



## **RAFAEL VAZQUEZ DUHALT**

### **Datos Generales**

**Nombre:** RAFAEL VAZQUEZ DUHALT

**Máximo nivel de estudios:** DOCTORADO

**Antigüedad académica en la UNAM:** 30 años

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### **Nombramientos**

**Vigente:** INVESTIGADOR TITULAR C TC Definitivo  
Centro de Nanociencias y Nanotecnología en la UNAM  
Desde 01-04-2014

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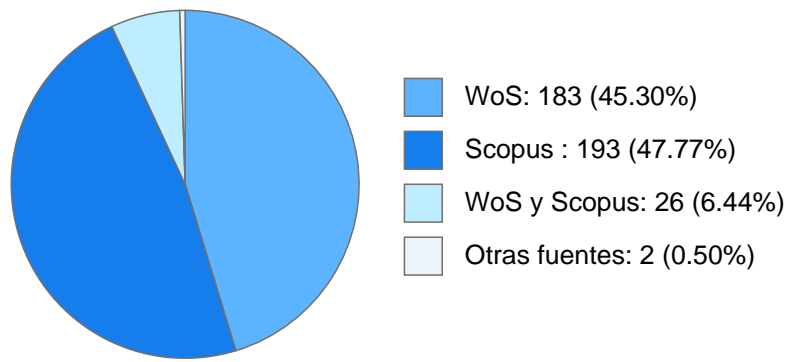
### **Estímulos, programas, premios y reconocimientos**

SNI Emérito 2022 - 2024  
SNI III - 2021  
PRIDE D - 2024

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### DOCUMENTOS EN REVISTAS

#### Histórico de Documentos



#	Título	Autores	Revista	Año
1	Virus-Based Nanoreactor with Laccase Activity for Prodrug Activation	CARLOS ALEJANDRO MEDRANO VILLAGOMEZ ANDRES ZARATE ROMERO MARCELA AYALA ACEVES et al.	Bionanosciencie	2025
2	Enhanced Catalytic Stability of Laccase Immobilized on Copper Oxide Nanoparticles	RAFAEL VAZQUEZ DUHALT Suarez F.J. Santillán S.O. et al.	Chemcatchem	2025
3	Exploring the cytotoxicity mechanisms of copper ions and copper oxide nanoparticles in cells from the excretory system	RAFAEL VAZQUEZ DUHALT KARLA OYUKY JUAREZ MORENO Mavil-Guerrero E.	Chemosphere	2024
4	Synergistic anticancer effects and reduced genotoxicity of silver nanoparticles and tamoxifen in breast cancer cells	RAFAEL VAZQUEZ DUHALT KARLA OYUKY JUAREZ MORENO Rivera M.D. et al.	JOURNAL OF BIOCHEMICAL AND MOLECULAR TOXICOLOGY	2024
5	Cloud point extraction and characterization of zinc oxide nanoparticles isolated from infant milk formulas	KARLA OYUKY JUAREZ MORENO RAFAEL VAZQUEZ DUHALT Salinas-Lucero G.	Journal of Food Measurement and Characterization	2024

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6	An accurate spectrophotometric method for chitosan quantification	OSCAR GONZALEZ DAVIS RAFAEL VAZQUEZ DUHALT Itandehui Betanzo	BIOLOGY METHODS & PROTOCOLS	2023
7	Virus-like nanoparticles as enzyme carriers for Enzyme Replacement Therapy (ERT)	OSCAR GONZALEZ DAVIS PEDRO ANTONIO GAMA LOPEZ KANCHAN CHAUHAN et al.	Virology	2023
8	Optimization of Aerococcus viridans lactate oxidase for direct electron transfer in biosensors	RAFAEL VAZQUEZ DUHALT ANDRES ZARATE ROMERO David Morales-Gutierrez et al.	PROTEIN SCIENCE	2023
9	Antibody-Functionalized Copper Oxide Nanoparticles with Targeted Antibacterial Activity	KARLA OYUKY JUAREZ MORENO ANDREY SIMAKOV RAFAEL VAZQUEZ DUHALT et al.	ChemistryOpen	2023
10	Glucose oxidase virus-based nanoreactors for smart breast cancer therapy	PEDRO ANTONIO GAMA LOPEZ PATRICIA JUAREZ CAMACHO ANA GUADALUPE RODRIGUEZ HERNANDEZ et al.	BIOTECHNOLOGY JOURNAL	2023
11	Enhanced Laccase Activity and Stability as Crosslinked Enzyme Aggregates on Magnetic Copper Ferrite Nanoparticles for Biotechnological Processes	PRAKHAR SENGAR RAFAEL VAZQUEZ DUHALT KANCHAN CHAUHAN et al.	Chemcatchem	2023
12	Bioengineered Lactate Oxidase Mutants for Enhanced Electrochemical Performance at Acidic pH	ANDRES ZARATE ROMERO RAFAEL VAZQUEZ DUHALT Garcia-Morales R. et al.	CHEMELECTROCHEMISTRY	2023
13	Nonlinear charge regulation for the deposition of silica nanoparticles on polystyrene spherical surfaces	RAFAEL VAZQUEZ DUHALT Choi S. Graeve O.A.	JOURNAL OF COLLOID AND INTERFACE SCIENCE	2022
14	Chitosan Nanoparticles Containing Lipoic Acid with Antioxidant Properties as a Potential Nutritional Supplement	KATRIN QUESTER MARIA LAURA GONZALEZ DAVALOS CARLOS LOZANO FLORES et al.	Animals	2022
15	Virus-like Particles: Fundamentals and Biomedical Applications	RAFAEL VAZQUEZ DUHALT Jorge L. Mejia-Mendez Luis R. Hernandez et al.	INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES	2022
16	Monolayer (2D) or spheroids (3D) cell cultures for nanotoxicological studies? Comparison of cytotoxicity and cell internalization of nanoparticles	KARLA OYUKY JUAREZ MORENO DALIA HOLANDA CHAVEZ GARCIA GUSTAVO ALONSO HIRATA FLORES et al.	TOXICOLOGY IN VITRO	2022
17	Targeted Enzymatic VLP-Nanoreactors with beta-Glucocerebrosidase Activity as Potential Enzyme Replacement Therapy for Gaucher's Disease	KANCHAN CHAUHAN KARLA OYUKY JUAREZ MORENO RUBEN DARIO CADENA NAVA et al.	Chemmedchem	2022

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18	Virus-Based Nanoreactors with GALT Activity for Classic Galactosemia Therapy	PEDRO ANTONIO GAMA LOPEZ RUBEN DARIO CADENA NAVA KARLA OYUKY JUAREZ MORENO et al.	Chemmedchem	2021
19	Extra-Heavy Crude Oil Degradation by Alternaria sp. Isolated from Deep-Sea Sediments of the Gulf of Mexico	RAFAEL VAZQUEZ DUHALT Lucia Romero-Hernandez Patricia Velez et al.	APPLIED SCIENCES-BASEL	2021
20	Discretizing Three-Dimensional Oxygen Gradients to Modulate and Investigate Cellular Processes	RAFAEL VAZQUEZ DUHALT Michael R. Blatchley Franklyn Hall et al.	ADVANCED SCIENCE	2021
21	Catalytic Kinetics Considerations and Molecular Tools for the Design of Multienzymatic Cascade Nanoreactors	ANDRES ZARATE ROMERO RAFAEL VAZQUEZ DUHALT Kanchan Chauhan et al.	Chemcatchem	2021
22	Enzymatic characterization of agmatinase (AGM-1) from the filamentous fungus Neurospora crassa	RAFAEL VAZQUEZ DUHALT Luis L. Perez-Mozqueda Ernestina Castro-Longoria	FUNGAL GENETICS AND BIOLOGY	2021
23	Nanoparticle-plasma Membrane interactions: Thermodynamics, Toxicity and Cellular Response	ANA GUADALUPE RODRIGUEZ HERNANDEZ RAFAEL VAZQUEZ DUHALT ALEJANDRO HUERTA SAQUERO	CURRENT MEDICINAL CHEMISTRY	2020
24	Camouflaged, activatable and therapeutic tandem bionanoreactors for breast cancer theranosis	KANCHAN CHAUHAN KARLA OYUKY JUAREZ MORENO GUSTAVO ALONSO HIRATA FLORES et al.	JOURNAL OF COLLOID AND INTERFACE SCIENCE	2020
25	Insight into the Metabolic Machinery of Deep-Marine Microbes Grown with Light and Heavy Petroleum	RAFAEL VAZQUEZ DUHALT Andres Tejeda-Mora Luis Maturano et al.	FASEB JOURNAL	2020
26	3D printer waste, a new source of nanoplastic pollutants	ANA GUADALUPE RODRIGUEZ HERNANDEZ RAFAEL VAZQUEZ DUHALT Chiodoni A. et al.	ENVIRONMENTAL POLLUTION	2020
27	Chemical Profiling Provides Insights into the Metabolic Machinery of Hydrocarbon-Degrading Deep-Sea Microbes	RAFAEL VAZQUEZ DUHALT Aldo Moreno-Ulloa Victoria Sicairos Diaz et al.	Msystems	2020
28	Bi-enzymatic virus-like bionanoreactors for the transformation of endocrine disruptor compounds	KANCHAN CHAUHAN RAFAEL VAZQUEZ DUHALT González-Davis O. et al.	INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES	2020
29	Brome mosaic virus-like particles as siRNA nanocarriers for biomedical purposes	ANA GUADALUPE RODRIGUEZ HERNANDEZ RAFAEL VAZQUEZ DUHALT RUBEN DARIO CADENA NAVA et al.	BEILSTEIN JOURNAL OF NANOTECHNOLOGY	2020

