

Rocío del A. Cardona- Couvertier, Ph.D.

Post-Doctoral Research Fellow for the Provost Office
University of Pennsylvania
Department Of Electric and System Engineering
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EDUCATION

- August 2011 Ph.D. in Chemistry
University of Puerto Rico, Río Piedras, Puerto Rico
“Physicochemical Studies of Ferrocenyl Chalcones and their
Interactions with Nafion and β -Cyclodextrins”
(Magna cum Laude)
- 1999-2004 B.Sc. in Chemistry, University of Puerto Rico, Río Piedras,
Puerto Rico (Magna cum Laude)

Workshops and Seminars

- August 2012 “Nanoscale Science and Engineering” ITEST-Nano 2012
Summer Profesional Development Workshop University of
Pennsylvania, Philadelphia, Pennsylvania (Speaker)
- January-May 2012 “Biomedical Postdoctoral Programs College and University
Teaching Seminar” PENN-PORT Program, University of
Pennsylvania, Philadelphia, Pennsylvania (Participant)
- December 2011 “Basic Wet Laboratory Techniques for Genomics Research”
Penn Genome Frontiers Institute, University of Pennsylvania,
Philadelphia, Pennsylvania (Participant)
- July 2009 “Get Funded: University of Kentucky/NIGMS Internet Grant
Writing Workshop” University of Puerto Rico, Río Piedras, Puerto
Rico (Participant)

- June 2009 “Analytical and Bioanalytical Assay Development for Biological Therapeutics” 2009 AAPS National Biotechnology Conference, Seattle, Washington (Participant)
- December 2008 “Fundamental of Electrochemistry and its Applications to Fuel cells, Batteries and Molecular Electronics” University of Puerto Rico, Río Piedras, Puerto Rico (Participant)
- July 2008 “ACS Summer School on Sustainability and Green Chemistry” Colorado School of Mines, Golden, Colorado (Participant)
- April 2008 “NMR Spectra Interpretation and Organic Spectroscopy: A Problem-Based Learning Approach” American Chemical Society, New Orleans, Louisiana (Participant)

RESEARCH EXPERIENCE & EMPLOYMENT

- 2011 to Present Post-Doctoral Research Fellow, Provost Office at University of Pennsylvania, Philadelphia, Pennsylvania
- September-December 2011 “Introduction to Batteries” School of Engineering and Applied Science University of Pennsylvania, Philadelphia, Pennsylvania (Teaching Assistant)
- 2005 -2011 Ph.D. Student/Research Assistant, University of Puerto Rico, Río Piedras, Puerto Rico
- 2004 - 2008 Alliance for Graduate Education and the Professoriate (AGEP), Río Piedras, Puerto Rico
- 2004 -2006 Pre-MARC Program, University of Puerto Rico, Río Piedras, Puerto Rico
- 2004-2005 Teaching Assistant in General Chemistry, University of Puerto Rico, Río Piedras, Puerto Rico
- 2002-2004 Puerto Rico Loius Stokes Alliance for Minority Participation (AMP), University of Puerto Rico, Río Piedras, Puerto Rico
- 2003 National Science Foundation – Research Experience for Undergraduates (NSF-REU) Summer Internship Program, University of Puerto Rico, Río Piedras, Puerto Rico

- 2002 National Science Foundation – Research Experience for Undergraduates (NSF-REU) Summer Internship Program, University of Notre Dame, South Bend, Indiana US
- 2001 National Science Foundation – Research Experience for Undergraduates (NSF-REU) Summer Internship Program, University of Puerto Rico, Río Piedras, Puerto Rico
- 2001-2002 Chemical Waste Disposal Office Assistant, University of Puerto Rico, Bayamón, Puerto Rico
- 2000 Undergraduate Research Student, University of Puerto Rico, Bayamón, Puerto Rico

