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Materials Science and Engineering
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Education

1997-2001	Ph.D.	Materials Science and Eng.	Penn State University, University Park, PA
1995-1996	M.S.	Materials Science (Honors)	National Autonomous University of Mexico, UNAM
1990-1994	B.S.	Chemical Metallurgical Engineering (Honors)	National Autonomous University of Mexico, UNAM

Professional Appointments

Mar 2015-Date	Associate Professor, Director National Corrosion and Materials Reliability Center	Materials Science and Engineering, Texas A&M University, College Station
Jan 2011-Mar 2015	Assistant Professor	Chemical Engineering, the University of Akron , Akron OH
Jul 2010-Dec 2010	Senior Corrosion Specialist	ATI Allegheny Ludlum , Technical Center, Natrona Heights, PA.
Nov 2006-June 2010	Principal Research Scientist	Energy Systems and Pipeline Technology Center- Battelle Memorial Institute , Columbus OH.
Oct 2002-Nov 2006	Research Leader	Pipelines, Corrosion and Materials Division- PEMEX/Mexican Petroleum Institute , Mexico City.
Oct 2002-Nov 2006	Adjunct Associate Professor (Lecturer)	College of Chemistry- National Autonomous University of Mexico (UNAM) , Mexico City.
Mar 2001-Oct 2002	Electrochemist Researcher	Research and Development - Siemens Lowell, MA.

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Honors and Awards

1994	Honorable mention for academic achievement - undergraduate studies from the National Autonomous University of Mexico
1997-2000	Fellowship from the National University of Mexico DGAPA.
1997	Honorable mention for academic achievement - graduate studies from the National Autonomous University of Mexico
1997	Graduate studies award (Antonio Caso) for best student in Posgraduate studies
1996-1997	Research Award, 1996 by the National University Autonomous of Mexico Foundation to do Research in North America during 6 months
2007-2013	National Research Council in Mexico, SNI Level I
2014-2017	National Research Council in Mexico, SNI Level II
2011- 2013	Who is Who in America (electrochemistry, corrosion and energy), Editions
2011-2017	CONACYT- RCEA reviewer and SENER-CONACyT reviewer
2016	Outstanding reviewer Elsevier for Corrosion Science
2017-date	Member for the National Academies of Science, Engineering and Medicine's study on Connector Reliability for Offshore Oil and Natural Gas Operations (2016-)

Professional Associations

- ♦ The Minerals , Metals and Materials Society, (2014-present)
- ♦ International Electrochemical Society (2009-Present)
- ♦ The Electrochemical Society (From 2004- Present)
- ♦ National Association of Corrosion Engineering (From 2008- Present)
- ♦ American Society of Materials (From 2011- 2015)
- ♦ International Corrosion Council (From 2008- Present)
- ♦ Member Technical and Research Activities Committee and Courses for Industry ASM, 2001-2004
- ♦ National Association of Researchers Mexico SNI Level II (2014-2017)
- ♦ Member for the National Academies of Science, Engineering and Medicine's study on Connector Reliability for Offshore Oil and Natural Gas Operations (2016-Present)

Peer-reviewed Papers

Current and previous graduate students*.

2017

- 1 Ahmad Ivan Karayan*, Kumar Jata Michael Velez, **H. Castaneda**, Comparative Study of Exfoliation Corrosion Resistance of Al-Li 2060 T3E80 Aluminum Lithium Alloy in Different Environments, *Corrosion* <http://dx.doi.org/10.5006/2183>, 2017.
- 2 Seongkoo Cho*, Yenny Cubides* and **H. Castaneda**, Probing the degradation mechanism of Cr (VI) coating /Aluminum 2024 T3 system based on 2D deterministic-probabilistic approach, *Electrochimica Acta*, Volume 236, 10 May 2017, Pages 82–96
- 3 Li, X.*; **Castaneda, H.** Damage evolution of coated steel pipe under cathodic-protection in soil. *Anti-Corrosion Methods and Materials* 2017, 64, 118-126.
- 4 Barraza-Fierro*, J. I.; Serna-Barquera, S. A.; Campillo-Illanes, B. F.; **Castaneda, H.** EIS Behavior of Experimental High-Strength Steel in Near-Neutral pH and Load Conditions. *Metallurgical and*

Materials Transactions A, 1-15, 2017.

- 5 Barraza-Fierro, J.I.*; Espinosa-Medina, M.A.; **H. Castaneda**. Oxidation behavior of Fe-40at.% Al intermetallics with Li or Cu additions at high temperature. *Corrosion Engineering, Science and Technology*, 52:5, 365-372, 2017.
- 6 S.S.Su*, C. Yegin, C.H. Kuo, M. Akbulut, **H. Castaneda**, Corrosion behavior of Boron Nitride Nanosheet reinforced Copper Matrix composite. *Materials Science and Engineering: A* May 2017, in review.
- 7 S.S. Su*, B.N.M. Santiago*, **H. Castaneda**. Corrosion behavior of Zn and Zn-Al-Mg coated steel in different environment. *Corrosion*, in review, May 2017.
- 8 I. Karajan*, Y. Cubides*, Fred Goodwin, **H. Castaneda**, Evaluation of surface treatment effectiveness on reinforced concrete structures based on electrochemical techniques vs. standard testing, *American Concrete Institute Materials* in review, April 2017.
- 9 Pranav Kannan, M.Sam Mannan, Sreeram Vaddiraju, She Sia Su* and **H. Castaneda**, A critical overview of characterization techniques used for anaerobic Microbiologically Influenced Corrosion (MIC) in oil environments, *Corrosion Science*, in review April 2017.
- 10 Tse-Ming-Chiu*, Barraza-Fierro*, J. I and **Homero Castaneda**, Comprehensive Interfacial Mechanisms of LiMnPO₄-MWCNT Composite ratios in Acidic Aqueous Electrolyte, *Electrochimica Acta*, in review May 2017.
- 11 Seongkoo Cho*, Tse-Ming Chiu,* and **Homero Castaneda**, Electrochemical Behavior for Zn-rich Epoxy Coated System as a Diode-like Material, *Electrochimica Acta*, in review April 2017.
- 12 M. Galicia, Marisela Aguirre, V. Valencia, B. Galicia* and **H. Castaneda** Interfacial and Corrosion Characterization of Zinc Rich-Epoxy Primers with carbon nanotubes exposed to Marine Conditions, *Corrosion NACE*, In review March 2017.
- 13 M. Galicia, Marisela Aguirre, Shei Sha Su* and **H. Castaneda**, Influence of CNT on the multifunctional coating (Zinc Rich) on carbon steel when exposed to SRB environment, *Journal of Materials*, in review May 2017.
- 14 X Li*, Seongkoo Cho*, **H Castaneda**, Electrochemical Impedance Modelling and its application to conductive Polyaniline containing Zinc Rich Primer, *Progress in Organic Coatings*, in review February 2017.
- 15 X. Li*, Yenny Cubides*, Zhouying He, Mark Soucek, **H. Castaneda**, Effects on Dopants on Anticorrosion performances of PANI Emeradine salt containing ZRPS, *Progress in Organic Coatings* In review, in review December 2016.
- 16 R. Ly*, K.T. Hartwig, **H. Castaneda**, Influence of adiabatic Shear Bands in the Intergranular corrosion of Al 6061 after Equal Channel Angular Pressing, *Acta Materiala*, In preparation.

2016

- 17 Cubides, Y.*; Su, S. S.*; **Castaneda, H.** Influence of Zinc Content and Chloride Concentration on the Corrosion Protection Performance of Zinc-Rich Epoxy Coatings Containing Carbon Nanotubes on Carbon Steel in Simulated Concrete Pore Environments. *Corrosion* 2016, 72, 1397-1423.
- 18 Cubides, Y.*; **Castaneda, H.** Corrosion protection mechanisms of carbon nanotube and zinc-rich epoxy primers on carbon steel in simulated concrete pore solutions in the presence of chloride ions. *Corrosion Science* 2016, 109, 145-161.
- 19 Karayan, A. I.*; Jata, K.; Velez, M.; **Castaneda, H.** On exfoliation corrosion of alloy 2060 T8E30 in an aggressive acid environment. *Journal of Alloys and Compounds* 2016, 657, 546-558.