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30	Enzymatic synthesis of indigo-derivative industrial dyes	KANCHAN CHAUHAN RAFAEL VAZQUEZ DUHALT Mendoza-Avila J.	DYES AND PIGMENTS	2020
31	Brome mosaic virus-like particles as siRNA nanocarriers for biomedical purposes	ANA GUADALUPE RODRIGUEZ HERNANDEZ RAFAEL VAZQUEZ DUHALT RUBEN DARIO CADENA NAVA et al.	BEILSTEIN JOURNAL OF NANOTECHNOLOGY	2020
32	Fruit peels waste for the green synthesis of silver nanoparticles with antimicrobial activity against foodborne pathogens	RAFAEL VAZQUEZ DUHALT Soto K.M. Quezada-Cervantes C.T. et al.	LWT-FOOD SCIENCE AND TECHNOLOGY	2019
33	Virus-Based Nanomotors for Cargo Delivery	VICTOR JULIAN GARCIA GRADILLA RAFAEL VAZQUEZ DUHALT Jose A. Tejeda-Rodriguez et al.	ChemNanoMat	2019
34	Enhanced laccase activity of biocatalytic hybrid copper hydroxide nanocages	ANDREY SIMAKOV RAFAEL VAZQUEZ DUHALT Silva-Torres O. et al.	ENZYME AND MICROBIAL TECHNOLOGY	2019
35	A novel and simple method for polyethylene terephthalate (PET) nanoparticle production	ANA GUADALUPE RODRIGUEZ HERNANDEZ RAFAEL VAZQUEZ DUHALT Muñoz-Tabares J.A. et al.	ENVIRONMENTAL SCIENCE-NANO	2019
36	Role and dynamics of an agmatinase-like protein (AGM-1) in <i>Neurospora crassa</i>	RAFAEL VAZQUEZ DUHALT Pérez-Mozqueda L.L. Castro-Longoria E.	FUNGAL GENETICS AND BIOLOGY	2019
37	Addition of new catalytic sites on the surface of versatile peroxidase for enhancement of LRET catalysis	RAFAEL VAZQUEZ DUHALT Sánchez-Alejandro F. Baratto M.C. et al.	ENZYME AND MICROBIAL TECHNOLOGY	2019
38	Determination of conjugated protein on nanoparticles by an adaptation of the Coomassie blue dye method	KATRIN QUESTER GUSTAVO ALONSO HIRATA FLORES RAFAEL VAZQUEZ DUHALT et al.	MethodsX	2019
39	Enhancement of antibiotics antimicrobial activity due to the silver nanoparticles impact on the cell membrane	ROBERTO VAZQUEZ MUÑOZ ANAID MEZA VILLEZCAS ELIZABETH SORIA CASTRO et al.	PLOS ONE	2019
40	Clinicopathological features and prognosis of pregnancy associated breast cancer at Instituto Nacional de Cancerología of Mexico.	EDGAR ALBERTO ALVARADO MIRANDA FERNANDO LARA ROJAS RAFAEL VAZQUEZ DUHALT et al.	JOURNAL OF CLINICAL ONCOLOGY	2018
41	Enzymatic Activation of the Emerging Drug Resveratrol	RAFAEL VAZQUEZ DUHALT Koyani R.D.	APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY	2018
42	Multifunctionalized biocatalytic P22 nanoreactor for combinatory treatment of ER+ breast cancer	ANA GUADALUPE RODRIGUEZ HERNANDEZ KARLA OYUKY JUAREZ MORENO RAFAEL VAZQUEZ DUHALT et al.	JOURNAL OF NANOBIO TECHNOLOGY	2018

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43	Efecto de la zeolita nanoestructurada con ácido lipoico sobre los parámetros productivos y rendimiento de la canal en el pollo de engorda	MARIA OFELIA MORA IZAGUIRRE KATRIN QUESTER VITALI PETRANOVSKI AFANASIEVNA et al.	Revista Mexicana De Ciencias Pecuarias	2018
44	Enzymatic detoxification of organophosphorus pesticides and related toxicants	KARLA PAULINA ALEJO GONZALEZ RAFAEL VAZQUEZ DUHALT Erik Hanson-Viana	JOURNAL OF PESTICIDE SCIENCE	2018
45	Surface modification of protein enhances encapsulation in chitosan nanoparticles	KATRIN QUESTER RUBEN PAUL GAYTAN COLIN ALEJANDRO HUERTA SAQUERO et al.	Applied Nanoscience	2018
46	Effects of extruded aquafeed on growth performance and gut microbiome of juvenile Totoaba macdonaldi	RAFAEL VAZQUEZ DUHALT FIDEL ALEJANDRO SANCHEZ FLORES Barreto-Curiel F. et al.	ANIMAL FEED SCIENCE AND TECHNOLOGY	2018
47	Membrane-less enzymatic fuel cell operated under acidic conditions	RAFAEL VAZQUEZ DUHALT Bojórquez-Vázquez L.A. Cano-Castillo U.	JOURNAL OF ELECTROANALYTICAL CHEMISTRY	2018
48	Biomaterial-based nanoreactors, an alternative for enzyme delivery	RUBEN DARIO CADENA NAVA RAFAEL VAZQUEZ DUHALT Koyani, Rina et al.	NANOTECHNOLOGY REVIEWS	2017
49	Chitosan-based biocatalytic nanoparticles for pollutant removal from wastewater	RAFAEL VAZQUEZ DUHALT Alarcón-Payán, D.A. Koyani, R.D.	ENZYME AND MICROBIAL TECHNOLOGY	2017
50	Cytochrome P450 Bioconjugate as a Nanovehicle for Improved Chemotherapy Treatment	KARLA OYUKY JUAREZ MORENO ALEJANDRO HUERTA SAQUERO RAFAEL VAZQUEZ DUHALT et al.	MACROMOLECULAR BIOSCIENCE	2017
51	Biocatalytic virus capsid as nanovehicle for enzymatic activation of Tamoxifen in tumor cells	RAFAEL VAZQUEZ DUHALT Tapia-Moreno, A. Juarez-Moreno, K. et al.	BIOTECHNOLOGY JOURNAL	2017
52	PEGylation of cytochrome P450 enhances its biocatalytic performance for pesticide transformation	ISMAEL SECUNDINO VELAZQUEZ YVONNE JANE ROSENSTEIN AZOULAY ALEJANDRO HUERTA SAQUERO et al.	INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES	2017
53	Substrate ionization energy influences the epoxidation of m-substituted styrenes catalyzed by chloroperoxidase from Caldariomyces fumago	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT Munoz-Guerrero, Fabio A. et al.	CATALYSIS COMMUNICATIONS	2016
54	Biotransformation of petroleum asphaltenes and high molecular weight polycyclic aromatic hydrocarbons by Neosartorya fischeri	LUCIA PEREZGASGA CISCOMANI ALEJANDRO HUERTA SAQUERO RAFAEL VAZQUEZ DUHALT et al.	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	2016

