

CURRICULUM VITAE

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Dr. Karin Y. Chumbimuni-Torres

Chemistry Department
University of Central Florida
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1. GENERAL INFORMATION

1.1. EDUCATION

- 2006 **Ph.D. in Chemistry**
University of Campinas, Sao Paulo, Brazil.
Advisor: Lauro Tatsuo Kubota
Dissertation: Development of Ion-Selective Electrodes: Application in simultaneous detection system in flow injection analysis and strategies for the improvement of the detection limit.
- 2001 **M.Sc. in Chemistry**
University of Campinas, Sao Paulo, Brazil.
Advisor: Lauro Tatsuo Kubota
Thesis: Development of Calcium Ion-Selective electrode and application in flow injection analysis in serum.
- 1997 **B.S. in Chemistry**
National University of Engineering, Lima, Peru.

1.2. POSTDOCTORAL TRAINING

- 2008-2010 **Postdoctoral Research Associate**
Nanoengineering Department, University of California at San Diego
Research Advisor: Joseph Wang
Development of electrochemical sensors using nanomaterials as markers for protein, DNA and bacteria detection.
- 2007-2008 **Postdoctoral Research Associate**
Department of Chemistry, Purdue University
Research Advisor: Eric Bakker
Development of potentiometric sensors for different ions with low limits of detection in small volume samples for bioanalysis.

1.3. PROFESSIONAL EMPLOYMENT

- 2012-Present **Assistant Professor**
Chemistry Department, University of Central Florida, Orlando, FL
- 2010-1012 **Research Associate II**
Department of Chemistry, The University of Texas at San Antonio, Texas, TX

1.4. HONORS AND AWARDS

- 2015 Outstanding Four-Year College Teacher by The American Chemical Society - Orlando Section.
- 2007 Visiting Postdoctoral Associate. Biodesign Institute, Arizona State University, AZ
- 2005 International Academic Exchange Program (Sao Paulo Research Foundation (FAPESP)). Chemistry Department. Auburn University, Alabama.
- 2002-2006 Scholarship from Sao Paulo Research Foundation (FAPESP), at University of Campinas, San Paulo, Brazil.
- 1999-2001 Scholarship from Coordination of Improvement of Higher Education Personnel (CAPES), at University of Campinas, Sao Paulo, Brazil.

2. RESEARCH

2.1. RESEARCH INTERESTS

Development, characterization, and understanding of chemical sensors for bioanalytical applications. Focusing in electrochemical sensors and optodes for the detection of cancer biomarkers in ultra-low volume samples using nanoparticles as labels. Synthesis of nanostructures for sensors applications, studying interactions at the interface of biomolecules and nanomaterials, and the development of biocompatible materials for analytical devices.

2.2. PUBLICATIONS

Presented below are 31 publications. They include 1 book, 1 chapter, 2 reviews, and 27 peer-reviewed research papers, two conference proceedings and one patent. The corresponding author is indicated with an asterisk. Total citations up to January, 2016 are 607 (according Web of Science).

2.2.1. BOOK AND BOOK CHAPTERS

1. Carlos D. Garcia, Karin Y. Chumbimuni-Torres and Emanuel Carrilho. 2013. Capillary Electrophoresis and Microchip Capillary Electrophoresis: Principles, Applications, and Limitations. John Wiley & Sons, Hoboken, NJ. ISBN: 978-0-470-57217-7.
2. Felhofer, J., Chumbimuni-Torres, K., Garcia, C. Critical Evaluation of the Use of Surfactants in Capillary Electrophoresis. Chapter 1. In: Capillary Electrophoresis and Microchip Capillary Electrophoresis: Principles, Applications, and Limitations. John Wiley & Sons, Hoboken, NJ. ISBN: 978-0-470-57217-7.