- 20 Miran, S. A.; Huang, Q.; **Castaneda, H.** Time-dependent reliability analysis of corroded buried pipelines considering external defects. *Journal of Infrastructure Systems* 2016, 22, 3, 04016019.
- 21 Chen, Y.; Torres, J.; **Castaneda, H.**; Ju, L.-K. Quantitative comparison of anaerobic pitting patterns and damage risks by chloride versus *Desulfovibrio vulgaris* using a fast pitting-characterization method. *International Biodeterioration & Biodegradation* 2016, 109, 119-131.
- 22 Li, X.*; Rosas, O.*; **Castaneda, H.** Deterministic modeling of API5L X52 steel in a coal-tar-coating/cathodic-protection system in soil. *International Journal of Pressure Vessels and Piping* 2016, 146, 161-170.
- 23 Cabrera-Sierra, R.*; Cosmes-López, L.; **Castaneda-López, H.**; Calderón, J. T.; López, J. H. Corrosion Studies of Carbon Steel Immersed in NACE Brine by Weight Loss, EIS and XRD Techniques. *Int. J. Electrochem. Sci* 2016, 11, 10185-10198.
- 24 Wang, H.; Yajima, A.; Liang, R. Y.; **Castaneda, H.** Reliability-based temporal and spatial maintenance strategy for integrity management of corroded underground pipelines. *Structure and Infrastructure Engineering* 2016, 12, 1281-1294.

2015

- 25 Yang, D.*; Zhang, M.; Zheng, J.; **Castaneda, H.** Corrosion inhibition of mild steel by an imidazolium ionic liquid compound: the effect of pH and surface pre-corrosion. *RSC Advances* 2015, 5, 95160-95170.
- 26 Wang, H.; Yajima, A.; Liang, R. Y.; **Castaneda, H.** A clustering approach for assessing external corrosion in a buried pipeline based on hidden Markov random field model. *Structural Safety* 2015, 56, 18-29.
- 27 Karayan, A. I.*; Maya-Visuet, E.*; **Castaneda, H.** Transpassive Behavior of UNS N08367 Super Austenitic Stainless Steel in LiBr Solution. *Corrosion* 2015, 71, 1110-1120.

At U Akron 2015

- 28 H Wang, A Yajima, RY Liang, **H Castaneda**, A Bayesian model framework for calibrating ultrasonic in-line inspection data and estimating actual external corrosion depth in buried pipeline utilizing a clustering technique, *Structural Safety* 54, 19-30, 2015.
- 29 Tongzhai Gao, Enrique Maya-Visuet*, Zhouying He, **H. Castaneda**, Irina J Zvonkina, Mark D Soucek, Effect of pigmentation on polyurethane/polysiloxane hybrid coatings, *Journal of Applied Polymer Science*, Volume 133, Issue 5, February 5, 2016.
- 30 Ayako Yajima, Hui Wang, Robert Y. Liang, **H. Castaneda**, A Bayesian inferential framework for truncated structure inspection data utilizing generalized exponential distribution and non-informative Jeffreys' prior, *Journal of Structural Safety* 54, 19-31, 2015
- 31 Karayan, A.I.*, Esquivel Guerrero*, J., **H. Castaneda**, Single-boss crevice former for studying crevice corrosion of UNS S32003 in chloride-containing solution at high temperature, *Journal of Alloys and Compounds*, 619, pp. 544-552, 2015.
- 32 Hui Wang, Ayako Yajima, Robert Liang, **Homero Castaneda**, Bayesian modeling of external corrosion in underground pipelines based on the integration of Markov chain monte Carlo

- techniques and clustered inspection data, *Computer-Aided Civil and Infrastructure Engineering*, 30 (4), pp. 300-316, 2015.
- 33 Enrique Maya*; Tonghazi Gao, Mark Soucek and **H. Castaneda**, The Effect of TiO₂ as a pigment in polyurethane/polysiloxane hybrid coating/Aluminum interface based on interfacial damage evolution, *Progress in Organic Coatings*, Volume 83, June 2015, pages 35-46.
- 34 Chen, Y., Tang, Q., Senko, J.M, **H. Castaneda**, Ju, L.-K., Long-term survival of *Desulfovibrio vulgaris* on carbon steel and associated pitting corrosion, *Corrosion Science*, 90, pp. 89-100, 2015.
- 35 Yajima, A., Wang, H., Liang, R.Y., **Castaneda, H.**, A clustering based method to evaluate soil corrosivity for pipeline external integrity management, *International Journal of Pressure Vessels and Piping*, 126, pp. 37-47, 2015.
- 36 Niu, J.*, Barraza-Fierro, J.I.*, **Castaneda, H.**, Quantification of protective properties of the coating/corrosion product/steel interface by integration of transmission line model with EIS results, *Journal of Coatings Technology Research*, 12 (2), pp. 393-405, 2015.
- 37 Cao, B., Tang, Q., Li, L., **Castaneda, H.**, Cheng, G., Integrated zwitterionic conjugated poly(carboxybetaine thiophene) as a new biomaterial platform, *Chemical Science*, 6 (1), pp. 782-788, 2015.
- 38 X. Li*, and **H Castaneda**, Coating studies of buried pipe in soil by novel approach of electrochemical impedance spectroscopy at wide frequency domain, *Corrosion Engineering Science and Technology*. Volume 50, Issue 3 (May 2015), pp. 218-225.
- 39 R. Hernandez* O. Rosas, J. Saunders_ and **H. Castaneda**, Dynamic Characterization of Dendrite deposition and growth in Li-surface by Electrochemical Impedance Spectroscopy, *Journal of The Electrochemical Society*, **162** (4) A687-A696 (2015)

2014

- 40 Bin Cao, Qiong Tang, Linlin Li, Chen-Jung Lee, Hua Wang, **Homero Castaneda** and Gang Cheng, Integrated Zwitterionic Conjugated Poly(carboxybetainethiophene) as a New Biomaterial Platform, *Chem. Sci.* 6 (1), 782-788, 2014.
- 41 Hua Wang, Lu-Kwang Ju, **Homero Castaneda**, Gang Cheng, Bi-min Zhang Newby, Corrosion of carbon steel C1010 in the presence of iron oxidizing bacterium *Acidithiobacillus ferrooxidans*" *Corrosion Science*, 89, 250-257, 2014.
- 42 M. Galicia, X.M. Li*, **H. Castaneda**, Interfacial Characterization of Single- and Multi-Walled CNT-Doped Chitosan Scaffolds under Two Flow Conditions, *J. Electrochem. Soc.* 2014 161(12): H751-H761.
- 43 Ivan Karajan*, Enrique Maya*, **H. Castaneda**, Transpassivity characterization of the Alloy UNS N08367 in a Chloride-Containing Solution, *J. of Solid State Electrochemistry*, *Journal of Solid State Electrochemistry* 18 (11), 3191-3202, 2014.
- 44 Ivan Karajan* and **H. Castaneda**, Weld Decay Failure of AISI 316L Stainless Steel Storage Tank, *Engineering Failure Analysis*, Volume 44, September 2014, Pages 351–362.
- 45 Dongrui Yang*, Omar Rosas*, and **H. Castaneda**, FeCO₃ Layer Evolution for API X52 Steel in Carbon Dioxide Saturated NaCl Brine in Presence of 1-decyl-3-methylimidazolium chloride, *Corrosion Science*, Volume 87, October 2014, Pages 40-50.
- 46 J. I. Barraza-Fierro*, B. F. Campillo, X.M. Li, **H. Castaneda**, Steel microstructure effect on mechanical properties and corrosion behavior of medium strength low carbon steel, *Metallurgical and Materials Transactions A* 45 (9), 3981-3994.
- 47 X. M. Li*, B Faber, B Minch, **H Castaneda**, Analysis of Soft Coating Corrosion Performance on Carbon Steel Using Electrochemical Impedance Spectroscopy, *Corrosion*, 70, No 6, 615-626, 2014.

