

CURRÍCULUM VITAE

Nombre: Dra. Elsa Miriam Arce Estrada

Adscripción: ESQIE. Departamento de Ingeniería en Metalurgia Y Materiales

Email: earce@ipn.mx

Formación

Doctorado: CINVESTAV, 1986.

Maestría: CINVESTAV, 1976.

Licenciatura: IPN, 1970.

Experiencia Laboral

1972 a la fecha IPN. Profesor- Investigador

Coordinador de los Posgrados en Metalurgia y Materiales

Jefe del Departamento de Metalurgia y Materiales

Experiencia Docente

Cursos Asignados: Electroquímica, Corrosión, Técnica Experimentales III

Áreas de interés de investigación

Electrocatalisis

Fotoelectrocatalisis

Corrosión

Procesos de nucleación y crecimiento

Publicaciones Seleccionadas

□ Artículos en revistas (6 años a la fecha)

1. L.A. Estudillo Wong, E.M. Arce Estrada, A. Manzo Robledo. Interaction of NO during cathodic polarization in alkaline conditions at the interface of Pt-nanostructures supported on C and TiO₂-C. *Electrochim. Acta.* 134 (2014) 100-106. Q1
2. S. Olvera, J. Sánchez Marcos, F.J. Palomares, E. Salas, E.M. Arce, P. Herrasti, Characterization and corrosión behaviour of CoNo alloys obtained by mechanical alloying. *Materials Characterization* 93 (2014) 79-86. Q1
3. K. Suárez-Alcántara, A. Ezeta-Mejía, E.M. Arce-Estrada, R.G. González-Huerta, O. Solorza-Feria, S. E. Canton. Synchroton-based structural and spectroscopic studies of ball milled RuMoSe and RuMoSn as oxygen reduction electrocatalysts for PEM Fuel Cells. *IJHE* 39 (2014) 16715-16721. Q1
4. P. Arellanes-Lozada, O. Olivares-Xometl, D. Guzmán-Lucero, N. V. Likhanova, M. A. Dominguez-Aguilar, I. V. Likhanova, Elsa Arce-Estrada. The inhibition of aluminium corrosion in sulphuric acid by poly (1-vynil-2-alkyl-imidazolium hexafluorophosphate). *Materials* 7 (2014) 5711-5734. Q1

5. J.M. Mora Hernández, A. Ezeta Mejía, C. Reza San Germán, S. Citalán Cigarroa, E.M. Arce Estrada. Electrochemical activity towards ORR of mechanically alloyed PdCo supported on Vulcan carbon and carbon nanospheres. *J. Appl. Electrochem.*, 44 (2014) 1307-1315. Q3
6. P. Arellanes-Lozada, O. Olivares-Xometl, D. Guzmán-Lucero, N. V. Likhanova, M. A. Dominguez-Aguilar, I. V. Likhanova, Elsa Arce-Estrada. Evaluation of the corrosion inhibiting effect of an ionic liquid (N-dimethyl-N-di(cocoalkyl) ammonium methyl sulfate) on API 5L X52 steel in hydrochloric acid. *IJES*. 10 (2015) 2776-2790. Q3
7. S. Olvera, J. Sánchez-Marcos, F.J. Palomares, P. Herrasti, E.M. Arce Estrada. Effect of the low magnetic field on the electrodeposition of $\text{Co}_x\text{Ni}_{100-x}$ alloys. *Materials Characterization* 105 (2015) 136-143. Q1
8. Y. Luo, J.M. Mora-Hernández, L.A. Estudillo-Wong, E.M. Arce Estrada, N. Alonso-Vante. Nanostructured palladium tailored via carbonyl chemical route towards oxygen reduction reaction. *Electrochim. Acta* 173 (2015) 771-778. Q1
9. J.M. Mora-Hernández, E.M. Arce-Estrada, L. Zarazúa-Villalobos, M. Estrada-Flores, J. Medina-Flores, C. Reza-San Germán. Synthesis and characterization of wires-like ZnO structures grown on a graphite support by microwave irradiation. *J. Crystal Growth* 426 (2015) 141-146. Q2
10. P. Arellanes-Lozada, O. Olivares-Xometl, N. V. Likhanova, L. Lartundo-Rojas, E. M. Arce Estrada. Inhibition effects of a quaternary ammonium-based ionic liquid on steel in acid solution: electrochemical and surface analyses. *Int. J. Electrochem. Sci.* 11 (2016) 7785-7800. Q3
11. V. Medina-Flores, A. Manzo-Robledo, J. M. Mora-Hernández, E. M. Arce Estrada. Surface state and proton adsorption phenomena on CoRu-based materials during hydrogen evolution reaction in acid condition. *Int. J. Hydrogen Energy* 42 (2017) 38-45. doi.org/10.1016/j.ijhydene.2016.12.085, Q1
12. J. V. Medina-Flores, E. M. Arce-Estrada, M. Corrales-Luna, A. Romero-Hernández, A. Manzo-Robledo. Photoelectrochemical and spectroscopic surface analysis of TiO_2 nanorods/Ag nanoparticles toward organic carboxylic acids oxidation. *J. Solid State Electrochem.* 21 (2017) 1805-1816. doi. 101007/s 10008-017-3553-z. Q3
13. M.P. Chávez Díaz, M. L. Escudero-Rincón, E.M. Arce Estrada, R. Cabrera Sierra. Osteoblast cell response on the Ti6Al4V alloy heat-treated. *Materials* 10 (2017) 445. DOI: 10.3390/ma10040445. Q1
14. M.E. Palomar-Pardavé, J. Aldana-González, L. Botello, E.M. Arce-Estrada, M.T. Ramírez-Silva, J. Mostany, M. Romero-Romo. Influence of temperature on the thermodynamics and kinetics of cobalt electrochemical nucleation and growth. *Electrochim. Acta* 241 (2017) 162-169. 0013-4686. dx doi.org/10.1016/j.electacta.2017.04.126. Q1
15. M. Corrales Luna, O. Olivares Xometl, N.V. Likhanova, R. E. Hernández Ramírez, I. V. Lijanova, P. Arellanes, E.M. Arce Estrada. Influence of the immersion time and temperature on the corrosion of API X52 steel in an aqueous salt medium. *Int. J. Electrochem. Sci.* 12 (2017) 6729-67-41, doi: 10.20964/2017.07.12. Q3