2.2.2. PEER-REVIEWED REVIEWS

3. Bakker, E.,* Chumbimuni-Torres, K. Y. (2008) Modern directions for potentiometric sensors. *J. Braz. Chem. Soc.* 19, 612-629.
4. Chumbimuni-Torres, K. Y., Calvo-Marzal P., Kubota, L.* (2006) Recent advances and new perspectives of ion-selective electrodes. *Quim. Nova* 29, 1094-1100.

2.2.3. PEER-REVIEWED RESEARCH ARTICLES

5. Patel, P., Chumbimuni-Torres, K. Y.* (2016) Visible light-induced ion-selective optodes based on a metastable photoacid for cation detection. *Analyst*, 141, 85-89.
6. Patel, P., Johns, V., Mills, D. M., Boone, J. E., Calvo-Marzal, P., Chumbimuni-Torres, K. Y.* (2015)

- Tuning the Equilibrium Response Time of Meta-Stable Photoacids in Ion-Sensors by Appropriate Functionalization. *Electroanalysis*, 27, 677-683.
7. Johns, V., Patel, P., Hasset, S., Calvo-Marzal, P., Qin, Y. Chumbimuni-Torres, K. Y.* (2014) Visible Light Activated Ion-Sensing using a Photoacid Polymer for Calcium Detection. *Anal. Chem.* 86, 6184-6187.
 8. Mensah, S., Gonzales, Y., Calvo-Marzal, P., Chumbimuni-Torres, K. Y.* (2014) Nanomolar detection limits of Cd^{2+} , Ag^{+} , and K^{+} using paper-strip-ion-selective electrodes. *Anal. Chem.* 86, 7269-7273.
 9. Duarte, L. T.*, Romano, J. M. T., Jutten, S., Chumbimuni-Torres, K. Y., Kubota, L. T. (2014) Application of Blind Source Separation Methods to Ion-Selective Electrode Arrays in Flow-Injection Analysis. *IEEE Sensors J* 14 (7) 2228-2229.
 10. Heider, E. C., Trieu, K., Diaz, V. M., Chumbimuni-Torres K. Y., Campiglia, A.*, D., Duranceau, S. J. (2013) An indium tin oxide electrode modified with gold nanorods for use in potential-controlled surface plasmon resonance studies. *Microchim. Acta*, 180, 1013-1020.
 11. Chumbimuni-Torres, K., Coronado, R. E., Mfuh, A. M., Castro-Guerrero, C., Silva, M. F., Negrete, G. R., Bizios, R., Garcia, C. D.* (2011) Adsorption of Proteins to thin-films of PDMS and its effect on the adhesion of human endothelial cells. *RSC Advances*, 1, 706-714.
 12. Chumbimuni-Torres, K. Y., Wu, J., Clawson, C., Galik, M., Walter, A., Flechsig, G. U., Bakker, E.*, Zhang, L., Wang, J.* (2010) Amplified potentiometric transduction of DNA hybridization using ion-loaded liposomes. *Analyst*, 135, 1618-1623.
 13. Chumbimuni-Torres, K. Y., Thammakhet, Ch., Galik, M., Calvo-Marzal, P., Wu, J., Bakker E.*, Flechsig, G. U., Wang, J.* (2009) High-Temperature Potentiometry: Modulated Response of Ion-Selective Electrodes during Heat Pulses. *Anal. Chem.*, 81, 10290-10294.
 14. Wu, J., Chumbimuni-Torres, K. Y., Galik, M., Thammakhet, Ch., Haake, D., Wang, J.* (2009) Potentiometric Detection of DNA Hybridization using Enzyme-Induced Metallization and a Silver Ion Selective Electrode. *Anal. Chem.*, 81, 10007-10012.
 15. Chumbimuni-Torres, K. Y., Bakker, E.*, Wang, J.* (2009) Real-time probing of the growth dynamics of nanoparticles using potentiometric ion-selective electrodes. *Electrochem. Commun.*, 11, 1964-1967.
 16. Chumbimuni-Torres, K. Y., Calvo-Marzal, P., Wang, J.* (2009) Comparison Between Potentiometric and Stripping Voltammetric Detection of Trace Metals: Measurements of Cadmium and Lead in the Presence of Thallium, Indium and Tin. *Electroanalysis*, 21, 1939-1943.
 17. Mora, L., Chumbimuni-Torres, K. Y., Clawson, C., Hernandez, L., Zhang, L., Wang, J.* (2009) Real-time electrochemical monitoring of drug release from therapeutic nanoparticles. *J. Control. Release*, 140, 69-73.
 18. Chumbimuni-Torres, K. Y., Wang, J.* (2009) Nanoparticle-induced potentiometric biosensing of NADH at copper ion-selective electrodes. *Analyst*, 134, 1614-1617.
 19. Chumbimuni-Torres, K. Y., Calvo-Marzal, P., Wang, J.*, Bakker, E.* (2008) Electrochemical sample matrix elimination for trace level potentiometric detection with polymeric membrane ion-selective electrodes. *Anal. Chem.* 80, 6114-6118.
 20. Numnuam, A., Chumbimuni-Torres, K. Y., Xiang, Y., Bash, R., Thavarungkul, P., Kanatharana, P., Pretsch, E., Wang, J.*, Bakker, E.* (2008) Potentiometric detection of DNA hybridization. *J. Am. Chem. Soc.* 130, 410-411.
 21. Numnuam, A., Chumbimuni-Torres, K. Y., Xiang, Y., Bash, R., Thavarungkul, P., Kanatharana, P., Pretsch, E., Wang, J.*, Bakker, E.* (2008) Aptamer-based potentiometric measurements of proteins

