
XXXII National Congress of the Mexican Society of Electrochemistry/10th Meeting of the ECS Mexican Section

Editors:

F. J. Rodriguez-Gomez

J. L. Nava

R. Orozco-Cruz

J. M. Peralta-Hernández

T. Pérez-Segura



Published by

The Electrochemical Society

65 South Main Street, Building D
Pennington, NJ 08534-2839, USA

tel 609 737 1902

fax 609 737 2743

www.electrochem.org

ecstransactions™

Vol. 84, No. 1

Copyright 2018 by The Electrochemical Society.
All rights reserved.

This book has been registered with Copyright Clearance Center.
For further information, please contact the Copyright Clearance Center,
Salem, Massachusetts.

Published by:

The Electrochemical Society
65 South Main Street
Pennington, New Jersey 08534-2839, USA

Telephone 609.737.1902
Fax 609.737.2743
e-mail: ecs@electrochem.org
Web: www.electrochem.org

ISSN 1938-6737 (online)
ISSN 1938-5862 (print)
ISSN 2151-2051 (cd-rom)

ISBN 978-1-60768-844-0 (PDF)
ISBN 978-1-62332-522-0 (Softcover)

Printed in the United States of America.

ECS Transactions, Volume 84, Issue 1
XXXII National Congress of the Mexican Society of Electrochemistry/
10th Meeting of the ECS Mexican Section

Table of Contents

<i>Preface</i>	<i>iii</i>
Electrochemistry of Rhodium (III) in Trihexyl(tetradecyl) Phosphonium Bis(2,4,4-trimethylpentyl) Phosphinate Ionic Liquid (Cyphos IL 104 [®]) and Its Deposition <i>M. F. García-Montoya, S. Gutiérrez-Granados, J. Y. Méndez-Quezada, D. F. Chólico-González, C. Ponce de León, L. Hernández-Perales, M. Ávila-Rodríguez</i>	1
Electrochemical Behavior of the Cu (II)/Cu (0) System on Vitreous Carbon Electrodes Modified with PEDOT Electropolymerized in Aqueous Media <i>D. A. Castillo-Lara, R. C. Vasquez-Medrano, J. G. Ibanez, B. A. Frontana-Uribe, G. Salinas</i>	9
Surface Modifications to the Ti6Al4V Alloy for Improvement as Biomaterial <i>J. F. Flores-Álvarez, F. J. Rodríguez-Gómez, E. Onofre-Bustamante</i>	15
Electrochemical Degradation of the Recalcitrant Compound 4-Nitrophenol, Using Lacasa Enzyme <i>M. L. Lozano Camargo, L. Galicia, J. M. Granados Rodriguez, E. Cañeda Guzmán</i>	29
Influence of the Electropolymerization Parameters on the Doping Level of Polybithiophene Films Grown in Acetonitrile and Water <i>K. M. Contreras-Herrera, R. C. Vasquez-Medrano, J. G. Ibanez, B. A. Frontana-Uribe, G. Salinas</i>	35
Electrochemical Performance of Pt/NC and Pt/rGO for Methanol Oxidation in Acid Media <i>D. Macias Ferrer, J. A. Melo Banda, R. Silva Rodrigo, J. Y. Verde Gómez, U. Páramo García, P. Del Ángel Vicente, M. Lam Maldonado</i>	41