16. A. Ezeta-Mejía, M. G. Montes de Oca-Yemha, E. M. Arce-Estrada, M. Romero-Romo, M. Palomar-Pardavé. Nanostructured-catalysts synthesized by high energy mechanical alloying for formic acid electrochemical oxidation. *Electrocatalysis* 8 (2017) 472-479. ISSN 1868-2529. DOI 10.1007/s12678-017-0404-8. Q2
17. Tu Le Manh, E.M. Arce Estrada, M. Romero Romo, I. Mejía Caballero, J.I. Aldana González, M. Palomar Pardavé. On the electrochemical nucleation of cobalt onto glassy carbon from a deep eutectic solvent. *J. Electrochem. Soc.* 164 (2017) D694-D699. 0013-4651. Q1
18. M.P. Chávez Díaz, M. L. Escudero Rincón, E.M. Arce Estrada, R. Cabrera Sierra. Effect of the heat-treated Ti6Al4V alloy on the fibroblastic cell response. *Materials*. 11 (2018) 21-38. Q1
19. Tu Le Manh, E.M. Arce-Estrada, I. Mejía-Caballero, J. Aldana-González, M. Romero-Romo, M. Palomar-Pardavé. Electrochemical synthesis of cobalt with different crystal structures from a deep eutectic solvent. *J. The Electrochemical Soc.* 165 (7) (2018) D285-D290. Q1
20. A. Romero Hernández, M.E. Manríquez, A. Ezeta, J.V. Medina Flores, E.M. Arce Estrada. Shape effect of AuPd core-shell nanostructures on the electrocatalytical activity for oxygen reduction reaction in acid medium. *Electrocatalysis*. 9 (2018) 752-761. DOI: /10.1007/s12678-018-0486-y. Q1
21. I. Mejía. J.I. Aldana González, Tu Le Manh. E.M. Arce Estrada, M. Romero Romo, M.T. Ramírez Silva, M.E. Palomar Pardavé. Mechanism and kinetics of chromium electrochemical nucleation and growth from a choline chloride/ethylene glycol deep eutectic solvent. *J. The Electrochem. Soc.* 165 (2018) D393-D401. Q1
22. M. Madrigal Cano, L. Hernández Maya, J.M. Hallen López, M. Corrales Luna, E.M. Arce Estrada, Tu Le Manh. Model for the correlation between anodic dissolution resistance and crystallographic texture in pipeline steels. *Materials* 11 (2018) 1432. DOI: 10.3390/ma11081432. Q1.
23. Tu Le Manh, E.M. Arce Estrada, I. Mejía Caballero, E. Rodríguez Clemente, W. Sánchez, J. Aldana González, L. Lartundo Rojas, M. Romero Romo, M. Palomar Pardavé. Iron electrodeposition from Fe (II) ions dissolved in a choline chloride: Urea eutectic mixture. *J. Electrochem. Soc.*, 165 (16) (2018) D808-D812. Q1.
24. M. Madrigal-Cano, J. M. Hallen-López, E. M. Arce-Estrada, Tu Le Manh. Effect of crystallographic texture and microstructure on pitting corrosion behavior of low carbon steel: A Monte Carlo model. *Computational Material Sci.* 161 (2019) 394-402.
25. J. Aldana González, A. Sampayo- Garrido, M.G. Montes de Oca Yemba, W. Sánchez, M.T. Ramírez Silva, E.M. Arce Estrada, M. Romero Romo, M. Palomar Pardavé. Electrochemical Nucleation and growth of Mn and Mn-Zn alloy from leached liquors of spent alkaline batteries using a deep eutectic solvent. *J. The Electrochem, Soc.* 166 (6) (2019) D199-D204. Q1.
26. M. Corrales Luna, Tu Le Manh, R. Cabrera Sierra, J.V. Medina Flores, L. Lartundo Rojas, E. M. Arce Estrada, Study of corrosion behavior of API 5L X52 steel in sulfuric acid in the presence of ionic liquid 1-ethyl 3-