- 48 O. Rosas*, Enrique Maya*, and **H. Castaneda**, Effect of Chloride Ions on the Electrochemical Performance of LDX 2003 Alloy in Concrete and Simulated Concrete Pore Solutions, *Journal of Applied Electrochemistry*, Volume 44, Issue 5 (2014), Page 631-646.

2013

- 49 O. Rosas*, J Saunders and **H. Castaneda**, Interfacial Electrochemical Analysis on LiCoO₂/carbon nanotubes Layers as Cathode Active Composite in Aqueous Electrolytes, *Electrochimica Acta*, 113 (2013) 77– 86.
- 50 **H. Castaneda**, The impedance Response of different Mechanisms for LiCoO₂ /acetylene carbon Electrodes in alkaline solutions under Polarization conditions, *Electrochimica Acta*, 112 (2013) 562– 576.
- 51 Roberto C. Hernandez Maya*, Orlando Ugalde Reyes, Jesus Garcia Fadrique, **Homero Castaneda Lopez**, and Pedro Roquero Tejada, A Voltammetry Study of Ethanol Oxidation on Carbon Supported Non Alloyed Platinum-Tungsten Catalysts *Journal of The Electrochemical Society*, **160** (3) H185-H191 (2013).

2012

- 52 **H. Castaneda**, M. Galicia, Proposed model for quantification of dissolution and evolution for steel-CO₂ solution porous interface by AC impedance-Transmission Line, *J. of Solid State Electrochemistry*, Volume 16, Issue 9 (2012), Page 3045-3058.

2011

- 53 Camacho-Alanis, F., **Castaneda, H.** , Zangari, G., Swami, N.S., Electrochemical impedance study of GaAs surface charge modulation through the deprotonation of carboxylic acid monolayers, *Langmuir*, Volume 27, Issue 18, 20 September 2011, Pages 11273-11277.

2010

- 54 Lingling Wu, Fernanda Camacho-Alanis, **H. Castaneda**, Giovanni Zangari, Nathan Swami Sensing the Effect of Light on Self Assembled Monolayer on GaAs using Electrochemical Impedance Spectroscopy, *Electrochimica Acta*, 55(2010), 28 pp 8758-8765.
- 54 **H. Castaneda**, B. Tan, J.Saunders, Electrochemical characterization of the LiCoO₂ /acetylene carbon ratios for porous electrodes in lithium aqueous solutions by Electrochemical Impedance Spectroscopy, *Electrochimica Acta*, Volume 55, Issue 13, 1 May 2010, Pages 4137-4143.
- 55 F.Farelas*, M.Galicia, B.Brown, S.Nesic, **H. Castaneda**, Evolution of active-passive mechanisms at the interface of carbon steel CO₂ corrosion environment by EIS“, *Corrosion Science* 52, pp. 509– 517. (2010).

2009

- 56 **H. Castaneda**, The impact of sour environment in anodic dissolution of metallic structures used in the refinery industry, *Hydrocarbon World*, 4 (2) 2009.
- 57 **H.Castaneda**, E. Sosa, Espinosa, M.A., Film properties and stability influence on impedance distribution during the dissolution process of low-carbon steel exposed to modified alkaline sour environment, *Corrosion Science*, 51, No. 4, pp 799-806, 2009.

2008

- 58 **H. Castaneda**, X. D. Benetton, SRB-Biofilm influence in active corrosion sites formed at steel-electrolyte interface when exposed to artificial seawater, *Corrosion Science* 50, No.4, pp 1169-1183, 2008.

2007

- 59 Balasundaraprabhu, R., Jayakumar, S., Kannan, M.D., Muthukumarasamy, N., Velumani, S., **Castaneda, H.**, Characterization of hot wall deposited CdSe_{0.6}Te_{0.4} thin films, *Journal of New Materials for Electrochemical Systems*, 10 (1), pp. 55-59, 2007.
- 60 **Castaneda, H.**, Kim, S.-I., Kim, Y.-H., Kim, Y.T., Wakahara, A., Son, C.-S., Choi, I.-H., Optical properties of Er-doped GaN, *Revista Mexicana de Fisica*, 53 (1), pp. 9-12, 2007.

2006

- 61 E. Sosa, V. Garcia and **H. Castaneda**, Impedance distribution at the interface of the API steel X65 in marine environment, *Electrochimica Acta*, Volume 51, Issues 8-9 , 20, pp. 1855-1863. 2006.

2005

- 62 S. Velumani, **H. Castaneda**, J. Asencio, U. Pal, Chavez JA., J. Sebastian, Structural and Electrochemical Characterization of sputter deposited Nitrided NiCr alloys, *J. of Solid State Electrochemistry*, 9 (8): 535-546 2005.

2004

- 63 Son, C.-S., Kim, S.-I., Kim, Y.-H., Seong-Il, K., Kim, Y.T., Choi, I.-H., **Castaneda Lopez, H.**, Deposition Temperature dependence of ZnO/Si Grown by Pulsed Laser Deposition, *Journal of the Korean Physical Society*, Vol. 45, December 2004, pp. S685-S688.
- 64 Son, C.-S., Kim, S.-I., Kim, Y.-H., Han, I.-K., Kim, Y.T., Wakahara, A., Choi, I.-H., **Castaneda, H.**, Photoluminescence of Er-implanted GaN, *Journal of the Korean Physical Society*, 45 (4), pp. 955-958, 2004.
- 65 **H. Castaneda**, J. Alamilla, R. Perez, Life Prediction Estimation of an Underground Pipeline using alternate current impedance and reliability analysis, *Corrosion*, 60 (5): 429-436 May 2004.
- 66 **H. Castaneda**, M. Urquidi-Macdonald, Detecting External Failure and Corrosion in Coated, Buried Pipelines: Transmission Line Model and Experimental Verification. *Corrosion*, 60 (6): 538-547, 2004.

2002

- 67 M. Urquidi-Macdonald, **H. Castaneda** and Angela M. Cannon, Lithium fuel cells: I. Lithium/poly(organophosphazene) membrane anodes in KOH and seawater. *Electrochimica Acta*, 47: 2495-2503, 2002.

Book Chapters

1. Ahmad Ivan Karayan*, Deni Ferdian, Sri Harjanto, Dwi Marta Nurjaya, Ahmad Ashari and **Homero Castaneda**, Finite element analysis applications in failure analysis: Case studies, <http://dx.doi.org/10.5772/51024>

2. **H. Castaneda** and O. Rosas* Chapter 20, External corrosion of underground pipelines- critical factors, Oil and Gas Pipelines: Integrity and Safety Chapter John Wiley and Sons January 2015 Edited by Winston Revie.
3. Ahmad Ivan Karayan* and **H. Castaneda**, Corrosion Management for a Sustainable Future, Corrosion NACE Publisher, In preparation.
4. Jorge A. Mena* and H. Castaneda, *Corrosion Management for a Sustainable Concrete Infrastructures*, Corrosion NACE Publisher, In preparation.