using ion-selective microelectrodes. *Anal. Chem.* 80, 707-712

22. Rubinova, N., Chumbimuni-Torres, K. Y., Bakker, E.* (2007) Solid-contact potentiometric polymer membrane microelectrodes for the detection of silver ions at the femtomole level. *Sensor and Actuators B* 121, 135-141.
23. Chumbimuni-Torres, K. Y., Rubinova, N., Radu, A., Kubota, L., Bakker, E.* (2006) Solid contact potentiometric sensors for trace level measurements. *Anal. Chem.* 78, 1318-1322.
24. Chumbimuni-Torres, K. Y., Dai, Z., Rubinova, N., Xiang, Y., Prestch, E., Wang, J.,* Bakker E.* (2006) Potentiometric biosensing of proteins with ultrasensitive ion-selective microelectrodes and nanoparticles labels. *J. Am. Chem. Soc.* 128, 13676-13677.
25. Calvo-Marzal, P., Chumbimuni-Torres, K. Y., Fenalti, N., Kubota, L.* (2006) Determination of glutathione in hemolysed erythrocyte with amperometric sensor based on TTF-TCNQ. *Clin. Chim. Acta* 371, 152-158.
26. Chumbimuni-Torres, K. Y., Kubota, L.* (2006) Simultaneous determination of calcium and potassium in coconut water by a flow-injection method with tubular potentiometric sensors. *J. Food Comp. Anal.*, 19, 225-230.
27. Calvo-Marzal, P., Chumbimuni-Torres, K. Y., Fenalti, N., Oliveira Neto, G., Kubota, L.* (2003) Determination of reduced glutathione using an amperometric carbon paste electrode chemically modified with TTF-TCNQ. *Sensor and Actuators B* 100, 333-340.
28. Chumbimuni-Torres, K. Y., Fenalti, N., Oliveira Neto, G., Kubota, L.* (2002) Determination of calcium ion in biological fluid using flow injection analysis with a tubular electrode. *Lecta* 20, 37-46.
29. Chumbimuni-Torres, K. Y.; Garcia, B. C., Fernandes, C. B. J., Oliveira Neto, G., Kubota, L.* (2001) Use of self-plasticizing EVA membrane for potentiometric anion detection. *Talanta* 53, 807-814.