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55	Biocatalytic Performance of Chloroperoxidase from <i>Caldariomyces fumago</i> Immobilized onto TiO <sub>2</sub> Based Supports	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT Munoz-Guerrero, Fabio A. et al.	TOPICS IN CATALYSIS	2016
56	New Bismuth Germanate Oxide Nanoparticle Material for Biolabel Applications in Medicine	OSCAR EDEL CONTRERAS LOPEZ YVONNE JANE ROSENSTEIN AZOULAY RAFAEL VAZQUEZ DUHALT et al.	JOURNAL OF NANOMATERIALS	2016
57	Tryptophan-surface modification of versatile peroxidase from <i>Bjerkandera adusta</i> enhances its catalytic performance	KARLA OYUKY JUAREZ MORENO RAFAEL VAZQUEZ DUHALT Sánchez-Alejandro F. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2016
58	Enhancement of Peroxidase Stability Against Oxidative Self-Inactivation by Co-immobilization with a Redox-Active Protein in Mesoporous Silicon and Silica Microparticles	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT Sahare, P. et al.	NANOSCALE RESEARCH LETTERS	2016
59	Degradation of endosulfan by strains of <i>Auricularia fuscusuccinea</i>	RAFAEL VAZQUEZ DUHALT Francisco Yanez-Montalvo, Alfredo Ernesto Sanchez, Jose et al.	Sydowia	2016
60	Synthesis and Complete Antimicrobial Characterization of CEOBACTER, an Ag-Based Nanocomposite	OSCAR RAYMOND HERRERA VITALI PETRANOVSKI AFANASIEVNA RAFAEL VAZQUEZ DUHALT et al.	PLOS ONE	2016
61	Laccase encapsulation in chitosan nanoparticles enhances the protein stability against microbial degradation	RAFAEL VAZQUEZ DUHALT Koyani, Rina D.	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	2016
62	Oxidative transformation of dibenzothiophene by chloroperoxidase enzyme immobilized on (1D)-?-Al <sub>2</sub> O <sub>3</sub> nanorods	KARLA OYUKY JUAREZ MORENO J. Noe Diaz de Leon TRINO ARMANDO ZEPEDA PARTIDA et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2015
63	LIPID PEROXIDATION AND PROTEIN OXIDATION INDUCED BY DIFFERENT NANOPARTICLES IN ZEBRAFISH ORGANS	Y. Carrillo C. TorresDuarte M. J. Oviedo et al.	APPLIED ECOLOGY AND ENVIRONMENTAL RESEARCH	2015
64	EPR and LC-MS studies on the mechanism of industrial dye decolorization by versatile peroxidase from <i>Bjerkandera adusta</i>	KARLA OYUKY JUAREZ MORENO RAFAEL VAZQUEZ DUHALT Baratto, Maria Camilla et al.	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	2015
65	Enhancement of operational stability of chloroperoxidase from <i>Caldariomyces fumago</i> by immobilization onto mesoporous supports and the use of co-solvents	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT MunozGuerrero, Fabio A. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2015

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66	Microbial and Enzymatic Biotransformations of Asphaltenes	E. L. HernandezLopez MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT	PETROLEUM SCIENCE AND TECHNOLOGY	2015
67	Design of a VLP-nanovehicle for CYP450 enzymatic activity delivery	Lorena SanchezSanchez Alejandro TapiaMoreno KARLA OYUKY JUAREZ MORENO et al.	JOURNAL OF NANOBIOTECHNOLOGY	2015
68	Antioxidant Capacity of Poly(Ethylene Glycol) (PEG) as Protection Mechanism Against Hydrogen Peroxide Inactivation of Peroxidases	KARLA OYUKY JUAREZ MORENO MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT	APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY	2015
69	Microarray analysis of Neosartorya fischeri using different carbon sources, petroleum asphaltenes and glucose-peptone	RAFAEL VAZQUEZ DUHALT Hernández-López E.L. Ramírez-Puebla S.T.	Genomics Data	2015
70	Carrier-free immobilization of lipase from candida rugosa with polyethyleneimines by carboxyl-activated cross-linking	RAFAEL VAZQUEZ DUHALT Velasco-Lozano, Susana Lopez-Gallego, Fernando et al.	Biomacromolecules	2014
71	Chemotherapy pro-drug activation by biocatalytic virus-like nanoparticles containing cytochrome P450	Lorena Sanchez Sanchez RUBEN DARIO CADENA NAVA LAURA ALICIA PALOMARES AGUILERA et al.	ENZYME AND MICROBIAL TECHNOLOGY	2014
72	QM/MM Molecular Modeling and Marcus Theory in the Molecular Design of Electrodes for Enzymatic Fuel Cells	RAFAEL VAZQUEZ DUHALT SERGIO ANDRES AGUILA PUENTES Andres A. Arrocha et al.	CHEMELECTROCHEMISTRY	2014
73	Dual-enzyme natural motors incorporating decontamination and propulsion capabilities	RAFAEL VAZQUEZ DUHALT Sattayasamitsathit, Sirilak Kaufmann, Kevin et al.	RSC ADVANCES	2014
74	Enzyme orientation for direct electron transfer in an enzymatic fuel cell with alcohol oxidase and laccase electrodes	Andres A. Arrocha SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT et al.	BIOSENSORS & BIOELECTRONICS	2014
75	Spectroscopic characterization of 2,6-dimethoxyphenol radical intermediates in the Coriolopsis gallica laccase-mediator system	RAFAEL VAZQUEZ DUHALT SERGIO ANDRES AGUILA PUENTES Martorana, Andrea et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2014
76	Immobilization of peroxidase enzyme onto the porous silicon structure for enhancing its activity and stability	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT Sahare, Padmavati et al.	NANOSCALE RESEARCH LETTERS	2014
77	Efficient Biocatalytic Degradation of Pollutants by Enzyme-Releasing Self-Propelled Motors	RAFAEL VAZQUEZ DUHALT Orozco J. Vilela D. et al.	CHEMISTRY-A EUROPEAN JOURNAL	2014
78	Bubble-propelled micromotors for enhanced transport of passive tracers	RAFAEL VAZQUEZ DUHALT Orozco J. Jurado-Sánchez B. et al.	Langmuir	2014



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79	Self-propelled chemically-powered plant-tissue biomotors	RAFAEL VAZQUEZ DUHALT Gu Y. Sattayasamitsathit S. et al.	CHEMICAL COMMUNICATIONS	2013
80	Unusual activation during peroxidase reaction of a cytochrome c variant	SERGIO ANDRES AGUILA PUENTES MARTHA ELENA SOSA TORRES RAFAEL VAZQUEZ DUHALT et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2013
81	Prediction model based on decision tree analysis for laccase mediators	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT Medina, Fabiola et al.	ENZYME AND MICROBIAL TECHNOLOGY	2013
82	Fenamiphos is recalcitrant to the hydrolysis by alloforms PON1 Q192R of human serum	RAFAEL VAZQUEZ DUHALT Damianys, Almenares-Lopez Maria Fernanda, Martinez-Salazar et al.	TOXICOLOGY IN VITRO	2013
83	Peroxidase activity stabilization of cytochrome P450BM3 by rational analysis of intramolecular electron transfer	SERGIO ANDRES AGUILA PUENTES MARCELA AYALA ACEVES CESAR VICENTE FERREIRA BATISTA et al.	JOURNAL OF INORGANIC BIOCHEMISTRY	2013
84	A spectroscopic characterization of a phenolic natural mediator in the laccase biocatalytic reaction	RAFAEL VAZQUEZ DUHALT Martorana, Andrea Sorace, Lorenzo et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2013
85	Nitrogen limitation in neochloris oleoabundans: A reassessment of its effect on cell growth and biochemical composition	Adriana Garibay Hernandez RAFAEL VAZQUEZ DUHALT LEOBARDO SERRANO CARREON et al.	APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY	2013
86	Micromotor-based high-yielding fast oxidative detoxification of chemical threats	RAFAEL VAZQUEZ DUHALT Orozco, Jahir Cheng, Guanzhi et al.	ANGEWANDTE CHEMIE-INTERNATIONAL EDITION	2013
87	Identification of volatile compounds produced by the bacterium Burkholderia tropica that inhibit the growth of fungal pathogens	Silvia Tenorio Salgado JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT et al.	Bioengineered Bugs	2013
88	Reduced coke formation and aromaticity due to chloroperoxidase-catalyzed transformation of asphaltenes from Maya crude oil	MARCELA AYALA ACEVES Edna L. Hernandez Lopez LUCIA PEREZGASGA CISCOMANI et al.	Fuel	2012
89	SCANNING ELECTRONIC MICROSCOPY EVIDENCE OF PHENOL-FORMALDEHYDE RESINS IN BIODEGRADATION WITH LIGNINOLITIC FUNGI	RAFAEL VAZQUEZ DUHALT Andrade, GIP Vazquez, RR et al.	REVISTA INTERNACIONAL DE CONTAMINACION AMBIENTAL	2012

