6.51b	0.312±0.019ab	0.244±0.003b	29.497±2.578a	0.072±0.001a
1.74	538.56±2.48b	0.278±0.020b	0.229±0.001	71.594±1.649b	0.164±0.001b
2.32	492.71±8.87c	0.303±0.012ab	0.210±0.004	75.302±3.933b	0.158±0.003b
3.48	477.81±6.47c	0.260±0.017b	0.115±0.001	68.157±4.287b	0.078±0.001a
4.64	462.92±4.07c	0.308±0.023ab	0.197±0.002f	77.039±2.604b	0.152±0.002b

Environmental Science and Pollution Research
https://doi.org/10.1007/s11356-018-3963-1

RESEARCH ARTICLE

CrossMark

Uptake of copper from acid mine drainage by the microalgae *Nannochloropsis oculata*

Maria del Rosario Martínez-Macias[1] • Ma. A. Correa-Murrieta[1] • Yedidia Villegas-Peralta[1] • Germán Eduardo Dévora-Isiordia[1] • Jesús Álvarez-Sánchez[1] • Jorge Saldivar-Cabrales[1] • Reyna G. Sánchez-Duarte[1]

Received: 2 May 2018 / Accepted: 10 December 2018

Abstract

The removal of heavy metals from acid mine drainage is a key factor for avoiding damage to the environment. The microalga *Nannochloropsis oculata* was cultured in an algal medium with 0.05, 0.1, 0.15, 0.2, and 0.25 mM copper under completely defined conditions to assess its removal capacity; the effects of copper on the cell density and lipid productivity of *N. oculata* were also evaluated. The results showed that *N. oculata* was able to remove up to 99.92 ± 0.04% of the copper content in the culture medium. A total of 89.29 ± 1.92% was eliminated through metabolism, and 10.70 ± 1.92% was removed by adsorption. These findings are favorable because they indicate that a large amount of copper was extracted due to the ability of the microalga to metabolize copper ions. The cell density, growth rate, and lipid content decreased with increased concentrations of copper in the culture medium. A positive effect on the fatty acid profile was found, as the saturated fatty acid (SFA) and monounsaturated fatty acid (MUFA) content improved when the copper concentration was higher than 0.1 mmol L^{-1}, which can potentiate the production of high-quality biodiesel. *N. oculata* is a good option for the treatment of acid mine drainage due to its ability to eliminate a substantial percentage of the copper present. Moreover, combining different culture systems such that heavy metals are removed to non-toxic levels in the first stage and high cell densities, which promote lipid production, is obtained in the second stage would be an advantageous strategy.

Keywords Microalgae · Lipids · Biodiesel · Heavy metals · Acid mine drainage

Martínez *et al.*, 2019.

Research Laboratory:

Bioadsorbents

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https://www.itson.mx/oferta/iq/Paginas/araceli-correa.aspx

Hexavalent chromium removal from wastewater using aquaculture waste.
(PROFAPI: 2015 y 2016)

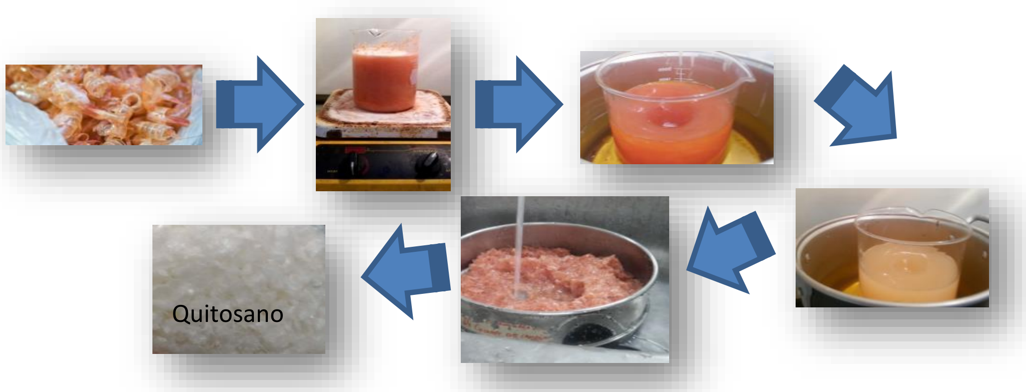
Evaluate the adsorption of chromium (VI) from synthetic water using beads of chitosan and chitosan modified with glutaraldehyde.