2.2.4. CONFERENCE PROCEEDING

1. East, K. E., Dupras, T. L., Chumbimuni-Torres, K. Y., Williams, L., Kolpashchicov. (2015) A multidisciplinary approach to analyzing sex and gender in the ancient world using aDNA and stable isotope analysis: a pilot study from the Dakhleh, Egypt. *Abstract of Papers of the American Journal of physical Anthropology*. Pages 126-126. St. Lois, MO. 2015.
2. Felhofer, J. L., Nejadnik, M. M., Chumbimuni-Torres, K. Y., Garcia, C. D. G. (2012) Rational development of biosensors based on enzymes adsorbed onto carbon nanotubes. *Abstract of Papers of the American Chemical Society* 243, 646-COLL. San Diego, CA. March 25-29, 2012.

2.2.5. PATENTS

Patent Application #503270974 Filling date: 03/04/2015. Title: Ion-Selective Electrode and Systems and Methods Utilizing Same. Authors: Karin Y. Chumbimuni Torres, Michelle Rich, Percy Calvo-Marzal, Samantha Mensah.

2.3. PRESENTATIONS

The presenter at each conference has been underlined.

2.3.1. INVITED CONFERENCE PRESENTATIONS

1. Chumbimuni-Torres, K. Y. Workshop in Sensors and Biosensors. (2016). University of Lima. January

11th, 2016, Lima, Peru.

2. Chumbimuni-Torres, K. Y. Electrochemical Sensors for Cancer Detection. (2012). University of Central Florida. September 12th, 2012. Orlando, FL.
3. Chumbimuni-Torres, K. Y. (2008) Potentiometric Sensors for Bioanalysis. International Conference of Science and Technology, Lima, Peru. January 5, 2008.
4. Chumbimuni-Torres, K. Y. (2008) Advances in Chemistry. International seminar of science, technology and environmental”, CEPRECYT, Lima-Peru, January 5, 2008.

2.3.2. CONTRIBUTED CONFERENCE ORAL PRESENTATIONS

1. Chumbimuni-Torres, K. Y. Ion-Selective Optodes Based on Reversible Meta-Stable Photoacids. Oral Presentation at PITTCON 2015, New Orleans, LA. March 8-12, 2015.
2. Chumbimuni-Torres, K. Y., Calvo-Marzal, P., Wang, J.; Bakker, E. Electrochemical Matrix Elimination for Potentiometric Detection. PITTCON 2008, New Orleans, LA. March 1, 2008.
3. Chumbimuni-Torres, K. Y.; Dai, Z.; Rubinova, N.; Xiang, Y.; Pretsch, E.; Wang, J.; Bakker, E. Potentiometric Biosensing of Proteins with Ultrasensitive Ion-Selective Microelectrodes. PITTCON 2007, Chicago, IL, February 25, 2007.
4. Chumbimuni-Torres, K. Y.; Rubinova, N.; Bakker, E. Ion Selective Electrodes for bioanalysis. SIBEE. Aguas de Lindoia, SP, Brazil. 2007
5. Chumbimuni-Torres, K. Y.; Calvo-Marzal, P.; Kubota, L. T. Development of ion-selective electrodes of solid contact for cations with nanomolar detection limit. 13^a Encontro Nacional de Química Analítica / 1^o Congresso Ibero-Americano de Química Analítica, Niterói, RJ. Brazil. Book of abstracts, September 12, 2005.
6. Chumbimuni-Torres, K. Y.; Fernandes, J. C. B., Höehr, N. F.; Kubota, L. T. Development of ion-selective electrode for calcium and application in FIA for serum analysis. XII Simpósio Brasileiro de Eletroquímica e Eletroanalítica, Book of abstracts S19, Gramado, RS. Brazil, April 26, 2001.