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90	Pesticide transformation by a variant of CYPBM3 with improved peroxygenase activity	Lorena Sanchez Sanchez ROSA ROMAN MIRANDA RAFAEL VAZQUEZ DUHALT	PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY	2012
91	Substitution of the Catalytic Metal and Protein PEGylation Enhances Activity and Stability of Bacterial Phosphotriesterase	LUCIA PEREZGASGA CISCOMANI Lorena Sanchez Sanchez SERGIO ANDRES AGUILA PUENTES et al.	APPLIED BIOCHEMISTRY AND BIOTECHNOLOG Y	2012
92	Peroxidase-mediated synthesis of water-soluble fully sulfonated polyaniline	RAFAEL VAZQUEZ DUHALT Roman, Paulina Cruz-Silva, Rodolfo	SYNTHETIC METALS	2012
93	Photoluminescence of Europium-Activated Hydroxyapatite Nanoparticles in Body Fluids	OSCAR EDEL CONTRERAS LOPEZ RAFAEL VAZQUEZ DUHALT GUSTAVO ALONSO HIRATA FLORES et al.	SCIENCE OF ADVANCED MATERIALS	2012
94	Laccase-Mediated Transformations of Endocrine Disrupting Chemicals Abolish Binding Affinities to Estrogen Receptors and Their Estrogenic Activity in Zebrafish	Cristina Torres Duarte RAFAEL VAZQUEZ DUHALT Teresa Viana, Maria	APPLIED BIOCHEMISTRY AND BIOTECHNOLOG Y	2012
95	Evidence of biodegradation of phenolic resins with ligninolytic fungi by scanning electron microscopy [Evidencia de la biodegradación de resinas fenólicas Con hongos ligninolíticos por microscopía electrónica de barrido]	RAFAEL VAZQUEZ DUHALT Ponce Andrade G.I. Rodríguez Vázquez R. et al.	REVISTA INTERNACIONAL DE CONTAMINACIO N AMBIENTAL	2012
96	Heme destruction, the main molecular event during the peroxide-mediated inactivation of chloroperoxidase from <i>Caldariomyces fumago</i>	MARCELA AYALA ACEVES CESAR VICENTE FERREIRA BATISTA RAFAEL VAZQUEZ DUHALT	JOURNAL OF BIOLOGICAL INORGANIC CHEMISTRY	2011
97	Molecular design of laccase cathode for direct electron transfer in a biofuel cell	Javier Martinez Ortiz RAFAEL VAZQUEZ DUHALT Flores, Roberto	BIOSENSORS & BIOELECTRONIC S	2011
98	Enhancing oxidation activity and stability of iso-1-cytochrome c and chloroperoxidase by immobilization in nanostructured supports	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT Covarrubias, Cristian et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2011
99	First evidence of mineralization of petroleum asphaltene by a strain of <i>Neosartorya fischeri</i>	CRISTINA URIBE ALVAREZ MARCELA AYALA ACEVES LUCIA PEREZGASGA CISCOMANI et al.	MICROBIAL BIOTECHNOLOG Y	2011
100	Syringaldehyde a true laccase mediator Comments on the Letter to the Editor from Jeon, J-R., Kim, E-J. and Chang, Y-S.	C. Torres Duarte SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT	Chemosphere	2011

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101	The effect of broccoli in diet on the cytochrome P450 activities of tilapia fish ( <i>Oreochromis niloticus</i> ) during phenol exposure	RAFAEL VAZQUEZ DUHALT Davila, Jorge Moises Marcial-Martinez, L. et al.	Aquaculture	2010
102	Enzymatic Synthesis of Semiconductor Polymers by Chloroperoxidase of <i>Caldariomyces fumago</i>	Adriana M. Longoria HAILIN ZHAO HU RAFAEL VAZQUEZ DUHALT	APPLIED BIOCHEMISTRY AND BIOTECHNOLOG Y	2010
103	Effect of broccoli ( <i>Brassica oleracea</i> ) and its phytochemical sulforaphane in balanced diets on the detoxification enzymes levels of tilapia ( <i>Oreochromis niloticus</i> ) exposed to a	RAFAEL VAZQUEZ DUHALT Villa-Cruz, V. Davila, J. et al.	Chemosphere	2009
104	Halogenated pesticide transformation by a laccase-mediator system	Cristina Torres Duarte ROSA ROMAN MIRANDA JOSE RAUNEL TINOCO VALENCIA et al.	Chemosphere	2009
105	Stereoselective oxidation of R-(+)-limonene by chloroperoxidase from <i>Caldariomyces fumago</i>	RAFAEL VAZQUEZ DUHALT JOSE RAUNEL TINOCO VALENCIA Manuel Rivera et al.	GREEN CHEMISTRY	2008
106	Chloroperoxidase-mediated transformation of highly halogenated monoaromatic compounds	Adriana Longoria JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT	Chemosphere	2008
107	A novel heme peroxidase from <i>Raphanus sativus</i> intrinsically resistant to hydrogen peroxide	P. Gil Rodriguez CESAR VICENTE FERREIRA BATISTA RAFAEL VAZQUEZ DUHALT et al.	ENGINEERING IN LIFE SCIENCES	2008
108	Biodegradation of organic pollutants by halophilic bacteria and archaea	Dayanira Paniagua RAFAEL VAZQUEZ DUHALT Le Borgne, Sylvie	JOURNAL OF MOLECULAR MICROBIOLOGY AND BIOTECHNOLOG Y	2008
109	Fungal enzymes for environmental purposes, a molecular biology challenge	RAFAEL VAZQUEZ DUHALT Pickard, Michael A. MARCELA AYALA ACEVES	JOURNAL OF MOLECULAR MICROBIOLOGY AND BIOTECHNOLOG Y	2008
110	Chemical modification of turnip peroxidase with methoxypolyethylene glycol enhances activity and stability for phenol removal using the immobilized enzyme	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Quintanilla-Guerrero, F. et al.	JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY	2008

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111	Journal of Molecular Microbiology and Biotechnology: Introduction	RAFAEL VAZQUEZ DUHALT	JOURNAL OF MOLECULAR MICROBIOLOGY AND BIOTECHNOLOGY	2008
112	The prospects for peroxidase-based biorefining of petroleum fuels	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT Verdin J.	BIOCATALYSIS AND BIOTRANSFORMATION	2007
113	Role of oxidizing mediators and tryptophan 172 in the decoloration of industrial dyes by the versatile peroxidase from <i>Bjerkandera adusta</i>	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Verdin J.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2007
114	Effect of alkaline deamidation on the structure, surface hydrophobicity, and emulsifying properties of the Z19 $\alpha$ -zein	ROBERTO ALEJANDRO ARREGUIN ESPINOSA DE LOS MONTEROS RAFAEL VAZQUEZ DUHALT AMELIA MARIA DE GUADALUPE FARRES GONZALEZ SARABIA et al.	JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY	2007
115	Nonylphenol algal bioaccumulation and its effect through the trophic chain	RAFAEL VAZQUEZ DUHALT Correa-Reyes G. Viana M.T. et al.	Chemosphere	2007
116	A catalytic approach to estimate the redox potential of heme-peroxidases	MARCELA AYALA ACEVES ROSA ROMAN MIRANDA RAFAEL VAZQUEZ DUHALT	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	2007
117	Nonylphenol, an integrated vision of a pollutant. Scientific review	RAFAEL VAZQUEZ DUHALT Marquez-Rocha F. Ponce E. et al.	APPLIED ECOLOGY AND ENVIRONMENTAL RESEARCH	2006
118	Expression of the <i>melA</i> gene from <i>Rhizobium etli</i> CFN42 in <i>Escherichia coli</i> and characterization of the encoded tyrosinase	ALFREDO MARTINEZ JIMENEZ JOSE RAUNEL TINOCO VALENCIA RAMON DE ANDA HERRERA et al.	ENZYME AND MICROBIAL TECHNOLOGY	2006
119	Role of phenanthrene in rhamnolipid production by <i>P. putida</i> in different media	RAFAEL VAZQUEZ DUHALT Martínez-Toledo A. Ríos-Leal R. et al.	ENVIRONMENTAL TECHNOLOGY	2006
120	Mechanism of versatile peroxidase inactivation by $Ca^{2+}$ depletion	RAFAEL VAZQUEZ DUHALT Verdín J. Pogni R. et al.	BIOPHYSICAL CHEMISTRY	2006

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121	Effect of temperature and pH on the secondary structure and processes of oligomerization of 19 kDa alpha-zein	ROBERTO ALEJANDRO ARREGUIN ESPINOSA DE LOS MONTEROS RAFAEL VAZQUEZ DUHALT AMELIA MARIA DE GUADALUPE FARRÉS GONZALEZ SARABIA et al.	BIOCHIMICA ET BIOPHYSICA ACTA-PROTEINS AND PROTEOMICS	2006
122	Oxidative stabilization of iso-1-cytochrome c by redox-inspired protein engineering.	MARIA BRENDA VALDERRAMA BLANCO RAFAEL VAZQUEZ DUHALT García-Arellano H. et al.	FASEB JOURNAL	2006
123	Characterization of a 19 kDa $\alpha$ -zein of high purity	ROBERTO ALEJANDRO ARREGUIN ESPINOSA DE LOS MONTEROS MARIA AMANDA GALVEZ MARISCAL MARICARMEN QUIRASCO BARUCH et al.	JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY	2005
124	Phylogenetic and biochemical characterisation of a recombinant laccase from <i>Trametes versicolor</i>	MARIA BRENDA VALDERRAMA BLANCO JORGE LUIS FOLCH MALLOL RAFAEL VAZQUEZ DUHALT et al.	FEMS MICROBIOLOGY LETTERS	2005
125	Tryptophan-based radical in the catalytic mechanism of versatile peroxidase from <i>Bjerkandera adusta</i>	MARIA BRENDA VALDERRAMA BLANCO RAFAEL VAZQUEZ DUHALT Pogni R. et al.	BIOCHEMISTRY	2005
126	Electron-balance during the oxidative self-inactivation of cytochrome c	MARIA BRENDA VALDERRAMA BLANCO RAFAEL VAZQUEZ DUHALT	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2005
127	Alkali and halide-resistant catalysis by the multipotent oxidase from <i>Marinomonas mediterranea</i> .	ROSA ROMAN MIRANDA RAFAEL VAZQUEZ DUHALT MARIA BRENDA VALDERRAMA BLANCO et al.	JOURNAL OF BIOTECHNOLOG Y	2005
128	Transformation of halogenated pesticides by versatile peroxidase from <i>Bjerkandera adusta</i>	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Davila-Vazquez G. et al.	ENZYME AND MICROBIAL TECHNOLOGY	2005
129	Biocatalytic Transformation of Porphyrins by Chemical Modified Cytochrome C	RAFAEL VAZQUEZ DUHALT García-Arellano H. Buenrostro-Gonzalez E.	BIOTECHNOLOG Y AND BIOENGINEERIN G	2004
130	Petroleum Biotechnology: Developments and Perspectives: Preface	RAFAEL VAZQUEZ DUHALT	STUD SURF SCI CATAL	2004
131	Enzymatic catalysis on petroleum products	RAFAEL VAZQUEZ DUHALT MARCELA AYALA ACEVES	STUD SURF SCI CATAL	2004