Patents and Copyrights

- **Patent Disclosure**, Device and Method to detect coating defect, detachment, delamination on buried pipelines, Tristan Petit de Servins d'Héricourt* and **H. Castaneda**, **February 2017**.
- **Patent Pending**, U.S. Application No. 62/433,780, Synthetic Polymeric Antioxidants for Corrosion Protection, Svetlana Sukhishvili, Raman Hlushko, Hanna Hlushko, Yenny Cubides* and **H. Castaneda**, **April 2016**.
- **Patent Pending** No. WO 2015/164592A1, Application number: PCT/US2015/027275 for "A Method for Charging Batteries", **H. Castaneda** and Roberto Hernandez*, 2016.
- **Patent Pending** No. **WO 2015160927 A1** Application number: PCT/US2015/025938 for "Methods for Evaluation and Estimation of External Corrosion Damage on Buried Pipelines, **H. Castaneda**, A Yajima, H. Qindan, XM Li*, 2016
- US Patent No. 9,007,742 B2, Supercapacitor Materials and Devices: S. Risser, Bing Tan, Kevin Spahr, V. **Castaneda**, H. V. McGinnins, April 14 2015
- US Patent No. 9,318,272 B2, Nickel-Cobalt Supercapacitors and Methods of Making the same: S. Risser, Bing Tan, Kevin Spahr, V. **Castaneda**, H. V. McGinnins, April 19 2015
- MX Patent No. 260896, September 2008, **H. Castaneda**, R. Perez, M.A. Espinosa, E.Sosa, J. Mendoza, Device for the In Real Time Detection and Location of Faults on Duct Surfaces, Coatings of the Metallic structure Thereof and the Environment About the Same, in Real time.
- **H. Castaneda**, Copyright Supersecorr©. Internal corrosion software modules used for estimation of corrosion rate by speciation, control and mitigation in different oil and gas operation processes and transportation systems, 2008 Reg number TXu 1 580-993.
- **H. Castaneda**, Copyright CPTLM ©. External corrosion software modules for pipeline cathodic protection, current distribution, corrosion control, coatings, 2008, reg. number TXu 1-581-818.
- **H. Castaneda**, Copyright ILIDA ©. Integrity management procedures, software's for corrosion management in downstream facilities, 2008, reg. number TXu 1-589-609.

Proceedings and Conferences Presentations:

2017

1. Tse-Ming Chiu*, Benton Allen, Emily M. Hunt, **Homero Castaneda**, Electrochemical Performance of Nano Engineered Coatings Based on Antimicrobial Nano –Alloy in Corrosive Environment, Paper No. C2017-9465, NACE New Orleans 2017.

2. V.Valencia, M. Galicia, M. Aguirre-Ramirez, **H. Castaneda**, Electrochemical and corrosion characterization of different inorganic coated-steel under influence of marine biofilm formation, Paper No. C2017-9465 NACE New Orleans 2017.
3. She Sia Su*, **H. Castaneda**, Corrosion behavior of Zn and Zn-Al-Mg coated steel in different environments, paper #10249, RIP, NACE New Orleans 2017.
4. Yenny Cubides*, Ahmad Karayan*, Fred Goodwin, Qindan Huang and **Homero Castaneda**, Evaluation of surface treatment effectiveness on reinforced concrete structures based on electrochemical techniques vs. standard testing, paper #10212, RIP, NACE New Orleans 2017
5. Ramatou Ly*, Ted Hartwig and **H. Castaneda**, Corrosion characterization of Equal Channel Angular Extrusion Aluminum Materials, paper # 10235 RIP, NACE New Orleans 2017.
6. A. I. Karayan*, Matthew Vaughan, Jan Seitz, Rainer Eiffler, Hans Maier, Ibrahim Karaman, Bilal Mansoor and **H. Castaneda**, Effects of Grain Size Refinement and Dynamic Precipitation on Corrosion Resistance of a New Mg Alloy, paper C2017-10211, NACE New Orleans 2017.

2016

- 7 Tse-Ming Chiu*, Benton Allen, Emily M. Hunt, **H. Castaneda**, Electrochemical and Performance Testing of Nano Engineered-coatings Based on ANA Presence when Exposed to Corrosive Environment, Advanced Coatings for Wear and Corrosion Protection, Salt Lake City Utah, MS&T, **2016**.
- 8 Dongrui Yang*, Yenny Cubides*, Omar Rosas*, **Homero Castaneda**, Frederick Goodwin, Olivia R. Cromwell, and Corrosion of the reinforcement steel in concrete: Electrochemical evaluation and a new testing system construction, paper No. C2016-8347, NACE Conference, Vancouver Canada, 2016.
- 9 Seongkoo Cho* and **Homero Castaneda**, Exploring critical parameters of the damage mechanism for Corrosion of Cr (VI) Coating /Aluminum 2024 system based on deterministic-probabilistic approach, NACE RIP Symposium, p.p 119 -124, Vancouver Canada, 2016.
- 10 Dongrui Yang*, Ximing Li*, **H. Castaneda**, Flowing Fluid Loop Cell (FFLC) System Design and FFLC-based Corrosion Testing under Acid Conditions, NACE Conference, Paper 7882, Vancouver Canada, 2016.
- 11 Ximing Li*, Dongrui Yang*, **H. Castaneda**, Effect of Different Oxidation States of Polyaniline on Anticorrosion Performances of Modified Zinc Rich Primer, NACE Conference, Paper 7787, Vancouver Canada, 2016.

2015

- 12 Ayako Yajima, Hernan Rivera, Ximing Li*, Lorenzo Martinez, Robert Liang, **H. Castaneda**, Proposed ECDA Methodology Modification Based on a Case of Study of 110Km Buried Pipeline, NACE - International Corrosion Conference Series, Paper No. C2015-6022, NACE 2015.
- 13 Valencia-Goujon*, V.; Hawkins, T.; Maya-Visuet, E.; **Castaneda, H.** In Electrochemical Characterization in CO₂ saturated environment of Zn-Rich Epoxy Nanocoatings on API X52 pipeline grade steel substrate under flow conditions, Paper No C2015-6093 Corrosion NACE 2015.
- 14 Yang, D*.; **Castaneda, H.**; Minch, B.; Boothe, D. In Electrochemical Assessment of Corrosion Inhibition Effect of Several Chemical Formulas on Steel and Aluminum Substrates, Paper No. C2015-5860 Corrosion NACE 2015.
- 15 Valencia-Goujon*, **Castaneda, H.**, EIS Damage Assessment of reinforced concrete structure systems during initiation activation stage, Paper No. DOD2015-7146 Conference allies, NACE October 2015.

- 16 Yenny Cubides*, **H. Castaneda**, Corrosion protection performance of CNT-Zinc Rich Primers on carbon steel in simulated concrete pore solution, DOD2015-6641 DoD Conference allies, NACE October 2015.
- 17 Guerrero, J. E.*; Karayan, A. I.*; Velez, M.; Jata, K.; **Lopez, H. C.** In Evaluation of Susceptibility to Exfoliation Corrosion of Al-Li 2060 Aluminum Lithium Alloy Using Electrochemical Techniques in EXCO Solution, Paper No C2015-5805, Corrosion NACE 2015.
- 18 Bi-min Zhang NewbyHua Wang, Lu-Kwang Ju, **Homero Castaneda**, Gang Cheng, Corrosion Behaviors of Carbon Steel C1010 and Stainless Steel 304 in the Presence of Iron Oxidizing Bacteria Acidithiobacillus Ferrooxidans, NACE International Corrosion Conference Series, Paper No C2015-6060, Corrosion NACE 2015.
- 19 Prajakatta Mulay*, **H. Castaneda**, Damage Evolution of Magnesium Rich Primer Applied on Al 2024 T-3 System, Research in Progress (RIP) Symposium Session, "Corrosion in Energy Systems", Paper No. C2015-6855, Corrosion NACE 2015.
- 20 Yenny Cubides*, Enrique Maya*, **Homero Castaneda**, Effect of Titanium Dioxide (TiO₂) Content in the Damage Quantification for a Polyurethane/Polysiloxane Hybrid Coating/Aluminum Substrate in Sodium Chloride Solutions, Research in Progress (RIP) Symposium Session, "Corrosion in Energy Systems", Paper No. C2015-6854, Corrosion NACE 2015.
- 21 Ximing Li* and **H. Castaneda**, Investigation of Corrosion Protection Performance of Zinc-Rich Epoxy Primer Modified by Polyaniline "Corrosion in Energy Systems", Paper No. C2015-6853, Corrosion NACE 2015.
- 22 Enrique Maya*, **H. Castaneda**, Corrosion Protection Mechanisms Characterization on a Zinc Rich Epoxy Nano Coating, Corrosion in Energy Systems", Paper No. C2015-6593, Corrosion NACE 2015.