- methylimidazolium thiocyanate as corrosion inhibitor. *J. Molecular Liquids* 289 (2019) 111106. Q1
27. M. Corrales Luna, Tu Le Manh, E. M. Arce Estrada. On adsorption and performance of 1-ethyl-3-methylimidazolium thiocyanate ionic liquid as corrosion inhibitor of API 5L X52 steel in acidic media. *Corrosion Sci.*, 153 (2019) 85-99. Q1
28. M. Corrales Luna, Tu Le Manh, E. M. Arce Estrada. Adsorption and performance of (HEMIM)⁺(CN)⁻ and (DMIM)⁺(Cl)⁻ as corrosion inhibitor of API 5L X52 steel in HCl medium. *Int. J. Electrochem. Sci.*, 14 (2019) 4420-4442. Q3.
29. J. Aldana González, A. Sampayo-Garrido, M.G. Montes de Oca-Yemha, W. Sánchez, M.T. Ramírez Silva, E.M. Arce Estrada, M. Romero Romo, M.E. Palomar Pardavé. Electrochemical nucleation and growth of Mn and Mn-Zn alloy from leached liquors of spent alkaline batteries using a deep eutectic solvent. *J. Electrochem. Soc.*, 166 (6) (2019) D199-D204. Q1
30. M. Palomar-Pardavé, J. Mostany, R. Muñoz-Rizo, Luis E. Botello, J. Aldana-González, Elsa M. Arce-Estrada, M. G. Montes de Oca-Yemha, M. T. Ramírez-Silva, M. Romero Romo. Electrochemical study and physicochemical characterization of iron nanoparticles electrodeposited onto HOPG from Fe(III) ions dissolved in the choline chloride-urea deep eutectic solvent. *J. Electroanal. Chem.* 851 (2019) 113453. Q1
31. A. Romero Hernández, A. Ezeta Mejía, M.E. Manríquez, E.M. Arce Estrada. Formic acid oxidation on AuPd core-shell electrocatalysts: Effect of surface electronic structure. *Enviado a Electrochim. Acta* (2019). Q1
32. L. Juárez-Marmolejo, B. Maldonado-Teodocio, M.G. Montes de Oca-Yemha, M. Romero-Romo, M. T. Ramírez-Silva, E. M. Arce-Estrada, P. Morales-Gil, J. Mostany, M. Palomar-Pardavé. Electrochemical deposition of palladium nanoparticles onto glassy carbon from a deep eutectic solvent (reline) and its use as catalyst for the methanol oxidation reaction. *Enviado J. Electrochem. Soc.* Q1

Reconocimientos

SNI Nivel III

Beca EDI: Nivel 9

Beca COFAA: Nivel V

Presea Lázaro Cardenas (2011)

Presidente de la Sociedad Mexicana de Electroquímica

Tesorero de la Sociedad Mexicana de Electroquímica

Tesorero de la Asociación Mexicana de Ingenieros en Corrosión