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132	Evolutionary and structural diversity of fungal laccases	MARIA BRENDA VALDERRAMA BLANCO PATRICIA ESTER LAPPE OLIVERAS RAFAEL VAZQUEZ DUHALT et al.	ANTONIE VAN LEEUWENHOEK INTERNATIONAL JOURNAL OF GENERAL AND MOLECULAR MICROBIOLOGY	2003
133	Microsomal transformation of organophosphorus pesticides by white rot fungi	MARIA BRENDA VALDERRAMA BLANCO RAFAEL VAZQUEZ DUHALT Jauregui J. et al.	Biodegradation	2003
134	Manganese-lignin peroxidase hybrid from Bjerkandera adusta oxidizes polycyclic aromatic hydrocarbons more actively in the absence of manganese	RAFAEL VAZQUEZ DUHALT Wang Y. Pickard M.A.	CANADIAN JOURNAL OF MICROBIOLOGY	2003
135	Nature-Inspired Creation of Protein-Polysaccharide Conjugate and Its Subsequent Assembly onto a Patterned Surface	RAFAEL VAZQUEZ DUHALT Chen T. Small D.A. et al.	Langmuir	2003
136	Suicide inactivation of peroxidases and the challenge of engineering more robust enzymes	MARIA BRENDA VALDERRAMA BLANCO RAFAEL VAZQUEZ DUHALT MARCELA AYALA ACEVES	CHEMISTRY & BIOLOGY	2002
137	Effect of pollutants on the ergosterol content as indicator of fungal biomass	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Barajas-Aceves M. et al.	JOURNAL OF MICROBIOLOGICAL METHODS	2002
138	Cross-linked crystals of chloroperoxidase	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT Horjales E. et al.	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	2002
139	Purification, characterization, and chemical modification of manganese peroxidase from Bjerkandera adusta UAMH 8258	RAFAEL VAZQUEZ DUHALT Wang Y. Pickard M.A.	CURRENT MICROBIOLOGY	2002
140	Will biochemical catalysis impact the petroleum refining industry?	RAFAEL VAZQUEZ DUHALT MARIA BRENDA VALDERRAMA BLANCO Torres E. et al.	ENERGY & FUELS	2002
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142	High temperature biocatalysis by chemically modified cytochrome c	MARIA BRENDA VALDERRAMA BLANCO GLORIA SAAB RINCON RAFAEL VAZQUEZ DUHALT et al.	BIOCONJUGATE CHEMISTRY	2002
143	Electroreduction of O <sub>2</sub> to water at 0.6 V (SHE) at pH 7 on the 'wired' Pleurotus ostreatus laccase cathode	RAFAEL VAZQUEZ DUHALT Barton S.C. Pickard M. et al.	BIOSENSORS & BIOELECTRONIC S	2002
144	Peroxidase-mediated transformation of hydroxy-9,10-anthraquinones	ROSA ROMAN MIRANDA RAFAEL VAZQUEZ DUHALT MANUEL JIMENEZ ESTRADA et al.	Phytochemistry	2002
145	Chemical modification of heme group improves hemoglobin affinity for hydrophobic substrates in organic media	RAFAEL VAZQUEZ DUHALT Torres E. Baeza A.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2002
146	Enzyme conjugation to the polysaccharide chitosan: Smart biocatalysts and biocatalytic hydrogels	RAFAEL VAZQUEZ DUHALT JOSE RAUNEL TINOCO VALENCIA D'Antonio P. et al.	BIOCONJUGATE CHEMISTRY	2001
147	Combinatorial screening for enzyme-mediated coupling. Tyrosinase-catalyzed coupling to create protein-chitosan conjugates	RAFAEL VAZQUEZ DUHALT Chen T. Wu C.-F. et al.	Biomacromole cules	2001
148	Effect of growth conditions on the production of manganese peroxidase by three strains of Bjerkandera adusta	RAFAEL VAZQUEZ DUHALT Wang Y. Pickard M.A.	CANADIAN JOURNAL OF MICROBIOLOGY	2001
149	Kinetic differences of purified laccases from six pleurotus ostreatus strains	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Pickard M.A.	LETTERS IN APPLIED MICROBIOLOGY	2001
150	Peroxidase catalyzed grafting of gallate esters onto the polysaccharide chitosan	RAFAEL VAZQUEZ DUHALT Vachoud L. Chen T. et al.	ENZYME AND MICROBIAL TECHNOLOGY	2001
151	Enzymatic coupling of phenol vapors onto chitosan	RAFAEL VAZQUEZ DUHALT Wu L.-Q. Chen T. et al.	BIOTECHNOLOG Y AND BIOENGINEERIN G	2001
152	Molecular imprinting for the selective adsorption of organosulphur compounds present in fuels	RAFAEL VAZQUEZ DUHALT EDUARDO BARZANA GARCIA Castro B. et al.	ANALYTICA CHIMICA ACTA	2001
153	Spectroscopic characterization of a manganese-lignin peroxidase hybrid isozyme produced by Bjerkandera adusta in the absence of manganese: Evidence of a protein centred radical by hydrogen peroxide	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT Baratto M.C. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2001

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154	Biocatalytic chlorination of aromatic hydrocarbons by chloroperoxidase of <i>caldariomyces fumago</i>	RAFAEL VAZQUEZ DUHALT MARCELA AYALA ACEVES Márquez-Rocha F.J.	Phytochemistry	2001
155	A cytochrome c variant resistant to heme degradation by hydrogen peroxide	RAFAEL VAZQUEZ DUHALT Villegas J.A. Mauk A.G.	CHEMISTRY & BIOLOGY	2000
156	Substrate specificity and ionization potential in chloroperoxidase- catalyzed oxidation of diesel fuel	MARCELA AYALA ACEVES AGUSTIN LOPEZ MUNGUIA CANALES RAFAEL VAZQUEZ DUHALT et al.	ENVIRONMENTAL SCIENCE & TECHNOLOGY	2000
157	Chemical modification of hemoglobin improves biocatalytic oxidation of PAHs	RAFAEL VAZQUEZ DUHALT Torres E.	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	2000
158	Modified cytochrome c/H <sub>2</sub> O <sub>2</sub> system: Spectroscopic EPR investigation of the biocatalytic behaviour	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Busi E. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	2000
159	Erratum: Chemical modification of hemoglobin improves biocatalytic oxidation of PAHS (Biochemical and Biophysical Research Communication (2000) 273:3 (820-823))	RAFAEL VAZQUEZ DUHALT Torres E.	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	2000
160	Biodegradation of soil-adsorbed polycyclic aromatic hydrocarbons by the white rot fungus <i>Pleurotus ostreatus</i>	ZOILA VANESSA HERNANDEZ RODRIGUEZ RAFAEL VAZQUEZ DUHALT Márquez-Rocha F.J.	BIOTECHNOLOGY LETTERS	2000
161	High production of ligninolytic enzymes from white rot fungi in cereal bran liquid medium	ROSA ROMAN MIRANDA RAFAEL VAZQUEZ DUHALT Pickard M.A. et al.	CANADIAN JOURNAL OF MICROBIOLOGY	1999
162	Enzymatic synthesis of fructosyl glycerol	FERNANDO GONZALEZ MUÑOZ MARIA DE LOS ANGELES PEREZ OSEGUERA MANUEL JIMENEZ ESTRADA et al.	JOURNAL OF CARBOHYDRATE CHEMISTRY	1999
163	Modelling the alcoholysis reaction of $\beta$ -galactosidase with butanol in reverse micelles	RAFAEL VAZQUEZ DUHALT AGUSTIN LOPEZ MUNGUIA CANALES Moreno-Beltrán A. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	1999
164	The branched-chain dodecylbenzene sulfonate degradation pathway of <i>Pseudomonas aeruginosa</i> W51D involves a novel route for degradation of the surfactant lateral alkyl chain	RAFAEL VAZQUEZ DUHALT GLORIA SOBERON CHAVEZ Campos-García J. et al.	APPLIED AND ENVIRONMENTAL MICROBIOLOGY	1999