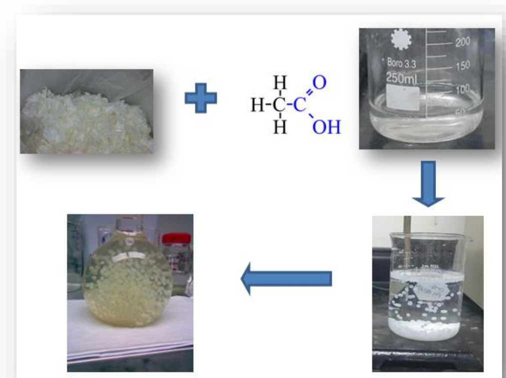
Project Period:

2015-2016

Funding:

$ 6,250 USD





Delivered Products

- Congress Presentations: International Congress of Environmental Engineering (May, 2015), III National Congress of Biotechnology and Food Sciences (October, 2015), XXXVII Congress of AMIDIQ (May, 2016), and 3rd National Congress of Technologies and Environmental Sciences (October, 2016).

- Congress' memories, book chapter, and journal papers (indexed by JCR).


CONGRESO INTERNACIONAL DE INGENIERÍA AMBIENTAL

"Quien cuida el ambiente cuida su vida"

La Universidad Estatal de Sonora, el Instituto Tecnológico Superior de Cajeme, la Secretaría del Medio Ambiente y Recursos Naturales y la Comisión de Ecología y Desarrollo Sustentable del Estado de Sonora otorgan la presente

CONSTANCIA

A:

M.A. Correa-Murrieta, R.G. Sánchez-Duarte, D. Serrano-Palacios, E.R. Meza-Escalante

Por su presentación titulada:

REMOCIÓN DE CROMO DE SOLUCIONES ACUOSAS UTILIZANDO RESIDUOS ACUÍCOLAS.

en el **Congreso Internacional de Ingeniería Ambiental** realizado en Hermosillo, Sonora, México, del 6 al 8 de mayo del 2015

Dr. Martín E. Cruz Campas
Ingeniería Ambiental
Universidad Estatal de Sonora

Dr. Martín Villa Ibarra
Ingeniería Ambiental
Instituto Tecnológico Superior de Cajeme

2297 © IWA Publishing 2016 Water Science & Technology | 74.10 | 2016

Modeling of breakthrough curves for aqueous iron (III) adsorption on chitosan-sodium tripolyphosphate

Dalia I. Sánchez-Machado, Jaime López-Cervantes,
Ma. A. Correa-Murrieta and Reyna G. Sánchez-Duarte

Capítulo XVII. Remoción de cromo hexavalente por quitosano entrecruzado

Correa Murrieta M. A. *, Sánchez Duarte R. G., Álvarez Sánchez J., Dévora Isiordia G. E. y Velázquez G. M.
*macorrea@itson.edu.mx


INSTITUTO TECNOLÓGICO DE SONORA

DIRECCIÓN ACADÉMICA DE LA DIVISIÓN DE RECURSOS NATURALES

DEPARTAMENTO DE BIOTECNOLOGÍA Y CIENCIAS ALIMENTARIAS

Otorgan la presente

CONSTANCIA

A: Correa Murrieta Ma. Araceli

Por su participación como *Ponente* del trabajo libre modalidad cartel:

REMOCIÓN DE CROMO HEXAVALENTE ACUOSO USANDO QUITOSANO DE RESIDUOS DE CAMARÓN

Autor (es): **Correa Murrieta, M. A.; Dévora Isiordia, G. E.; Álvarez Sánchez, J.; Angulo Inzunza, R. y Meléndrez Valenzuela, A.**

En el III Congreso Nacional de Biotecnología y Ciencias Alimentarias, realizado del 21 al 23 de Octubre de 2015 en Ciudad Obregón, Sonora, México

Dr. Fernando Lares Villa
Director de la Dirección Académica de la División de Recursos Naturales

Mtro. Anacleto Félix Fuentes
Jefe de Departamento de Biotecnología y Ciencias Alimentarias

Dr. Jaime López Cervantes
Coordinador del Comité Científico

0023188-15


TECNOLÓGICO NACIONAL DE MÉXICO

INSTITUTO TECNOLÓGICO DE CELAYA

DEPARTAMENTO DE INGENIERÍA QUÍMICA

AMIDIQ

La Academia Mexicana de Investigación y Docencia en Ingeniería Química A.C.