2.3.3. CONTRIBUTED CONFERENCE POSTER PRESENTATIONS

1. Patel, P., Chumbimuni-Torres, K. Y. ‘Controlled Optical Sensing Films Based on a Meta-Stable Photoacid: Extension of Ion-Selective Optode Theory’. PITTCON 2015, March 8-12, New Orleans, LA.
2. Boone, J., Patel, P., Chumbimuni-Torres, K. Y. ‘Characterization of Meta-Stable Photoacids for the Use in Ion-Selective Optodes’. PITTCON 2015, March 8-12, New Orleans, LA.
3. Mills, D., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. ‘Four-Way Junction Electrochemical Sensor used for Detection of MicroRNA’. PITTCON 2015, March 8-12, New Orleans, LA.
4. Young, K., Johns, V., Chumbimuni-Torres, K. Y. ‘Rational Design of MMA-DMA Copolymer to Improve the Limit of Detection of Ion-Selective Electrodes’. PITTCON 2015, March 8-12, New Orleans, LA.
5. Mensah, S., Blanco, E., Mahan, A., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. ‘Improving Ion-Selective Electrodes for Applications in Multiplex Analysis. PITTCON 2015, March 8-12, New Orleans, LA.
6. Patel, P., Johns, V., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. ‘Tuning the response of ion-selective optodes by appropriate functionalization’. “Matrafured 2014”, June 15-20, Vinagery,

Hungary.

7. Tran, K., Borchardt, G., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. 'Universal Electrochemical Probe for Genotyping'. 225th ECS Meeting, May 11-16, 2014, Orlando FL.
8. Rich, M., Mensah, S., Chumbimuni-Torres, K. Y. Improving ion-selective electrodes for applications in multiplex analysis. 247th ACS National Meeting, March 16-20, 2014, Dallas, TX.
9. Patel, P., Johns, V., Hasset, Sh., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. Reversible Sensors Based on Meta-Stable Photoacid Polymer Activated by Visible Light. PITTCON 2014, March 2-6, Chicago, IL.
10. Mensah, S., Calvo-Marzal, P., Chumbimuni-Torres, K. Y. Nanomolar detection limits of Ca²⁺, Ag⁺, and K⁺ using paper-strip-ion-selective electrode. PITTCON 2014, March 2-6, Chicago, IL.
11. Chumbimuni-Torres, K. Y.; Coronado, R. E.; Mfuh, A. M.; Silva, M. F.; Negrete, G. R.; Bizios, R.; Garcia, C. D. (2011) Adsorption of Proteins onto PDMS-Like Nanofilms to Promote Mammalian Cell Adhesion. BMES 2011 Annual meeting, CT.
12. Coronado, R. E.; Chumbimuni-Torres, K. Y.; Mfuh, A. M.; Silva, M. F.; Negrete, G. R.; Bizios, R.; Garcia, C. D. (2011) Fabrication and Rational Surface Modification of PDMS-Like Nanofilms and its Effect on Adhesion of Endothelial Cells. 3rd IC4N in Crete Island, Greece, 2011.
13. Rubinova, N.; Chumbimuni-Torres, K. Y.; Shvarev, A.; Bakker, E. (2006) Solid-Contact Silver-Selective Microelectrodes for the Detection of Silver Ions at the Femtomole Level. PITTCON, Orlando, FL. March 12, 2006.
14. Chumbimuni-Torres, K. Y.; Rubinova, N.; Bakker, E. (2005) A Universal Recipe for Solid Contact Potentiometric Sensors for Trace Level Measurements. Mátrafüred in Hungary. September 13, 2005.
15. Chumbimuni-Torres, K. Y.; Calvo-Marzal, P.; Kubota, L. T. (2005) Development of ion-selective electrode for iodide with nanomolar detection limit. In: 13^o Encontro Nacional de Química Analítica / 1^o Congresso Ibero-Americano de Química Analítica, Niterói, RJ, Brazil. Livro de Resumos. September 12, 2005.
16. Chumbimuni-Torres, K. Y.; Bakker, E.; Kubota, L. T. (2005) Nanodetection limit of silver with solid contact ion selective electrode. In: 28^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 30, 2005.
17. Oliveira, B.; Chumbimuni-Torres, K. Y.; Kubota, L. T. (2004) Potentiometric determination of thiocyanate in urine. In: XII Congresso Interno de Iniciação Científica da UNICAMP, Campinas, SP, Brazil. Book of abstracts E366, September 22, 2004.
18. Chumbimuni-Torres, K. Y.; Calvo-Marzal, P.; Kubota, L. T. (2004) Simultaneous determination of calcium, potassium and chloride in juice samples using tubular ion-selective electrode couple to flow injection analysis. In: XIV Simpósio Brasileiro de Eletroquímica e Eletronalítica, Teresópolis, RJ, Brazil. Book of abstracts, August 08, 2004.
19. Oliveira, B.; Chumbimuni-Torres, K. Y.; Kubota, L. T. (2004) Construction and optimization of potentiometric sensors sensible to thiocyanate based of copper-phtalocianine-EVA. In XIV Simpósio Brasileiro de Eletroquímica e Eletronalítica, Teresópolis, RJ, Brazil. Book of abstracts, August 08, 2004.
20. Oliveira, B.; Chumbimuni-Torres, K. Y.; Kubota, L. T. (2004) Potentiometric Electrode based on copper phtalocianine sensible to thiocyanete. In: XXVI Congresso Latinoamericano de Química e 27^a Reunião Anual da Sociedade Brasileira de Química, Salvador, Brazil. Book of abstracts, May 30, 2004.
21. Chumbimuni-Torres, K. Y.; Kubota, L. T. (2003) Sequential determination of calcium and potassium