Preconcentration of the Herbicide Simetryn Using the ITIES System <i>H. García Martínez, I. M. de la Garza Rodríguez, E. Colunga Urbina, J. Amador-Hernández, M. Velazquez-Manzanares</i>	49
Study of Constituents on the Tarnishing Layer of Silver Alloys <i>J. Ortiz-Corona, J. A. Gonzalez-Sanchez, F. J. Rodriguez-Gomez</i>	57
Corrosion Behavior of WC-Co Coatings with VC Additions Applied by Thermal Sprayed HVOF <i>J. A. Gutiérrez, C. Gaona, F. Estupiñan, P. Zambrano, F. Almeraya, J. A. Cabral</i>	67
Development of High Corrosion Resistance Hydrophobic Layers on Aluminum Immersed in Saline Geothermic Media <i>R. Jaimes-Ramírez, A. Covelo-Villar, G. Hernández-Méndez, R. I. Puente-Lee, M. Hernández-Gallegos</i>	77
Electrochemical Evaluation of 2-Methyl-2-Imidazole and 2-Phenyl-2-Imidazole in a Sulphuric Medium <i>G. Castro Díaz, A. Espinoza-Vázquez, F. J. Rodríguez-Gómez</i>	89
Turbulent Flow Effect on Corrosion of API X80 Steel: Cathodic Kinetic Analysis <i>S. A. López-Celvera, R. Orozco-Cruz, M. A. Baltazar, A. Contreras-Cuevas, R. Galván-Martínez Sr.</i>	97
Electrochemical Study of a “Green” Rust Converter Applied on a Carbon Steel by Electrochemical Noise <i>J. Fabre-Pulido, O. Morteo-Flores, A. Contreras-Cuevas, R. Orozco-Cruz, R. Galván-Martínez Sr.</i>	107
Corrosion of API X80 Steel Immersed in Seawater: Application of Electrochemical Noise Technique <i>S. A. López-Celvera, R. Orozco-Cruz, E. Mejía-Sánchez, A. Contreras-Cuevas, R. Galván-Martínez Sr.</i>	117
Evaluation of Corrosion in Standard Bronze with Uric Acid, Chlorides and a Mixture of Both Compounds <i>M. Arroyo Gínez, A. Espinoza-Vázquez, F. J. Rodríguez-Gómez</i>	125
Computational Modeling of Electroosmotic Flow within a Slit Channel: Implementation Hints and Analysis of Boundary Conditions <i>R. Mayen-Mondragon, R. Montoya-Lopez, J. Genescá Llongueras</i>	131

Electrochemical Evaluation of WD-40 Oil as Temporary Protection with Additions of Natural Compounds as Inhibitors in Cast Iron <i>P. Roncagliolo Barrera, F. J. Rodriguez-Gomez</i>	139
Extraction Model of Cd ²⁺ and Al ³⁺ across the Water 1,2-Dichloroethane Interface <i>A. Pérez-Zúñiga, I. M. de la Garza Rodríguez, E. Colunga Urbina, J. Amador-Hernández, C. Sánchez-Muñoz, M. Velazquez-Manzanares</i>	149
Mycophenolic Acid as Possible Corrosion Inhibitor in Chloride Medium <i>M. J. Pérez Valdelamar, A. Espinoza-Vázquez, F. J. Rodríguez-Gómez, P. Del Valle Perez, R. Mata</i>	157
Determination of Inhibition Properties of Caffeine, Theophylline and Their Allylic and Propargylic Derivatives on API 5L X70 Steel Immerse in 1M HCl <i>A. Espinoza-Vázquez, F. J. Rodríguez-Gómez, I. K. Martinez Cruz, G. Negrón Silva, M. Palomar-Pardavé</i>	165
Synthesis of Copper Electrodeposits onto a Rotating Glassy Carbon Disk Electrode and Their Ability to Oxidize NaBH ₄ : Effect of the Rotation Rate <i>W. López-Orozco, D. E. García-Rodríguez, J. A. Corona-Castro, L. H. Mendoza Huizar</i>	173
Corrosion Behavior 304 and 316 Stainless Steel as Reinforcement in Sustainable Concrete Based on Sugar Cane Bagasse Ash Exposed to Na ₂ SO ₄ <i>A. E. Landa-Gómez, R. Croche B, S. Márquez-Montero, R. Villegas Apaez, H. A. Ariza-Figueroa, F. Estupiñan López, C. G. Tiburcio, F. A. Calderón, M. A. Baltazar-Zamora</i>	179
Corrosion Inhibition of Compounds Derived from Dihydropyrimidines (DMPH) in API 5L X52 Steel Immerse in 1M HCl <i>A. Espinoza-Vázquez, F. J. Rodríguez-Gómez, I. G. Lopez Alvares, D. Angeles Beltrán, G. Negrón Silva, M. Palomar-Pardavé</i>	189
Voltammetric Determination of Diclofenac in the Presence of Paracetamol and Naproxen by an Artificial Neural Network Model Using a Carbon Paste Electrode <i>G. Y. Aguilar-Lira, J. M. Gutiérrez-Salgado, A. Rojas-Hernández, J. A. Rodríguez-Ávila, M. E. Páez-Hernández, G. A. Álvarez-Romero</i>	195
Green Synthesis of Gold Nanoparticles (AuNPs) by <i>Cupressus Goveniana</i> Extract <i>J. Ramírez Castro, L. García-Hernández, P. A. Ramírez Ortega, D. Arenas Islas</i>	207