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165	Cytochrome c as a biocatalyst	RAFAEL VAZQUEZ DUHALT	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	1999
166	Hydroxybenzotriazole increases the range of textile dyes decolorized by immobilized laccase	RAFAEL VAZQUEZ DUHALT Reyes P. Pickard M.A.	BIOTECHNOLOGY LETTERS	1999
167	Polycyclic aromatic hydrocarbon metabolism by white rot fungi and oxidation by <i>Coriolopsis gallica</i> UAMH 8260 laccase	ROSA ROMAN MIRANDA JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT et al.	APPLIED AND ENVIRONMENTAL MICROBIOLOGY	1999
168	Growth characteristics of <i>Pleurotus ostreatus</i> in bioreactors	RAFAEL VAZQUEZ DUHALT Márquez-Rocha F.J. Guillén N. G.K. et al.	BIOTECHNOLOGY	1999
169	Industrial dye decolorization by laccases from ligninolytic fungi	RAFAEL VAZQUEZ DUHALT Rodríguez E. Pickard M.A.	CURRENT MICROBIOLOGY	1999
170	Diesel removal from a contaminated soil by natural hydrocarbon-degrading microorganisms	RAFAEL VAZQUEZ DUHALT Marquez-Rocha F.J.	Battelle Memorial Institute International In Situ And On-Site Bioreclamation Symposium Proceedings	1999
171	Chemical modification of cytochrome C improves their catalytic properties in oxidation of polycyclic aromatic hydrocarbons	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT	ENZYME AND MICROBIAL TECHNOLOGY	1998
172	Biocatalytic oxidation of fuel as an alternative to biodesulfurization	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Hernandez V. et al.	FUEL PROCESSING TECHNOLOGY	1998
173	Chloroperoxidase-mediated oxidation of organophosphorus pesticides	LUIS VELASCO IBARRA RAFAEL VAZQUEZ DUHALT Hernandez J. et al.	PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY	1998
174	Thermodynamic hydrophobicity of aqueous mixtures of water-miscible organic solvents predicts peroxidase activity	EDUARDO BARZANA GARCIA RAFAEL VAZQUEZ DUHALT Torres E. et al.	JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC	1998

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175	Determination of genotoxicity using a chloroperoxidase-mediated model of PAH-DNA adduct formation	RAFAEL VAZQUEZ DUHALT Marquez-Rocha F.J. Pica-Granados Y. et al.	BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY	1997
176	Biocatalytic oxidation of polycyclic aromatic hydrocarbons in media containing organic solvents	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Torres E.	WATER SCIENCE AND TECHNOLOGY	1997
177	Biochemical method for chlorine dioxide determination	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Hernandez-Saavedra D. et al.	ANALYTICAL BIOCHEMISTRY	1996
178	Solvent hydrophobicity predicts biocatalytic behaviour of lignin peroxidase and cytochrome c in aqueous solution of water-miscible organic solvents	JOSE RAUNEL TINOCO VALENCIA RAFAEL VAZQUEZ DUHALT Torres E.	JOURNAL OF BIOTECHNOLOGY	1996
179	The effect of chemical, physical and enzymatic treatments on the dewatering of tar sands tailings	RAFAEL VAZQUEZ DUHALT Theriault Y. Masliyah J.H. et al.	Fuel	1995
180	Kinetics of chemically modified lignin peroxidase and enzymatic oxidation of aromatic nitrogen-containing compounds	RAFAEL VAZQUEZ DUHALT Westlake D.W.S. Fedorak P.M.	APPLIED MICROBIOLOGY AND BIOTECHNOLOGY	1995
181	Biocatalytic oxidation of polycyclic aromatic hydrocarbons by hemoglobin and hydrogen peroxide	LUIS VELASCO IBARRA RAFAEL VAZQUEZ DUHALT Ortiz-Leon M.	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	1995
182	Osmotic adjustment in marine yeast	RAFAEL VAZQUEZ DUHALT Hernández-saavedra N.Y. Ochoa J.L.	JOURNAL OF PLANKTON RESEARCH	1995
183	Site-directed mutagenesis improves the biocatalytic activity of iso-1-cytochrome c in polycyclic hydrocarbon oxidation	RAFAEL VAZQUEZ DUHALT Torres E. Victor Sandoval J. et al.	ENZYME AND MICROBIAL TECHNOLOGY	1995
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186	Chloroperoxidase-mediated modifications of petroporphyrins and asphaltenes	RAFAEL VAZQUEZ DUHALT Fedorak P.M. Semple K.M. et al.	ENZYME AND MICROBIAL TECHNOLOGY	1993
187	Cytochrome c as a biocatalyst for the oxidation of thiophenes and organosulfides	RAFAEL VAZQUEZ DUHALT Westlake D.W.S. Fedorak P.M.	ENZYME AND MICROBIAL TECHNOLOGY	1993
188	Effect of water-miscible organic solvents on the catalytic activity of cytochrome c	RAFAEL VAZQUEZ DUHALT Semple K.M. Westlake D.W.S. et al.	ENZYME AND MICROBIAL TECHNOLOGY	1993
189	Role of enzyme hydrophobicity in biocatalysis in organic solvents	RAFAEL VAZQUEZ DUHALT Fedorak P.M. Westlake D.W.S.	ENZYME AND MICROBIAL TECHNOLOGY	1992
190	Effect of a salt-osmotic upshock on the edaphic microalga Neochloris oleoabundans	RAFAEL VAZQUEZ DUHALT BAND, C.J. ARREDONDO-VEGA, B.O. et al.	PLANT CELL AND ENVIRONMENT	1992
191	Variation in polar-group content in lipids of cowpea ( <i>Vigna unguiculata</i> ) Cell cultures as a mechanism of haloadaptation	RAFAEL VAZQUEZ DUHALT Alcaraz-Meléndez L. Greppin H.	PLANT CELL TISSUE AND ORGAN CULTURE	1991
192	Haloadaptation of the green alga <i>Botryococcus braunii</i> (race a)	RAFAEL VAZQUEZ DUHALT Arredondo-Vega B.O.	Phytochemistry	1991
193	Effect of light on the accumulation of neutral lipids and the biomass production of the alga, <i>Botryococcus sudeticus</i> , Chlorophyceae [Effet de la lumiere sur l'accumulation de lipides neutres et la composition de la biomasse chez l'algue Botr	RAFAEL VAZQUEZ DUHALT	Cryptogamie: Algologie	1991
194	Extracellular accumulation of high specific-activity peroxidase by cell suspension cultures of cowpea	RAFAEL VAZQUEZ DUHALT Moreno O.A.V. Nolasco H.	PLANT CELL REPORTS	1990
195	Environmental impact of used motor oil	RAFAEL VAZQUEZ DUHALT	SCIENCE OF THE TOTAL ENVIRONMENT	1989
196	Peroxidase activity in calluses and cell suspension cultures of radish <i>Raphanus sativus</i> var. Cherry Bell	RAFAEL VAZQUEZ DUHALT Moreno V. O.A.	PLANT CELL TISSUE AND ORGAN CULTURE	1989



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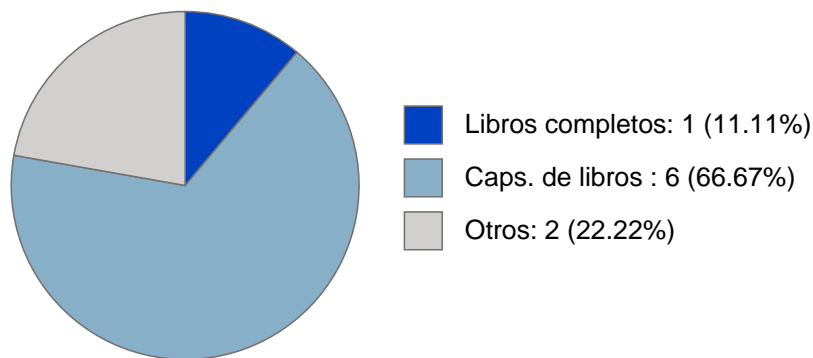
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197	Growth and production of cell constituents in batch cultures of botryococcus sudeticus	RAFAEL VAZQUEZ DUHALT Greppin H.	Phytochemistry	1987
198	Biodegradation of used motor oil by bacteria promotes the solubilization of heavy metals	RAFAEL VAZQUEZ DUHALT Greppin H.	SCIENCE OF THE TOTAL ENVIRONMENT	1986

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### LIBROS Y CAPITULOS CON ISBN