2014

- 23 **H. Castaneda**, Health monitoring tools for buried pipelines –New concepts and trends to manage time dependent treats (corrosion process), 2014 American Gas Association Operations Conference – May 20-23, Pittsburgh, PA
- 24 Ximing Li* and **H. Castaneda**, Influence of soil parameters on coating damage evolution of X52 pipeline steel under cathodic protection conditions, Corrosion NACE 2014 San Antonio, TX, Paper 4087, pp. 1-13.
- 25 Dongrui Yang*, O. Rosas and **H. Castaneda**, Characterization of the inhibition effect in pipeline grade steel for ionic liquids in CO₂-saturated NaCl brine solutions, Corrosion NACE 2014 San Antonio, TX, Paper 4357, pp. 1-14
- 26 A. Yajima, R. Liang, H. Rivera, L.Martinez, A. I. Karayan, **H. Castaneda**, Macro modeling concept for the soil/coating external corrosion for ECDA process by using statistical tools- A case of study, Corrosion NACE 2014 San Antonio, TX, Paper 4412, pp. 1-11
- 27 Yenny Cubides*and **H. Castaneda**, Electrochemical characterization in alkaline solutions of zinc-rich epoxy nano coating primer (ZREP) coated steel in presence of chloride ions, Corrosion NACE 2014 San Antonio, TX. C2014-5296
- 28 J. Esquivel* and **H. Castaneda**, Electrochemical Characterization of 2003 Lean Duplex Stainless Steel in Chloride-Containing Solution, Corrosion NACE 2014 San Antonio, TX. C2014-5308.
- 29 V. Valencia* and **H. Castaneda**, Electrochemical Study of UNS G10080 steel substrate/ polypyrrol interface by damage evolution via LEIS, and EIS Approach Corrosion NACE 2014 San Antonio, TX., C2014-5307

- 30 Ayako Yajima, **H. Castaneda**, Hui Wang, and Robert Liang, Application of cluster analysis for soil corrosivity assessment, Transportation Research Board (TRB) 93rd Annual Meeting Washington, D.C., 2014.
- 31 Austin Smith* and **H. Castaneda**, Early stage analysis by time domain approach for non-hex chrome coatings and AA2024/AA7075 substrate, Research in Progress, NACE 2014, San Antonio TX.
- 32 Jiani Niu* and **H. Castaneda**, Proposed model and experimental verification for the electroactive species mechanisms in Hex-Chrome free coating/2024 T3 system by 2D-transmission line model, Research in Progress, NACE 2014, San Antonio TX.
- 33 Enrique Maya-Visuet*, Todd Hawkins and **H. Castaneda**, Electrochemical characterization of a zinc rich epoxy nano-coating primer in NaCl solutions, Research in Progress, NACE 2014, San Antonio TX.
- 34 Ahmad Ivan Karayan* and **H. Castaneda**, Proposal of crevice corrosion assembly for the characterization of UNS2003 in NaCl solutions, Research in Progress, NACE 2014, San Antonio TX.

2013

- 35 H. Castaneda, Invited Lecture “Materials selection for oil and gas applications Aalen University, Germany, Dec 2013.
- 36 Ximing Li*, Q.Huang and **H. Castaneda**, Corrosion assessment of underground coated pipelines based on coating/steel damage evolution and system reliability analysis, Western NACE Conference in Honolulu, HI, November 2013.
- 37 A Yajima, R. Liang, X.M. Li, **H. Castaneda**, Dynamic characterization for soil/environmental conditions in coating/substrate metal interface systems by data mining (probability) modeling, Oral presentation Electrochemical Society Meeting, San Francisco, CA October 2013.
- 38 **H. Castaneda**, R. Hernandez*, J. Saunders, O. Rosas, Characterizing Lithium ion dendrites growth with dynamic impedance and transmission line modeling- initial stage and grow stage, Oral presentation ISE, Qro, Mexico, September 2013.
- 39 O. Rosas*, J. Saunders, **H. Castaneda** and R. Hernandez*, Time evolution quantification of the interfacial parameters for lithium ion interfaces using liquid ions, Oral presentation ISE, Qro, Mexico, September 2013.
- 40 M. Galicia, **H. Castaneda**, Glassy carbon electrode scaffold modification with chitosan-SWCNT and chitosan-MWCNT and their electrochemical characterization under flow regime influence, Oral presentation ISE, Qro, Mexico, September 2013.
- 41 F. Arya, L. Zhang, A. Rahimi, H. Rivera, L. Martinez, **H. Castaneda**, Dynamic macro modeling for the soil characteristics as complement for Pre-evaluation step in the ECDA Method, NACE Paper No 2574, Orlando Florida 2013.
- 42 Yajie Chen, Rebecca Howdyshell, Bi-Min Zhang Newby, **H. Castaneda**, John M. Senko, Severe pitting corrosion caused by a starving sulfate-reducing bacterium surviving on carbon steel and effect of surface roughness, NACE paper No. 356, Orlando Florida 2013.
- 43 Ivan Karajan* and **H. Castaneda**, Electrochemical characterization of steel in active interface due to heterogeneous layer in CO₂ environment for two NaCl concentrations NACE paper No. 2586, Orlando Florida 2013.
- 44 Ana Bacco*, Britt Minch, Ben Faber, **H. Castaneda**, Rust preventive film characterization by electrochemical impedance spectroscopy and the ASTM B117 method, NACE paper No 2569, Orlando Florida Accepted 2013.

- 45 Enrique Maya-Visuet*, Ahmad Ivan Karayan*, **H. Castaneda**, Electrochemical characterization of UNS S31603, S32205, S32760, N08367, and S3210, RIP Corrosion NACE, Orlando Florida 2013.
- 46 Dongrui Yang* and **H. Castaneda**, Layering evolution for the steel/CO₂ electrochemical interface with imidazolium compounds by EIS, RIP Corrosion NACE, Orlando Florida 2013.

2012

- 47 H. Castaneda, Invited Course, National University of Mexico (UNAM), “Electrochemical impedance spectroscopy applied to electrochemical cells for energy conversion and storage Mexico City, MX Feb 2012
- 48 H. Castaneda, Invited Lecture, “New perspectives on characterizing corrosion science and engineering Las Vegas, NV Oct 2012
- 49 Enrique Maya-Visuet*, Ahmad Ivan Karayan*, **H. Castaneda**, Electrochemical characterization of UNS N08367 and UNS S31603 alloys in presence of chloride and bromide solutions, ECS Transactions 2012, ECS Honolulu, Hawaii.
- 50 I. Barraza*, B. Campillo, **H. Castaneda**, Tempering effect on corrosion behavior for micro-alloyed steels in NS4 solution, MRS Annual meeting 2012, Cancun Mexico
- 51 Derek Coy* and **H. Castaneda**, Monitoring Coating-Substrate System for Development of Functional expressions for Reliability analysis Corrosion NACE, Utah 2012.