Nuevas tecnologías y tendencias en la Ingeniería Química

Otorga el presente

RECONOCIMIENTO

a:

MA. ARACELI CORREA-MURRIETA, REYNA GUADALUPE SÁNCHEZ-DUARTE, DENISSE SERRANO-PALACIOS, EDNA ROSALBA MEZA-ESCALANTE, MARÍA DEL ROSARIO MARTÍNEZ-MACÍAS Y LUIS MARIO LÓPEZ-QUIROZ

Por la presentación del trabajo:

QUITOSANO MODIFICADO PARA REMOCIÓN DE CROMO DE SOLUCIONES ACUOSAS


El Departamento de Ciencias del Agua y Medio Ambiente del instituto Tecnológico de Sonora, a través de sus programas Educativos de Ingeniero en Ciencias Ambientales y de Ingeniería Química.

OTORGA LA PRESENTE

CONSTANCIA

A:

MA. ARACELI CORREA MURRIETA, REYNA G. SÁNCHEZ DUARTE, JESÚS ÁLVAREZ SÁNCHEZ, GERMÁN E. DÉVORA ISIORDIA, GISELA MARISOL VELÁZQUEZ GIL

Por su valiosa participación como PONENTE en la presentación cartel:

REMOCIÓN DE CROMO HEXAVALENTE POR QUITOSANO ENTRECRUZADO

III Congreso Nacional de Tecnología y Ciencias Ambientales

VII Congreso Regional de Ciencias Ambientales

Cd. Obregón Sonora 05, 06 y 07 de octubre 2016

Dr. Javier Rolando Reyna Granados
Director de la DES de Recursos Naturales

Dr. Jesús Alvarez Sánchez
Coordinador General del Congreso

Shrimp wastes to remove manganese from aqueous solutions /
Treatment of waste from COD analyses using biopolymers.
(PROFAPI: 2017 y 2018)

Evaluate the adsorption of Manganese (II) from synthetic water on chitosan beads modified with sodium tripolyphosphate.

Evaluate the elimination of chromium contained in the residues from the COD analysis by protonated chitosan beads modified with glutaraldehyde.

Project Period:
2017-2018

Funding:
$ 5,750 USD

Delivered Products

- Congress Presentations: XXXVIII National Meeting of AMIDIQ (May, 2017), IV National Congress of Biotechnology and Food Sciences (September, 2017), XXXIX National Meeting of AMIDIQ (May, 2018), and Sixth International Symposium on Environmental Biotechnology and Engineering (November, 2018).
- Congress' memories and book chapter

ELIMINACIÓN DE MANGANESO (II) POR RESIDUOS DE CAMARÓN

Ma. Araceli Correa-Murrieta[1], Germán Eduardo Dévora Isiordia[1], Jesús Álvarez Sánchez[1], Yedidia Villegas Peralta[1]*
[1]Departamento de Ciencias del Agua y Medio Ambiente, Instituto Tecnológico de Sonora, 5 De Febrero 818 Sur, Centro, Cd. Obregón, Sonora, 85000, México.
[*]email: maria.correa@itson.edu.mx

Memorias del XXXVIII Encuentro Nacional de la AMIDIQ
9 al 12 de Mayo de 2017, Ixtapa-Zihuatanejo, Guerrero, México

TRATAMIENTO DE DESECHOS DE DQO POR BIOADSORCIÓN

Ma. Araceli Corre-Murrieta[a], Reyna Guadalupe Sánchez Duarte[a], María del Rosario Martínez Macías[a], Yedidia Villegas Peralta[a], Germán Eduardo Dévora Isiordia[a], Jesús Álvarez Sánchez[a]
[a]Departamento de Ciencias del Agua y Medio Ambiente, Instituto Tecnológico de Sonora, 5 de Febrero 818 Sur, Centro, Cd. Obregón, Sonora, 85000, México. [*]email: maria.correa@itson.edu.mx

Memorias del XXXIX Encuentro Nacional de la AMIDIQ
1 al 4 de mayo 2018, San José del Cabo, BCS.