#### Obras con registro ISBN



#	Título	Autores	Alcance	Año	ISBN
1	Environmental Oil Biocatalysis	RAFAEL VAZQUEZ DUHALT	Capítulo de un Libro	2023	9781000944747
2	Biocatalytic Nanoreactors for Medical Purposes	OSCAR GONZALEZ DAVIS KANCHAN CHAUHAN RAFAEL VAZQUEZ DUHALT et al.	Article	2019	9780429295034
3	Termodinámica Biológica	RAFAEL VAZQUEZ DUHALT	Libro Completo	2019	9786077551478
4	Application of Microorganisms to the Processing and Upgrading of Crude Oil and Fractions	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT MIGUEL ANGEL MORALES MENDOZA et al.	Article	2017	9783319504360
5	¿Porque inmovilizar enzimas en soportes nanoestructurados	SERGIO ANDRES AGUILA PUENTES RAFAEL VAZQUEZ DUHALT	Capítulo de un Libro	2016	9786070281440
6	Produccion de biodiesel a partir de microalgas	ALFREDO MARTINEZ JIMENEZ RAFAEL VAZQUEZ DUHALT	Capítulo de un Libro	2012	9786078158744
7	Applications and prospective of peroxidase biocatalysis in the environmental field	RAFAEL VAZQUEZ DUHALT Torres-Duarte C.	Capítulo de un Libro	2010	9783642126260



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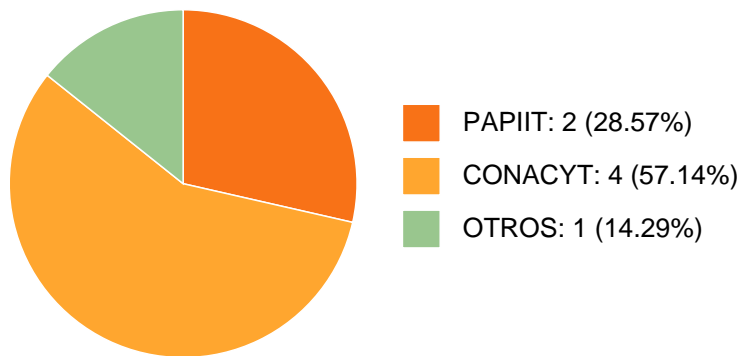
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8	Application of microorganisms to the processing and upgrading of crude oil and fractions	MARCELA AYALA ACEVES RAFAEL VAZQUEZ DUHALT	Capítulo de un Libro	2010	9783540775843
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**PARTICIPACIÓN EN PROYECTOS**

**Histórico de participación en proyectos**



#	Nombre	Participantes	Fuente	Fecha inicio	Fecha fin
1	Nano-vehículos biocatalíticos para usos médicos.	RAFAEL VAZQUEZ DUHALT	Recursos CONACYT	12-07-2016	12-07-2019
2	Implementación de redes de observaciones oceanográficas, físicas, Geoquímicas ecológicas para la generación de escenarios ante posibles contingencias relacionadas a la exploración y producción de hidrocarburos en aguas profundas del golfo de México.	RAFAEL VAZQUEZ DUHALT	Recursos CONACYT	05-03-2015	05-02-2020
3	Funcionalización Y Direccionamiento De Nanopartículas Con Actividad Citocromo P450 E Inmunológicamente Inertes A Células Tumorales De Mama	RAFAEL VAZQUEZ DUHALT	Recursos CONACYT	30-09-2016	29-09-2019
4	Aditivos para promover la productividad y la salud de los animales domésticos.	ARMANDO SADAJIKO SHIMADA MIYASAKA RAFAEL VAZQUEZ DUHALT	Recursos PAPIIT	01-01-2018	31-12-2020
5	sistema nacional de evaluación nanotoxicología (SINANOTOX)	RAFAEL VAZQUEZ DUHALT	Recursos CONACYT	17-09-2018	16-09-2020



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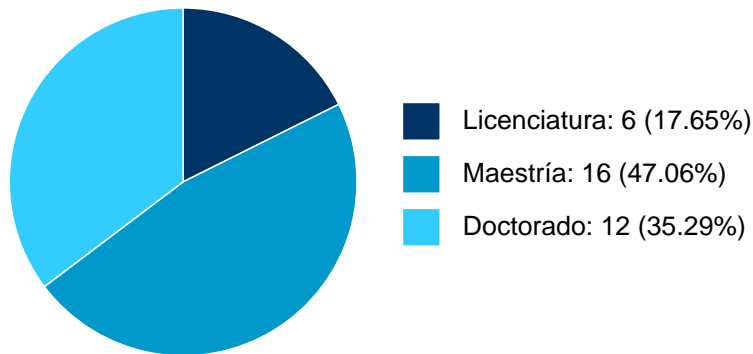
6	Hacia un tratamiento innovador para enfermedades asociadas a la disfunción mitocondrial: estrógenos novedosos que promueven la función mitocondrial.	RAFAEL VAZQUEZ DUHALT	Otras Universidades, Centros o Institutos Nacionales	24-05-2021	14-09-2022
7	Nanorreactores enzimáticos para el tratamiento de la enfermedad de Pompe	RAFAEL VAZQUEZ DUHALT	Recursos PAPIIT	01-01-2022	31-12-2023



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**PARTICIPACIÓN EN TESIS**

**Histórico de Colaboraciones en Tesis**



#	Título del documento	Tipo de Tesis	Sinodales	Autores	Entidad	Año
1	Transformación de disruptores endócrinos por citocromo P450	Tesis de Licenciatura	KARLA OYUKY JUAREZ MORENO,	KATRIN QUESTER, RAFAEL VAZQUEZ DUHALT, et al.	Centro de Nanociencias y Nanotecnología en la UNAM,	2019
2	Proteómica y lipidómica de la microalga oleaginosa Ettlia oleoabundans	Tesis de Doctorado	OTTO GEIGER,	OMAR HOMERO PANTOJA AYALA, RAFAEL VAZQUEZ DUHALT, et al.	Centro de Ciencias Genómicas, Centro de Nanociencias y Nanotecnología en la UNAM, Instituto de Biotecnología,	2019
3	Síntesis enzimática de colorantes industriales derivados del índigo	Tesis de Licenciatura	KANCHAN CHAUHAN,	ANA GUADALUPE RODRIGUEZ HERNANDEZ, RAFAEL VAZQUEZ DUHALT, et al.	Centro de Nanociencias y Nanotecnología en la UNAM,	2019

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**RAFAEL VAZQUEZ DUHALT**

4	Síntesis de nanopartículas de quitosano con actividad citocromo p450	Tesis de Licenciatura	KARLA PAULINA ALEJO GONZALEZ,	JAVIER PEREZ ROBLES, KATRIN QUESTER, et al.	Centro de Nanociencias y Nanotecnología en la UNAM,	2017
5	Estudio de la purificación y estabilidad de partículas pseudovirales derivadas del bacteriófago P22 con actividad peroxigenasa de citocromo P450	Tesis de Licenciatura	RAFAEL VAZQUEZ DUHALT,	Hernández Meza, Juan Manuel,	Centro de Nanociencias y Nanotecnología en la UNAM,	2017
6	Análisis del metabolismo de asfaltenos e hidrocarburos policíclicos aromáticos de alto peso molecular en neosartorya fischeri	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Hernández López, Edna Lorena,	Centro de Nanociencias y Nanotecnología en la UNAM,	2016
7	Efecto de la modificación química de la enzima versátil peroxidasa de bjerkandera adusta en la transformación de contaminantes	Tesis de Licenciatura	RAFAEL VAZQUEZ DUHALT,	Silva Torres, Omar,	Centro de Nanociencias y Nanotecnología en la UNAM,	2016
8	Diseño de una celda de combustible enzimática, alcohol oxidasa/lacasa	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Arrocha Arcos, Andrés Alberto,	Instituto de Biotecnología,	2014
9	Diseño y caracterización de partículas pseudovirales biocatalíticas	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Sánchez Sánchez, Lorena Paulina,	Instituto de Biotecnología,	2014
10	Estudio del flujo electrónico durante la inactivación de proteínas con actividad peroxidasa	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Vidal Limón, Abraham Marcelino,	Instituto de Biotecnología,	2014
11	Diseño molecular de una celda de combustible enzimática	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Barragán Trinidad, Martín,	Instituto de Biotecnología,	2013
12	Transformación enzimática de disruptores endócrinos : aplicación a sistemas de acuicultura	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Torres Duarte, Cristina del Carmen,	Instituto de Biotecnología,	2012

**Reporte individual**

**RAFAEL VAZQUEZ DUHALT**

13	Diseño de un biocatalizador tricomponente para desulfuración en medios orgánicos	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Hernández López, Edna Lorena,	Instituto de Biotecnología,	2011
14	Caracterización de una cepa de <i>Aspergillus</i> sp. capaz de crecer en asfaltenos como única fuente de carbón y energía	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Uribe Álvarez, Cristina,	Instituto de Biotecnología,	2011
15	Diseño y construcción de una celda de combustible enzimática híbrida Zn-lacasa	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Martínez Ortiz, Javier,	Instituto de Biotecnología,	2010
16	Determinación de hidrocarburos policíclicos aromáticos en muestras de aceite comestible por medio de espectroscopía de fluorescencia	Tesis de Licenciatura	RAFAEL VAZQUEZ DUHALT,	Uribe Álvarez, Cristina,	Instituto de Biotecnología,	2010
17	Transformación de plaguicidas por el sistema lacasa-mediador de <i>Coriolopsis gallica</i>	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Torres Duarte, Cristina del Carmen,	Instituto de Biotecnología,	2009
18	Síntesis enzimática de polímeros intrínsecamente conductores	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Longoria Hernández, Adriana Margarita,	Instituto de Biotecnología,	2009
19	Diseño de una partícula catalíticamente activa e inmunogénicamente inerte basada en la fosfotriesterasa	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Sánchez Sánchez, Lorena Paulina,	Instituto de Biotecnología,	2009
20	Aislamiento y caracterización de bacterias halófilas degradadoras de hidrocarburos	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Paniagua Meza, Dayanira S.,	Instituto de Biotecnología,	2008
21	Modulación del potencial redox en citocromo C y su efecto en la oxidación de fenoles	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Rodríguez Solís, Alexis Joavany,		2007