2011

- 52 **H. Castaneda**, R. Mora, M. Vergara and M. Galicia, Proposal of DC basis technologies with macro tool approach to asses active-corrosion sites in buried pipelines, NACE Corrosion 2011, Houston TX. Paper No. 11313
- 53 S. Ball*, **H. Castaneda**, Demonstration of Unification of real time monitoring techniques for coating performance, DoD-Conference La Quinta, CA July 2011.
- 54 D. Coy*, **H. Castaneda**, Experimental demonstration set up for multispecies and different Stainless steel evolution in crevice corrosion, DoD-Conference La Quinta, CA July 2011

Funded Research

Sponsor and Title	Dates awarded	Budget for PI
Uakron/DoD-CERL Award (PI) Education, Technical and Outreach Products for DoD Office of Corrosion Policy and Oversight	06/2015 – 12/2017	\$190,000
DOD-USAFA Award (PI) Damage evolution of DEFT coating/7075 T6 alloy-system under stress conditions based on advanced electrochemical techniques and reliability analysis.	05/2015 - 05/2018	\$95,000
SENER-CONACyT Award (PI) Technological Alternatives For Corrosion Management Of Underground Pipelines.	03/2015-01/2016	\$100,522
DOD-USAFA Award (PI) Analysis and Evaluation of Tropic-environment Testing based on Geophysical Locations and Natural-environment versus Chamber-environment Techniques	10/2015-10/2018	\$310,000
Con Edison (PI) Experimental characterization and computer based model refinement to localize and identify coating disbondment in buried pipelines by frequency domain technology	01/2016-01/2017	\$110,000

CONACYT-SEP Basic Research Award (PI) Electrochemical characterization of different elements forming bio-electrochemical cells via Electrochemical Impedance Spectroscopy	06/2015-06/2016	\$36,000
Con Edison (PI) Full scale -field scale simulation and application to localize and identify coating disbondment in buried pipelines by frequency domain technology	11/2016-09/2017	\$65,000
Con Edison (PI) Experimental characterization to localize and identify end wall corrosion in concrete structures by reflectometry	11/2016-09/2017	\$50,000
HYUNDAI (PI) Comprehensive electrochemical and corrosion performance characterization of coating technologies	04/2017-05/2018	\$150,000
BASF (PI) Surface applied corrosion inhibitors testing	06/2016-05/2017	\$60,000
DOT (Co-PI) A prospectus for the Establishment of A REGIONAL, University Transportation Center REGION 6	05/2017-12/2018	2,000,000 Share \$120,000
TAMU/CONACyT (PI) Dynamic corrosive modeling of reinforced concrete durability and reliability structures in the Gulf of Mexico	12/2016-06/2018	\$12,000
Nanosolutions (PI) Electrochemical and performance testing of Nano-coatings materials as a corrosion control solution for corrosive environment	09/2016-03/2017	\$12,000

At UAkron

SENER-CONACyT Hydrocarbons Award (PI) Mutiscale tools for corrosion science and engineering in buried pipelines: enhancement of corrosion management technologies for external corrosion, internal corrosion and stress corrosion cracking.	11/2011-05/2015	\$4,250,000 \$1,032, 243 (share to HCL-PI)
ODOT (Co-PI) Development of a management system for corrosion-damaged reinforced concrete bridge superstructure elements	09/2013-09/2015	\$660,000 (200,00 share to HCL-PI)
DOE ARPA-e Award (PI) Dynamic electrochemical characterization and monitoring of operating lithium ion batteries	11/2012-10/2014	\$999,995 \$125,000 (share to HCL-PI)
Con Edison (PI) Experimental set up and characterization for coating dis-bodment for buried pipelines (phase II)	01/2014-07/2015	\$150,220
PPG (PI) Damage evolution of coating/steel interface, lifetime prediction determination for oil and gas infrastructure (Phase I)	01/2013-12/2013	\$49,995
PPG (PI) Damage evolution of coating/steel interface, lifetime prediction determination for oil and gas pipelines	01/2014-12/2014	\$30,000
CONACYT-SEP Basic Research Award (Co-PI) Characterization and development of electrodes and charge transfer processes for Biofuel cells	10/2012-05/2015	\$100,000
Lubrizol (PI) Evaluation of electrochemical tools for performance of	01/2012-01/2013	\$25,000

corrosion resistant rust preventatives (phase I)		
Lubrizol (PI) Characterization of water based inhibitors in different alloys under flow conditions (phase II)	01/2014-12/2015	\$50,000
Cargill (PI) Materials selection for storage tanks	09/2011-12/2012	\$15,000
Cargill (PI) Failure Analysis for storage tank in special alloys	06/2013-08/2013	\$3,000
Department of Defense-CERL (PI) Unification of coating damage/performance technologies as a basis for damage functions and reliability analysis	07/2011-07/2014	\$125,000
Department of Defense-CERL (PI) The integration of theoretical and experimental corrosion assessment tools to monitor and manage coating/substrate integrity	07/2013-07/2015	\$250,000
KOCH Industries (PI) Methodology for determining possible causes for Graphite Support Bar Failure	03/2012-10/2012	\$10,000
Department of Defense-CERL (Co-PI) Corrosion assessment for concrete rebar structures	07/2011-07/2014	\$120,000
Department of Defense-AFRL (PI) Corrosion assessment for coating/substrate system based on deterministic and probabilistic approach	07/2011-07/2014	\$155,000
Department of Defense-CERL (Co-PI) Validation of model for crevice corrosion by experimental testing for metal/ alloys used for military applications	07/2011-07/2014	\$30,000
WRAYCO Industries Tank Coatings: Internal coating evaluation for biodiesel containers	02/2013-09/2013	\$15,000
Department of Defense-CERL (PI) Design, testing and characterization of microscale, concrete corrosion test cells	07/2011-07/2014	\$40,000
Department of Defense-AFRL (Co-PI) Microbiology induced corrosion-monitoring and assessment	06/2011-12/2012	\$15,000

Presentations and Invited Lectures

- Keynote speaker, Comprehensive development of External Corrosion Direct Assessment methodology to enhance reliability and integrity of pipelines Latin Corr November 2016, Mexico City.
- Keynote speaker, New trends in multiscale hybrid nano coating characterization and design based on damage evolution concept and corrosion mechanisms Mexican Society of electrochemistry SMEQ Conference, May 30th 2016, Monterrey Mexico
- Keynote Speaker, Current Research, Education and Resources of the NCMRC at Texas A&M University, Colombian Corrosion Section, ASCORR, August 22 nd to 26th, 2016, Bucaramanga, Colombia.

- Invited Lecture Note, Comprehensive Multiscale Computational & Lab Tools to Characterize, Design & Select Coating/ Substrate Technologies in Corrosive Environments Texas A&M Qatar, Doha Qatar, September 2016.
- Keynote speaker, Electrochemical Characterization of stainless steel alloys in corrosive environment – Perspectives for two corrosion resistance alloys (UNS S32003 and UNS N08367). Ferrous and Base Metals Development Network Conference 2016, 19–21 October 2016, Southern Sun Elangeni Maharani Hotel, KwaZulu-Natal, South Africa.
- Invited Lecture, Materials selection for Oil and Gas applications Germany, Aalen University, December 16, 2013
- Invited Lecture, American Gas Association Pittsburgh , PA March 2014
- Invited Lecture, CRGI Technical Directors Meeting Oct 25-27 Las Vegas, New perspectives on Characterizing Corrosion Science and Engineering
- Invited Course, National University of Mexico (UNAM) Mexico City february 2012, Electrochemical Impedance Spectroscopy Applied to Electrochemical Cells for Energy Conversion and Storage.
- Invited Lecture, DNV-Columbus Ohio, “Electrochemical techniques to survey steel buried structures“, June 2009
- Invited Lecture, Material selection for CO₂ corrosion for transportation in supercritical conditions. TMS 2009 ASM/TMS Spring symposium, Materials Challenges for Alternative Energy, GE Global Research Center, May 2009
- Invited Lecture, 3rd Mexican workshop on Nanostructure Materials, CINVESTAV Mexico.
- “Design and selection of Nano-engineered materials for Storage Energy Biofuels applications”, June 2008
- Invited Lecture, XVI INTERNATIONAL MATERIALS RESEARCH CONGRESS 2007, Electrochemical “Characterization and modeling applied to sub-micron scales in materials exposed to heterogeneous reactions for energy storage”, Symposium 19, Advances in Semiconducting Materials, June 2007
- Invited Lecture, “Electrode materials for electrochemical processes, theoretical and experimental design by using electrochemical impedance spectroscopy“ Ohio State University Symposium, February, 2002
- Invited Lecture, “Electrochemical Impedance Spectroscopy Applied to Metal-Aqueous Interface Systems” Presentation for United Technologies Corporation Hartford, Connecticut USA, November, 2000