Chapter 4.2

Chitosan

Dalia I. Sánchez-Machado[*], Jaime López-Cervantes[*], Ma. A. Correa-Murrieta[*], Reyna G. Sánchez-Duarte[*], Paola Cruz-Flores[*] and Gabriela Servín de la Mora-López[**]
[*]*Instituto Tecnológico de Sonora, Ciudad Obregón, Sonora, Mexico*, [**]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico*

Research Laboratory:

Dynamic Biosystems and Renewable Energies

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AUTHORIZED PROJECTS

CONACYT

"Optimization of synergies between photovoltaic solar cells and reverse osmosis membranes for the desalination of marine and brackish waters

Período:

2016-2019

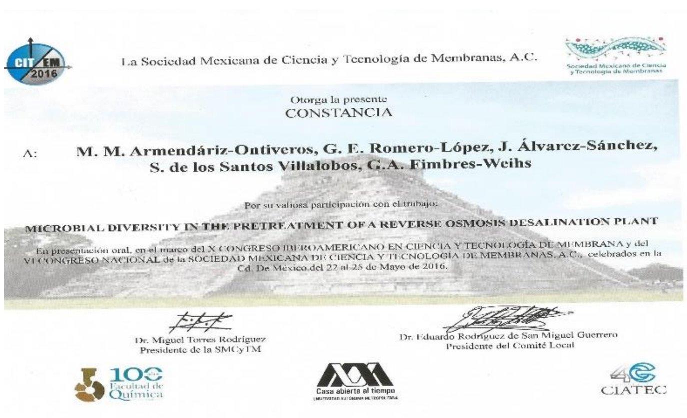
Monto:

$78,000 USD

Delivered Productss

Article published

Participation in congress



CIT EM 2016

La Sociedad Mexicana de Ciencia y Tecnología de Membranas, A.C.

Otorga la presente

CONSTANCIA

A: M. M. Armendáriz-Ontiveros, G. E. Romero-López, J. Álvarez-Sánchez, S. de los Santos Villalobos, G.A. Fimbres-Weihs

Por su valiosa participación con el trabajo:

MICROBIAL DIVERSITY IN THE PRETREATMENT OF A REVERSE OSMOSIS DESALINATION PLANT

En presentación oral, en el marco del X CONGRESO IBEROAMERICANO EN CIENCIA Y TECNOLOGÍA DE MEMBRANA y del VI CONGRESO NACIONAL de la SOCIEDAD MEXICANA DE CIENCIA Y TECNOLOGÍA DE MEMBRANAS, A.C., celebrados en la Cd. De México del 22 al 25 de Mayo de 2016.

Dr. Miguel Torres Rodríguez
Presidente de la SMCyTM

Dr. Eduardo Rodríguez de San Miguel Guerrero
Presidente del Comité Local

100 Facultad de Química

Casa abierta al tiempo

CIATEC

ELSEVIER

Desalination

Volume 451, 1 February 2019, Pages 45-58

Biofouling performance of RO membranes coated with Iron NPs on graphene oxide

M.M. Armendáriz-Ontiveros [a], A. García García [b], S. de los Santos Villalobos [c], G.A. Fimbres Weihs [c]

Show more

https://doi.org/10.1016/j.desal.2018.07.005

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coatings

MDPI

Article

Biofouling of FeNP-Coated SWRO Membranes with Bacteria Isolated after Pre-Treatment in the Sea of Cortez

Maria Magdalena Armendáriz-Ontiveros [1], Gustavo A. Fimbres Weihs [2,*], Sergio de los Santos Villalobos [2,*] and Sergio G. Salinas-Rodriguez [3]