- in coconut water by a flow-injection method based on the use of ion-selective electrodes. In: 54th Annual Meeting of the International Society of Electrochemistry, São Pedro, SP, Brazil. Book of abstracts, August 31, 2003.
22. Riveiro, P. J. F.; Chumbimuni-Torres, K. Y.; Kubota, L. T. (2003) Developmetn of íon-selective electrode for ibuprofene. In: 12^o Encontro Nacional de Química Analítica, São Luís, Maranhão. Book of abstracts, October 14, 2003.
 23. Oliveira, B.; Chumbimuni-Torres, K. Y.; Kubota, L. T. (2003) Determination of Heparin in drugs by potentiometric sensor. In: XI Congresso Interno de Iniciação Científica da UNICAMP, Campinas, SP, Brazil. Book of abstracts, September 25, 2003.
 24. Chumbimuni-Torres, K. Y.; Kubota, L. T. (2003) Quantification of potassium in coconut water using flow injection analysis with ion-selective electrode. In: 26^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 26, 2003.
 25. Oliveira, B.; Chumbimuni-Torres, K. Y.; Kubota, T. L. (2003) Development of ion-selective electrode for Heparine. In: 26^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 26, 2003.
 26. Chumbimuni-Torres, K. Y.; Cerqueira, E. O.; Poppi, R. J.; Kubota, L. T. (2002) Potentiometric determination in FIA of iodide in presence of chloride, using neurais networks. In: 25^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 20, 2002.
 27. Chumbimuni-Torres, K. Y.; Cerqueira, E. O.; Poppi, R. J.; Kubota, L. T. (2001) Simultaneous determination of I⁻ and Cl⁻ using ion-selective electrode with multivariate calibration in FIA system. In: 11^o Encontro Nacional de Química Analítica, Campinas, SP, Brazil. Book of abstracts, September 18, 2001.
 28. Dias, V. V.; Cerqueira, E. O.; Kubota, L. T.; Fernandes, J. C. B.; Chumbimuni-Torres, K. Y.; Poppi, R. J. (2001) Optimization of potentiometric determination of ascorbic acid using an electrode of copolymeric matrix doped with copper-II. In: 24^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 28, 2001.
 29. Valter, V. D.; Chumbimuni-Torres, K. Y.; Fernandes, J. C. B.; Kubota, L. T. (2001) Potentiometric determination of ascorbic acid in juices samples using tubular electrode doped with copper-II. In: VIII Congresso Interno de Iniciação Científica da UNICAMP, Campinas, SP, Brazil. Book of abstracts, September 19, 2001.
 30. Chumbimuni-Torres, K. Y.; Garcia, C. A. B.; Oliveira N. G.; Fernandes, J. C. B.; Kubota, L. T. (2000) Development of ion-selective electrode for iodide determination by flow injection analysis. In: 23^a Reunião Anual da Sociedade Brasileira de Química, Poços de Caldas, SP, Brazil. Book of abstracts, May 23, 2000.