- Invited Lecture, “Electrochemical Techniques and Deterministic Models in Electrochemistry Applied to Metal-Aqueous Interface Systems”
Presentation for SIEMENS Co. Lowell Massachusetts, USA, January, 2001
- Invited Lecture, “Electrochemical Methods Applied to Metallic Coating Interfaces”,
Presentation for Brussels University VRIJE UNIVERSITEIT BRUSSEL, April, 2001.
- Invited Lecture, ”Monitoring Techniques in Corrosion Engineering”
Chemical School, UNAM (National University of Mexico),October, 1996

Graduate students (current and past, U Akron and Texas A&M)

Name	Degree, Graduation Year	Current Activity
Enrique Maya Visuet	PhD in Engineering (2015), Akron	Research Scientist at Final Coat, Canton OH
Ahmad Ivan Karayan	PhD in Engineering (2015) Akron	Research Associate at Texas A&M University, College Station USA
Ximing Li	PhD in Engineering (2015) Akron	Research Scientist at Lubrizol, Cleveland OH
Dongrui Yang	PhD in Engineering (2016) Akron	Postdoctoral Fellow at West Virginia University
Jiani Niu	M.S. Chemical and Biomolecular Engineering (2014), Akron	Thermal Engineer at Cooling Source, Emeryville CA
Austin Smith	M.S. Chemical and Biomolecular Engineering (2014), Akron	Application Scientist at Lubrizol Co., Cleveland OH
Prajakatta Mulay	M.S. Chemical and Biomolecular Engineering (2015), Akron	PhD Student in Chemical Engineering at The University of Akron
Javier Esquivel	M.S. Chemical and Biomolecular Engineering (2015), Akron	PhD Student in Chemical Engineering at The University of Akron
Violeta Valencia	M.S. Chemical and Biomolecular Engineering (2015), Akron	PhD Student in Biomedical Sciences at UACJ, Chihuahua Mexico
AT TAMU		
Yenny Cubides	M.S. Materials Science and Engineering (2016)	PhD student in Materials Science and Engineering at TAMU
Ian Coleman	M.S. Materials Science and Engineering (2017)	Current student
Seongkoo Cho	Ph.D. Materials Science and Engineering (2019)	Current student
Tse-Ming Chiu	Ph.D. Materials Science and Engineering (2019)	Current student
Yenny Cubides	Ph.D. Materials Science and Engineering (2019)	Current student
Mahdi Mohajeri	Ph.D. Materials Science and Engineering (2018)	Current student

Ly Ramatou	Ph.D. Materials Science and Engineering (2018)	Current student
Brenda Galicia	Ph.D. Materials Science and Engineering (2018)	Current student
Tristan Petit De Servis	M.S. Materials Science and Engineering (2017)	Current student
Edward Aborowa	M.I. Materials Science and Engineering (2016)	Senior Material Engineer at Rodiak Pipeline, Houston Tx
Arash Shadravan	Ph.D. Materials Science and Engineering (2019)	Current student
Nyvian Musavvir	M.I. Materials Science and Engineering (2017)	Current student
Reece Goldsberry	M.S. Materials Science and Engineering (2018)	Current student

Postdoctoral Fellows/Exchange Research Fellows

- Dr. Ahmad Ivan Karayan, Emerging materials for extreme environments, DoD USAFA, (2016-2018)
- Dr. Shei Sia Su, Atmospheric corrosion in tropical environments, UAkorn/DoD-CERL, (2016-2017)
- Dr. Israel Barraza Fierro, Stress Corrosion Cracking in API steel pipelines, CONACyT (2016-2018)
- Mr. Kim Byungsu, Characterization and Modeling of automotive coatings, Hyundai Co. South Korea (2017-2018)

Postdoctoral Alumni

- Jorge Alamilla, Postdoctoral Fellow Oct 2004-Oct 2005, Topic: Risk assessment and life time prediction calculation for buried pipeline systems transporting hydrocarbons, currently Pipelines and Corrosion Manager at Mexican Petroleum Institute, Mexico.
- Velumani Subramanian, Postdoctoral Fellow Oct 2003-Jan 2005, Topic: Nanomaterials characterization for alternative energy sources“, currently Professor at CINVESTAV- Mexico.
- Fernando Farelax, Thesis: Electrochemical modeling of the mechanisms of steel-CO₂ process under flow conditions, Ph. D. Defense 2010, currently Project Leader. At Ohio University
- Dr. Omar Rosas, Topics: Internal corrosion in pipelines, corrosion in concrete structures, materials selection for corrosion and Li-ion batteries, NSF-Mexico, DOE-ARPA-e, (2012-2014), currently Research Scientist at DoxSteel Company Houston Tx.
- Dr. Roberto Hernandez, Topics: Lithium ion batteries, non-chromate coatings and corrosion inhibitors, DOE-ARPA-e and DoD, (2013-2015), currently Research Scientist at CINVESTAV
- Dr. Roman Cabrera, Topics: CO₂ corrosion during flow conditions and API steel grade, CONACyT, (2014-2015), currently Professor at Mexican National Polytechnic Institute

Undergraduate students

- Reece Goldsberry, Physics- Coatings, Internal corrosion in pipelines, Texas A&M University now in Graduate School at TAMU
- David Waliworski, Corrosion Engineering –Coatings, Internal corrosion in pipelines, now in BP
- Ana Bacco, Corrosion Engineering –Thin films and inhibitors, now in Phillips
- Kyle Platt, Corrosion Engineering- Stainless steel alloys and thin films, now in Marathon
- Ian Coleman, Corrosion Engineering- Stainless steel alloys and thin films, now graduate student at TAMU
- Derrick Coy, Corrosion Engineering- Coatings and crevice corrosion, now in Marathon
- Stephen Ball, Corrosion Engineering- Coatings characterization, now in Marathon
- Joshua Geyer, Corrosion Engineer- Stainless Steel characterization, now in Colonial Pipeline
- Feby Mathew, Corrosion Engineer- Coatings and Materials, now in Huntington Ingalls Industries.
- Michael Harris, Corrosion Engineer- Super duplex Stainless Steel characterization, no in Marathon.
- Abigail Helbling, Corrosion Engineer- Corrosion Inhibitors, now in Marathon
- Jacob Sines, Corrosion Engineer, Cathodic protection for SCC, now in Marathon Petroleum

Teaching

At U Akron

2011	Level	Semester	Evaluation
Chemical Computations-co teach 4200:121:002	Undergraduate	2011 Spring	4.099/ 5.0
Chemical Computations-co teach 4200:121:001	Undergraduate	2011 Spring	4.027/ 5.0
MEB 4200:200:002	Undergraduate	2011 Fall	4.415/ 5.0
2012			
Chemical Computations 4200:121:002	Undergraduate	2012 Spring	4.390/ 5.0
Corrosion I Laboratory 4250:301:001	Undergraduate	2012 Fall	4.493/ 5.0
MEB 4200:200:001	Undergraduate	2012 Fall	4.343/ 5.0
2013			
Chemical Computations 4200:121:002	Undergraduate	2013 Spring	4.506/ 5.0
Advanced Electrochemistry 4200:696:003	Graduate	2013 Spring	4.907/ 5.0
MEB-co teach 4250:200:001	Undergraduate	2013 Fall	4.017/ 5.0
MEB-co teach 4200:200:002	Undergraduate	2013 Fall	4.459/ 5.0
2014			
Materials Science for Corr 4250:121:001	Undergraduate	2014 Spring	4.113/ 5.0

Corrosion Management 4250:401:001	Undergraduate Graduate	2014 Fall	3.907/ 5.0
2015			
Advanced Corrosion –Cathodic Protection 4250:501:001	Undergraduate	2015 Spring	4.200/5.0