Correlation of Compression Resistance and Rupture Module of a Concrete of Ratio $w/c = 0.50$ with the Corrosion Potential, Electrical Resistivity and Ultrasonic Pulse Speed	217
<i>A. E. Landa-Gómez, R. Croche B, S. Márquez-Montero, R. Galván-Martínez Sr., C. G. Tiburcio, F. A. Calderón, M. A. Baltazar-Zamora</i>	
Development and Optimization of a Voltammetric Methodology Based on Bismuth Film Electrodes with Potential Application for Aflatoxin B1 Analysis	229
<i>A. A. Hernández Hernández, A. Castañeda Ovando, M. E. Páez-Hernández, C. A. Galán-Vidal, E. A. Contreras López, G. A. Álvarez-Romero</i>	
Influence on the Electroactive Area of the Electrode's Nature and the Transformed Redox Molecule	235
<i>M. Franco Guzmán, G. A. Álvarez-Romero, L. H. Mendoza Huizar, C. A. Galán-Vidal, G. Roa Morales</i>	
Electrosynthesis and DSC Characterization of Doped Polypyrrole Films with Sodium Salicylate and Sodium Ibuprofen on the Mg Alloy AZ31	243
<i>P. A. Herrera Herrera, N. C. Santana, J. A. Martinez</i>	
Amperometric Sensor Based on Au/MWCNT for Simultaneous Speciation of Cr(III) and Cr(VI) Ionic Species	257
<i>J. G. Daniel-Serrano, S. Pérez-Sicairos, R. M. Félix-Navarro, M. Beltrán-Gastélum, M. I. Salazar-Gastélum</i>	
Tribological Study of a Bimodal WC-Co Coating Applied by HVOF	271
<i>J. D. Florez, J. A. Cabral Miramontes Sr., C. Gaona Tiburcio, P. D. C. Zambrano Robledo, F. Almeraya Calderon</i>	
Effect of the Addition of Nanoparticles in the Mechanical and Electrochemical Behavior of Electrophoretic Coatings	279
<i>F. Estupiñan-Lopez, C. Gaona-Tiburcio, M. Baltazar-Zamora, S. Sepulveda, P. Zambrano-Robledo, J. A. Cabral-Miramontes, F. Almeraya-Calderón</i>	
Elaboration of a Dielectric Based on Boron Doped Carbon Nanotubes	291
<i>P. G. Vilchis-Gutiérrez, M. J. Pacheco Pacheco, J. Pacheco, R. Valdivia, C. E. Barrera Díaz, P. Balderas, A. Santana, X. Tu</i>	
Determination of Pb in <i>Brickellia Veronicifolia</i> for Anodic Stripping Voltammetry	297
<i>L. T. Félix, S. M. Durón, V. Ávila, H. C. Correa, M. M. Aguilera</i>	

Effect on the Anodization Process of Titanium through Surface Modification with Electrodeposited Platinum Nanoparticles <i>M. Arellano Sánchez, L. M. Martínez, M. Videa</i>	305
Anticorrosive Behavior of Zinc Rich Coating Systems on Steels in Marine and Industrial Atmosphere <i>G. Lugo Islas, E. Gallardo Castán, N. García Navarro, J. L. Ramirez Reyes, G. Galicia Aguilar, J. Pérez Téllez, J. S. Oseguera López, J. G. Ibañez Cornejo, T. A. Calles Hernández</i>	313
Green Synthesis of Gold Nanoparticles (AuNPS) Using the Extract of <i>Sedum Praealtum</i> <i>B. Aguilar Pérez, L. García-Hernández, P. A. Ramírez Ortega, D. Arenas Islas</i>	321
Bidimensional Study of the Diffusion and Migration of Chloride in the Concrete through Radial Basis Functions <i>M. S. Flores Cortez, J. A. Muñoz Gómez, R. E. Nuñez Jaquez, C. P. Barrios Durstewitz, J. H. Castorena González</i>	331
Assessing <i>Mimosa Tenuiflora</i> Extract as Rust Converter on Iron Corrosion Products <i>A. O. Morteo-Flores Sr., R. Galván-Martínez Sr., I. Fernández-Gómez, R. Orozco-Cruz</i>	341
Electrochemical Study of Metronidazole as Corrosion Inhibitor of Steel API 5L X52 <i>H. N. Flores Cortez, R. E. Nuñez Jaquez, C. P. Barrios Durstewitz, J. H. Castorena González</i>	349
Author Index	355