2.4. EXTRAMURAL GRANT SUPPORT AND PARTNERSHIPS

Current

- | | |
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| 2016-2018 | NIFA CofE: Multifunctional Surface/Sub-Surfae/Systemic Therapeutic (CoE: MS3T) Technology for HLB Management. USDA (US Department of Agriculture). Co-PI, 15%, (total award \$ 1.9 Million). |
| 2014-2016 | In-House Grant at University of Central Florida. ‘Development of light-based activable ion-sensing optodes to study the influence of ions in cancer cells’. PI, 100% \$7,500. |
| 2013-2017 | Marie Curie Actions-International Research Staff Exchange Scheme/IRSES-Europe |

Commission (FP7-PEOPLE-2013-IRSES). ‘Network for Sensor Knowledge Transfer’ Co-PI, \$0.00 (total award €279,300.00).

2014-2016 Innovation, Science and Technology grant (FINCyT). ‘Development of enzymatic and biomimetic electrochemical sensors with nanoporous polymer matrices for the determination of pesticide residues in environmental samples and agricultural products’ Co-PI, \$0.00 (total award \$160,000.00).

Complete

2013-2015 College of Science and Office of Research and Commercialization SEED Grant, ‘Portable and Novel Electrochemical Sensors for Genotyping Archeological Samples’. PI, 80% 19,135.00, (total award \$25,000.00).

2013 Acquisition of a Liquid Chromatography Mass Spectrometry (LC-MS) Instrument. In House Award. University of Central Florida. (Co-PI).

3. TEACHING

3.1. REGULARS COURSES

2016-Spring Analytical Chemistry CHM 3120, Chemistry Department, University of Central Florida, Orlando, FL

2015-Spring Analytical Chemistry CHM 3120, Chemistry Department, University of Central Florida, Orlando, FL

2014-Fall Chemistry Fundamentals IA CHM 2040, Chemistry Department, University of Central Florida, Orlando, FL

2014-Spring Analytical Chemistry CHM 3120, Chemistry Department, University of Central Florida, Orlando, FL

2013-Fall Chemistry Fundamentals 1B CHM 2041, Chemistry Department, University of Central Florida, Orlando, FL

2013 Spring Chemistry Fundamentals 1A CHM 2040, Chemistry Department, University of Central Florida, Orlando, FL

2012-Fall Chemistry Fundamentals IA CHM 2040, Chemistry Department, University of Central Florida, Orlando, FL

3.2. GRADUATE ADVISEES

3.2.1. PhD STUDENTS

2014-present Dawn Mills (Chemistry, UCF), Parth Patel (Chemistry, UCF), Renan Gongora (Chemistry, UCF).

2015-2016 Katherine Lozano Untiveros (Department of Chemistry and Biotechnology, University Federal of Alagos, Brazil). Exchange PhD Student.

2014 Jing Wu (School of Chemistry, Nanjing University, China). Exchange PhD Student.

3.3. UNDERGRADUATE ADVISEES

3.3.1. HONORS IN THE MAJOR STUDENTS

2012-2014 Shelly Hassett (Chemistry, UCF)

3.3.2. UNDERGRADUATE RESEARCH ADVISSES

Seven students co-authored 6 research published. And all of the have presented at conferences.