At TAMU

2015			
Materials Electrochemistry and Corrosion MSEN 440	Undergraduate	2015 Fall	4.13/ 5.0
Materials Electrochemistry and Corrosion MSEN 689	Graduate	2015 Fall	4.69/ 5.0
2016			
Corrosion Prevention and Control MSEN 446	Graduate/Undergraduate	2016 Spring	4.81/ 5.0
Materials Electrochemistry and Corrosion MSEN 440	Undergraduate	2016 Fall	4.48/ 5.0
Materials Electrochemistry and Corrosion MSEN 689	Graduate	2016 Fall	4.78/ 5.0
2017			
Corrosion Engineering MEEN 460	Undergraduate	2017 Spring	NA
Corrosion Engineering MEEN 660	Graduate	2017 Spring	NA

Service

- EFAC committee member for the College of Engineering, May 2017 - now
- Design and construction committee for the Center for Infrastructure Renewal (CIR), Sept 2015 – now
- Search committee for the Center for Infrastructure Renewal building director, Sept 2015
- Director of the National Corrosion and Materials Reliability Center, April 2015 –now
- NAE, Member for the National Academies of Science, Engineering and Medicine’s study on Connector Reliability for Offshore Oil and Natural Gas Operations (2016)
- SMEQ, Directive Board for the Electrochemical Society –Elected National office (2013-2015)
- CONACYT, RCEA proposal reviewer and SENER-CONACyT (2011-2017)
- NACE, Panel for the Cathodic Protection Certification Reviewer in Cathodic Protection, (July 2016)
- NACE, National Association of Corrosion Engineers, Research Committee Member, (2014-2018)
- Co-Chairman of the International Society of Electrochemistry, Baltimore, USA, 2017
- Chairman for the Risk Assessment Conference in Houston, NACE 2017.
- Co-Chairman of the Symposium, Coatings and Wear, Salt Lake City, UT, ES&T c2016-ASM Conference.

- Co-Chairman of the Symposium, Emerging Materials, TMS Conference, San Diego, CA, February 2017
- Professional Exams Committee for BS and MS degree at the Autonomous Metropolitan University (UAM), January 2003 to date
- Professional Exams Committee for Postgraduate Exams at the National University of Mexico (UNAM), January 2003 to date
- Permanent Committee member for Energy and Reliability Engineering Projects at the National University of Mexico, July 2003 to date
- Chairman of the Research in Progress Symposium, Coatings and Inhibitors, NACE 2017.
- Chairman of the Symposium STG 30 NACE (2007, 2009, 2011)
- Chairman of the Symposium Electrochemical Society (D3-2006), D2-2014
- Journal associate editor Advanced Materials Publications Petrotex Society (2013-)

Prior TAMU

- *2012* Search Committee for the Chemical and Biomolecular Engineering Chairman, the University of Akron
- *2012* Search Committee for the Chemical and Biomolecular Engineering Assistant Professor position for Corrosion Engineering Program, the University of Akron
- *2013* Search Committee for the Chemical and Biomolecular Engineering Assistant Professor position for Corrosion Engineering Program, the University of Akron
- *2013* Search Committee for the Chemical and Biomolecular Engineering Open rank position for Corrosion Engineering Program, the University of Akron
- *2012-* Chairman of the Committee for Scholarships in Chemical and Biomolecular Engineering Department, the University of Akron
University

Department Service

17 graduate students as committee member (7 MS and 10 PhD)

Edna Mendez Ortiz - PhD in CHEN

Seongkoo . Cho - PhD in MSEN

Mihir . Mishra - MS in CVEN

Mahdi . Mohajeri - PhD in MSEN

Shuang . Xiao - PhD in MEEN

Michael A. Liu - MS in MSEN

Tristan Christo . Petit De Servins D'Herico - MS in MSEN

Ian . Coleman - MS in MSEN

Emily M. Emmons - MS in MSEN

Havva Cansu . Yilmaz - MS in MSEN

Henry Taisun . Lin - MS in MSEN

Jahanzaib . Malik - PhD in MSEN

Edward . Aborowa - MEN in MSEN

Yuan . Yue - PhD in MSEN

Yenny Paola . Cubides Gonzalez - MS in MSEN

Pranav . Kannan - PhD in CHEN

Pilar . Suarez Martinez - PhD in CHEN

Prior TAMU

- | | | |
|-------------------|--------------------------------|------|
| • Mauricio Echev. | Ph.D. Polymer Engineering | 2012 |
| • Ankit Patel | M.S. Chem and Bio Engineering | 2012 |
| • Bin Cao | Ph.D. Chem and Bio Engineering | 2013 |
| • Jeongwoo Lee | Ph.D. Polymer Engineering | 2013 |
| • Nader Hedayat | Ph.D. Chem and Bio Engineering | 2014 |
| • Seyed Ali Mod. | Ph.D. Chem and Bio Engineering | 2014 |
| • Ashish Bandekar | Ph.D. Chem and Bio Engineering | 2014 |
| • Aaron Stenta | Ph.D. Engineering-Applied Math | 2014 |
| • Azadeh Risma. | Ph.D. Chem and Bio Engineering | 2014 |

Reviewer Activities

- ♦ Reviewer of proposals for Chilean National Science and Technology Commission FONDECYT Regular 2017 grant competition, appointed December 2016
- ♦ Reviewer for Gordon Conferences, Oxidation and Corrosion Session, appointed, August 2016.
- ♦ Reviewer for Netherlands Foundation for Fundamental Research on Matter, FOM, as part of the High Tech Materials call, appointed, MICROCORR, July 2015.
- ♦ Reviewer for CONACyT, RCA reviewer for 3 proposals for the Basic Research and Technology RFP during the cycle 2015-2017.
- ♦ Reviewer for Books Chapter Elsevier, Pipeline Integrity 2nd edition, September 2016
- ♦ Outstanding reviewer Elsevier for Corrosion Science
- ♦ Paper Reviews for the past two years: 30

Electrochimica Acta 4 reviews (04/2015; 01/16; 04/16; 08/16); J. Solid State Electrochemistry 1 review (04/2015); Corrosion Science 3 reviews (09/2015; 04/2016; 01/2017); Metallurgical and Materials Transactions B 5 reviews (06/2015; 02/2016; 03/2016; 05/2016; 11/2016); Journal of Adhesion Science and Technology 1 review (09/2016); Aircraft Engineering and Aerospace Technology 1 review (10/2016); Progress in Organic Coatings 2 reviews (09/2016; 11/2016); J. Electrochemical Society 2 reviews (09/2016;12/2016); Journal of Industrial Engineering 1 review (09/2016); International Biodeterioration & Biodegradation 1 review (02/2017); Tunneling and Underground Space Technology 1 review (02/2017); Nuclear Engineering and Design 2 reviews (06/2016; 02/2017); Canadian Metallurgical Quarterly 2 reviews (03/2015; 11/2016); Corrosion NACE 2 reviews (11/2016; 01/2017); Nature Materials 1 review (11/2016); Corrosion Science and Technology 1 review (08/2016); Alloys and Compounds 1 review (02/2017), Corrosion Reviews 1 review (02/2017)

Summary

Journal	5-year Impact Factor	2015	2016/17
Electrochim. Acta	4.088	1	3
J. Solid State Electrochem.	2.279	1	1
Corros. Eng., Sci. Technol.	0.537		1
Corr. Science	4.016	1	2
Corrosion Reviews	0.83		1
Can. Metall. Q.	0.416	1	
Metallurgical and Materials Transactions B	1.460	1	
J. Electrochemical Society	3.31		2
Tunneling and Underground Space Technology	1.74		1
International Biodeterioration & Biodegradation	2.42		1
Journal of Adhesion Science and Technology	1.78		1
Nuclear Engineering and Design	0.952		2
Progress in Organic Coatings	2.63		2
Aircraft Engineering and Aerospace Technology	2.56		1
Nature Materials	38.89		1
Alloys and Compounds	3.2		1
Journal of Industrial Engineering	2.11		1
Corrosion-NACE	1.772	2	2
Total number of reviews		7	23

To the best of my knowledge this CV is current and correct as of the date of the signature.

Sincerely,



Homero Castaneda
Associate Professor
Director of the National Corrosion and Materials Reliability Center
Materials Science and Engineering
Texas A&M University