1 Instituto Tecnológico de Sonora. 5 de Febrero 818 Sur, Cd. Obregón, Sonora, C.P. 85000, Mexico

2 CONACYT–Instituto Tecnológico de Sonora, 5 de Febrero 818 Sur, Cd. Obregón, Sonora, C.P. 85000, Mexico

3 IHE Delft Institute for Water Education, Environmental Engineering and Water Technology Department, Westvest 7, 2611 AX Delft, The Netherlands

* Correspondence: gustavo.fimbres@itson.edu.mx (G.A.F.W.); sergio.delossantos@itson.edu.mx (S.d.l.S.V.)

Received: 14 June 2019; Accepted: 19 July 2019; Published: 23 July 2019

check for updates

Abstract: Commercial seawater reverse osmosis (SWRO) membranes were coated with iron nanoparticles (FeNPs) and biofouled with a bacterium strain isolated from the Sea of Cortez, Mexico. This strain was selected and characterized, as it was the only cultivable strain in pretreated

AUTHORIZED PROJECTS

CONACYT

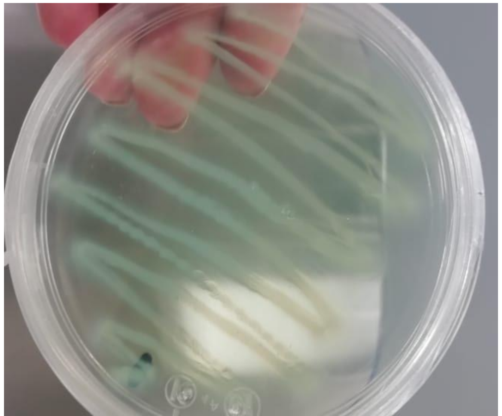
Optimum concentration of FeNPs in the coating of reverse osmosis membranes for the reduction of bio-fouling ”–

Período:

2019

Monto:

$1,460 USD



Delivered Products

Article published

Participation in congress

La Sociedad Mexicana de Ciencia y Tecnología de Membranas

20 y 21 de Junio del 2019
Cuernavaca, Morelos, México

Otorga el presente

RECONOCIMIENTO

a:

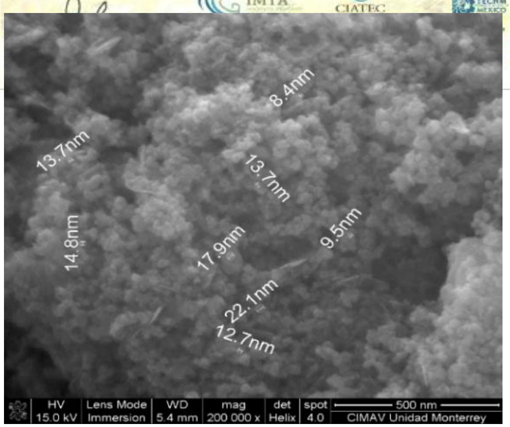
M.M. Armendariz-Ontiveros y G.A. Fimbres Weihs

Por su valiosa participación en el **VIII Congreso Nacional de la Sociedad Mexicana de Ciencia y Tecnología de Membranas A.C.** con el trabajo titulado