Current: Samantha Mensah (Chemistry, UCF), Stephanie Armas (Chemistry, UCF), Andrew Manhan (Chemistry, UCF), Jimmy Boone (Chemistry, UCF), Jeffrey Gaston (Biomedical Sciences, UCF), Courtney Hulce (Chemistry, UCF), Kamry Sammuel (Chemistry, UCF), Wynstona Lois (Chemistry, UCF).

Completed: Enrique Blanco (Chemistry, UCF), Alan Redee (Chemistry, UCF), Kathyne Young (Biochemistry, UCF), Gesca Borchardt (Biochemistry, UCF), Yessenia Gonzalez (Chemistry UCF), Maria Saavedra (Chemistry, UCF), Diego Castillo (Biomedical Sciences, UCF), Ariela Baran (Chemistry, UCF), Melissa Mena (Chemistry, UCF), Joseph Dejesus (Chemistry, UCF), Kristen Tran (Chemistry, UCF), Michelle Rich (Forensic Science, UCF), Tremain Torley (Biomedical Science, UCF).

4. SERVICE

4.1. PROFESSIONAL SERVICE

4.1.1. REFEREE FOR THE FOLLOWING PROFESSIONAL JOURNALS

Analytical Chemistry, Biosensors and Bioelectronics, ACS Sensors, Analytical Methods, Electroanalysis, Journal of Electronalytical Chemistry, Sensors and Actuators: B, International Journal of Analytical Chemistry, Journal of Environmental Analytical Chemistry, Journal of the Brazilian Chemical Society and Journal of the Serbian Chemical Society.

4.1.2. GRANT PROPOSAL REVIEWER AND OTHERS

Space Research Initiative Fall 2012

Latin-American Conference of Analytical Chemistry 2014

4.2. SERVICE TO UCF

2015 Participation in a Panel Discussion on Underrepresented Students in STEM for the Orlando SHARE FAIR 2016 at University of Central Florida.

2015 Served as a judge on Showcase of Undergraduate Research Excellence (SURE).

2014-2015 Participated in LEARN graduate mentoring, EXCEL and COMPASS undergraduate mentoring.

2014 Participated in sharing experiences and advice with new tenure track faculty in the College of Science on February 24.

2014 Served as a judge on Showcase of Undergraduate Research Excellence (SURE).

2013-2014 Participated in LEARN graduate mentoring, EXCEL and COMPASS undergraduate mentoring.

2013 Participated in the Summer 2013 STEM Research Academy by giving a research

presentation and laboratory tour.

- 2013 Participated as an assistant the ABET re-accreditation for the College of Engineering and Computer Science (CECS).
- 2012 Delivered a research presentation for EXCEL Center program to undergraduate students.

4.4. SERVICE TO UCF CHEMISTRY DEPARTMENT

- 2015-present Department Undergraduate Curriculum Committee.
- 2015 Biochemistry Department Search Committee.
- 2014 Lecture Search Committee.
- 2014 Forensic/Toxicology Department Search Committee.
- 2012-2014 Thesis committees, PhD Candidacy Committee and Undergraduate research reports evaluator.
- 2013-present Department Instrumentation Committee.
- 2013-present Department Analytical Chemistry Committee.
- 2013 Polymers/materials Science Department Search Committee.

4.5. SERVICE TO THE COMMUNITY

4.5.2. OUTREACH PROGRAMS

- 2016 Organized an Outreach Spring Program at Seminole County Public Libraries, PLAY TO BE SHERLOCK HOLMES, for teenagers to be presented in March 2016.
- 2015 Organized and present Outreach Program at Timber Creek High School. DNA detection using oxidation and reduction is FUN. November 2015.
- 2014-present High School Student supervision from Lake Highland Preparatory School (Radhika Desai and Ria Bhaskar).
- 2014 Organized and present Outreach summer program at Seminole County Public Libraries, FIZZ BOOM LAB. Summer 2014.

5. PROFESSIONAL MEMBERSHIP

- 2013-present Electrochemical Society, US
- 2006-present American Chemical Society, US
- 2000-2005 Brazilian Chemical Society, Brazil