**RAFAEL VAZQUEZ DUHALT**

22	Modificación química ex-situ del grupo hemo de la peroxidasa versátil de Bjerkandera adusta y el efecto en su actividad enzimática	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Canul Tec, Juan Carlos,	2006
23	El papel del Ca <sup>2+</sup> estructural durante la inactivación oxidativa de la peroxidasa versátil de Bjerkandera adusta	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Verdin Ramos, Jorge Alberto,	2006
24	Acoplamiento oxidativo de 9,10-antraquinonas catalizadas por peroxidases	Tesis de Doctorado	MANUEL JIMENEZ ESTRADA,	RAFAEL VAZQUEZ DUHALT, Arrieta Baez, Daniel,	2005
25	Modificación química de la cloroperoxidasa y biocatálisis en solventes orgánicos	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Longoria Hernandez, Adriana Margarita,	2004
26	Identificación del sistema enzimático responsable de la degradación de plaguicidas organofosforados por hongos ligninolíticos	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Jauregui Rincon, Juan,	2003
27	Modificación hidrofóbica de conjugados biocatalíticos basados en quitosano	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Mortera Domínguez, Gabriela Maria,	2003
28	Obtención y caracterización de cristales catalíticos de cloroperoxidasa	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Ayala Aceves, Maricela,	2002
29	Diseño de un biocatalizador termoestable por modificación química de hemoproteínas	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	García Arellano, Humberto,	2002

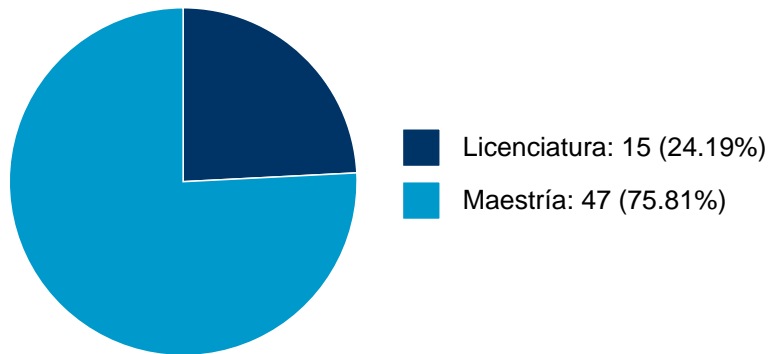
**RAFAEL VAZQUEZ DUHALT**

30	Modificación química ex-situ e in-situ del grupo hemo de la cloroperoxidasa del hongo <i>Caldaromyces fumago</i> y de la hemoglobina humana	Tesis de Doctorado	RAFAEL VAZQUEZ DUHALT,	Torres Ramirez, Eduardo,	2000
31	Biodesulfuración de petróleo mediante catalisis enzimática	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Bremauntz Michavila, Maria del Pilar,	2000
32	Estudio del mecanismo de inactivación de citocromo C por acción del peróxido de hidrógeno	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Villegas Sanchez, José Antonio,	1999
33	Ingeniería de solventes en la biocatálisis con citocromo c	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Torres Ramirez, Eduardo,	1998
34	Identificación de un sistema enzimático fungico para la decoloración de colorantes de uso textil	Tesis de Maestría	RAFAEL VAZQUEZ DUHALT,	Rodriguez Amaro, Elizabeth del Carmen,	1998

**RAFAEL VAZQUEZ DUHALT**

**DOCENCIA IMPARTIDA**

**Histórico de docencia**



#	Nivel titulación	Asignatura	Entidad	Alumnos	Semestre
1	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	5	2024-1
2	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	9	2023-1
3	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	6	2022-1
4	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	7	2021-1
5	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	7	2020-2
6	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	2	2019-2
7	Licenciatura	ESTANCIA DE INVESTIGACION	Centro de Nanociencias y Nanotecnología en la UNAM	5	2019-2

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8	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	4	2018-2
9	Licenciatura	ESTANCIA DE INVESTIGACION	Centro de Nanociencias y Nanotecnología en la UNAM	9	2018-2
10	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	9	2017-2
11	Licenciatura	ESTANCIA DE INVESTIGACION	Centro de Nanociencias y Nanotecnología en la UNAM	5	2017-2
12	Licenciatura	TERMODINAMICA BIOLOGICA-329901	Centro de Nanociencias y Nanotecnología en la UNAM	11	2016-2
13	Licenciatura	ESTANCIA DE INVESTIGACION-337153	Centro de Nanociencias y Nanotecnología en la UNAM	1	2016-1
14	Licenciatura	ESTANCIA DE INVESTIGACION	Centro de Nanociencias y Nanotecnología en la UNAM	8	2015-2
15	Licenciatura	TERMODINAMICA BIOLOGICA	Centro de Nanociencias y Nanotecnología en la UNAM	6	2014-2
16	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	1	2013-2
17	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2013-2
18	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2013-2
19	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	1	2013-1
20	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2013-1
21	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2013-1
22	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	1	2012-2
23	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	1	2012-2
24	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2012-2
25	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2012-1
26	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	1	2012-1
27	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	1	2011-2
28	Maestría	CURSO III	Instituto de Biotecnología	2	2011-2
29	Maestría	CURSO IV	Instituto de Biotecnología	3	2011-2
30	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2011-2
31	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2011-1
32	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	2	2010-2
33	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2010-2
34	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2010-2

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35	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2010-1
36	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	1	2010-1
37	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2010-1
38	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2010-1
39	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	2	2010-1
40	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	1	2009-2
41	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	2	2009-2
42	Maestría	SEMINARIO DE INVESTIGACION I	Instituto de Biotecnología	2	2009-2
43	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2009-2
44	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	1	2009-2
45	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2009-2
46	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2009-1
47	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2009-1
48	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	1	2009-1
49	Maestría	SEMINARIO DE INVESTIGACION I	Instituto de Biotecnología	1	2009-1
50	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	1	2009-1
51	Maestría	SEMINARIO DE INVESTIGACION I	Instituto de Biotecnología	1	2008-2
52	Maestría	SEMINARIO DE INVESTIGACION I	Instituto de Biotecnología	1	2008-2
53	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	1	2008-2
54	Maestría	TRABAJO DE INVESTIGACION I	Instituto de Biotecnología	1	2008-2
55	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2008-2
56	Maestría	SEMINARIO DE INVESTIGACION III	Instituto de Biotecnología	1	2008-2
57	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2008-2
58	Maestría	TRABAJO DE INVESTIGACION III	Instituto de Biotecnología	1	2008-2
59	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2008-1
60	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2008-1
61	Maestría	SEMINARIO DE INVESTIGACION II	Instituto de Biotecnología	1	2008-1
62	Maestría	TRABAJO DE INVESTIGACION II	Instituto de Biotecnología	1	2008-1





**Sistema Integral de Información Académica**  
**Coordinación de Planeación, Evaluación y**  
**Simplificación de la Gestión Institucional**  
**Reporte individual**



**RAFAEL VAZQUEZ DUHALT**

**PATENTES**

#	Título	Inventores	Sección	Año
1	NANOPARTICULAS BIOCATALITICAS CYP-P22 CON ACTIVIDAD CITOCROMO P450 PARA LA ACTIVACION DE PROFARMACOS.	RAFAEL VAZQUEZ DUHALT,	CHEMISTRY; METALLURGYHUMAN NECESSITIES	2020

**RAFAEL VAZQUEZ DUHALT**

**FUENTES DE INFORMACIÓN**

**Internos**

#	Información	Fuente	Sistema	Periodo
1	Grupos ordinarios y resumen de historias académicas	DGAE	SIAE	2008-2025
2	Nombramientos, datos generales, estímulos, premios y reconocimientos	DGAPA	RUPA	2008-2025
3	Producción Académica	CH	Humanindex	2008-2021
4	Producción Académica	CIC	SCIC	2000-2017
5	Proyectos	DGPO	SISEPRO	2018-2022
6	Tesis	DGB	TESIUNAM	2008-2024
7	Tutorías en Posgrado	CGEP	SIIPosgrado	2008-2021

**Externos**

#	Información	Fuente	Sistema	Periodo
8	Documentos Indexados	Elsevier	Scopus	2008-2025
9	Documentos Indexados	Thomson Reuters	WoS	2008-2025
10	Obras con registro ISBN	INDAUTOR	Agencia ISBN	2008-2025
11	Patentes	IMPI	SIGA	2008-2024