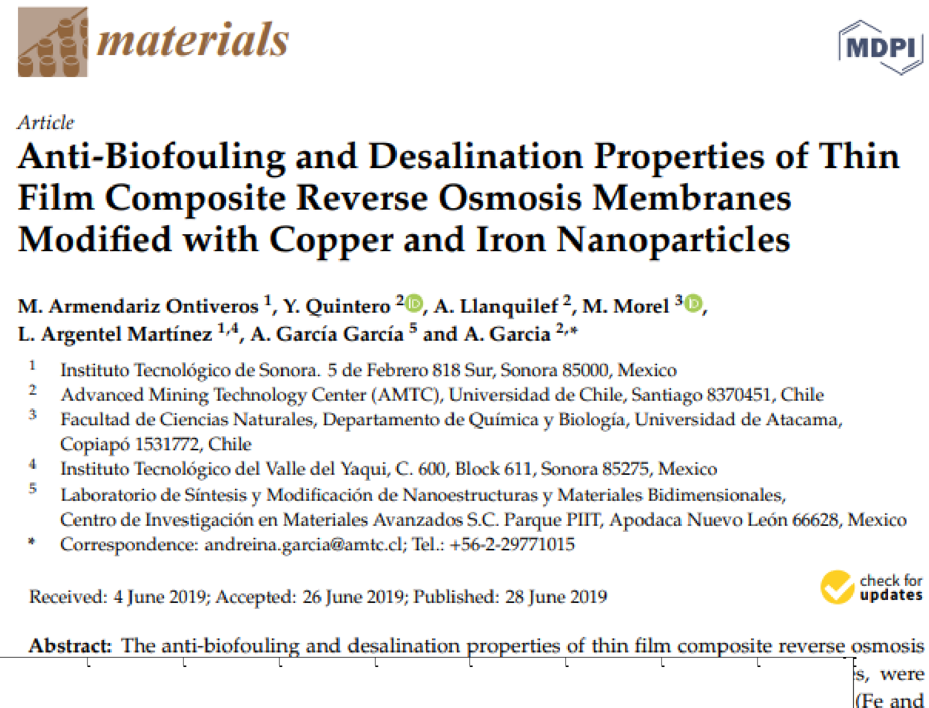
Comparación del efecto anti-bioensuciamiento de FeNPs en membranas de OI en dos sitios: México y Chile

IMTA CIATEC TECNM

Dra. Jennifer Bañuelos Díaz
Presidenta del Comité Organizador



FeNPs



materials MDPI

Article

Anti-Biofouling and Desalination Properties of Thin Film Composite Reverse Osmosis Membranes Modified with Copper and Iron Nanoparticles

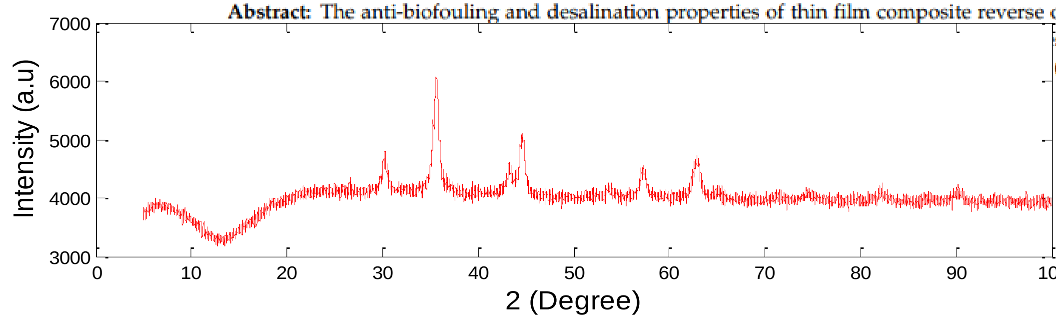
M. Armendariz Ontiveros [1], Y. Quintero [2], A. Llanquilef [2], M. Morel [3], L. Argentel Martínez [1,4], A. García García [5] and A. Garcia [2,*]

1 Instituto Tecnológico de Sonora. 5 de Febrero 818 Sur, Sonora 85000, Mexico
2 Advanced Mining Technology Center (AMTC), Universidad de Chile, Santiago 8370451, Chile
3 Facultad de Ciencias Naturales, Departamento de Química y Biología, Universidad de Atacama, Copiapó 1531772, Chile
4 Instituto Tecnológico del Valle del Yaqui, C. 600, Block 611, Sonora 85275, Mexico
5 Laboratorio de Síntesis y Modificación de Nanoestructuras y Materiales Bidimensionales, Centro de Investigación en Materiales Avanzados S.C. Parque PIIT, Apodaca Nuevo León 66628, Mexico
* Correspondence: andreina.garcia@amtc.cl; Tel.: +56-2-29771015

Received: 4 June 2019; Accepted: 26 June 2019; Published: 28 June 2019

check for updates

Abstract: The anti-biofouling and desalination properties of thin film composite reverse osmosis ... s, were ... (Fe and



XRD de FeNPs

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Educar para Trascender

Thanks!