PRESENTATIONS

- Poly-L-Lactic Acid Membranes Produced by Electrospinning for Applications in Electrical Double Layer Capacitors**
- May 2012 2nd International Conference on Electrospinning, Jeju, S. Korea (poster presentation)- Awarded Best Poster
- A Study of Supercapacitor Electrode Homogeneity using Scanning Microwave Microscopy**
- October 2011 2011 NBIC- Nano Days. University of Pennsylvania, Philadelphia, Pennsylvania. (poster presentation)
- Synthesis and Characterization of Poly Lactic Acid (PLA) and Multiwall Carbon Nano-Tubes (MWCNTs) Mixtures**
- August 2011 Society of Photographic Instrumentation Engineers (SPIE) Meeting. San Diego, California (oral presentation)
- Study of Inclusion Complexes Between β -Cyclodextrin and Ferrocenyl Chalcones Derivatives**
- November 2010 Partnership for Research and Education in Materials (PREM)-NSF 7th Site Visit. University of Puerto Rico; Humacao, Puerto Rico. (oral presentation)

Electrochemical Properties of Ferrocenyl Chalcones in Solution and Immobilized in Nafion

April 2010 216th Electrochemical Society Meeting Vancouver, Canada (oral presentation)

Electrochemical and Spectroscopical Characterization of Ferrocene Chalcones Derivatives

April 2010 4th RISE Area Conference University of Puerto Rico; Río Piedras, Puerto Rico. (poster presentation)

November 2009 Partnership for Research and Education in Materials (PREM)-NSF 6th Site Visit. University of Puerto Rico; Humacao, Puerto Rico. (poster presentation)

October 2009 Southeastern Regional Meeting of the American Chemical Society (SERMACS) San Juan, Puerto Rico (oral presentation)

Electrochemical and Spectroscopical Characterization of Ferrocene Derivatives: Cyclic Voltammetry, Diffusion Coefficients, Kinetics and UV- Visible

October 2009 216th Electrochemical Society Meeting Vienna, Austria (poster presentation)

Electrochemical and Spectroscopic Characterization of Ferrocene Chalcones Derivatives: Pyridines

November 2008 Annual Biomedical Research Conference for Undergraduate Students, Orlando, Florida (poster presentation)

Immobilization of Ferrocene Chalcones Derivatives in the Presence of MW-Carbon Nanotubes: Biosensor Construction

July 2008 28th Latin American Chemical Congress, San Juan, Puerto Rico (poster presentation)

SEGQuim: Enhancing the Academic Experience in Graduate Chemistry Schools

July 2008 28th Latin American Chemical Congress, San Juan, Puerto Rico (poster presentation)

April 2008 235th ACS National Meeting. New Orleans, LA, USA (poster presentation)

Mentoring in Graduate School

March 2008 3rd workshop for Coordinators and directors of Graduate Programs: Defining Excellence in Graduate Education, San Juan, Puerto Rico. (Invited panelist)

UV-Visible Characterization of 1-ferrocenyl-3-(p-nitrophenyl)prop-2-en-1-one: Toward Labels Construction

March 2008 4th RISE Area Conference: Studies in Structural Biology, Understanding Nature's own Nanotechnology. University of Puerto Rico; Río Piedras, Puerto Rico. (poster presentation)

March 2008 Puerto Rico Junior Technical Meeting-PR-LSAMP PRISM 2008: University of Puerto Rico; Arecibo, Puerto Rico. (poster presentation)

Ferrocene Chalcone Derivatives as Labels for DNA Electrochemical Sensors

July 2008 6th Annual ACS Summer School on Sustainability and Green Chemistry, Golden, Colorado

November 2007 Partnership for Research and Education in Materials (PREM)-NSF 4th Site Visit. University of Puerto Rico; Humacao, Puerto Rico. (poster presentation)

Ferrocene Derivatives and their Application in Biotechnology

November 2007 XXXI ACS Senior Technical Meeting. Mayaguez Resort and Casino; Mayagüez, Puerto Rico. (Poster Presentation)

Characterization of Novel Ferrocene Derivatives

October 2007 AAAS Interamerican University, Bayamón, Puerto Rico (poster presentation)

July 2007 AGEP 5th Poster Presentation for Graduate Research. University of Puerto Rico; Río Piedras, Puerto Rico (poster presentation)

April 2007 International Symposium on Advanced Material: Building Functional Systems via Self-assembly. Palmas del Mar; Humacao, Puerto Rico. (poster presentation)

- April 2007 MGE- WAESO. Arizona State University; Arizona, USA (poster presentation)
- Electrochemical and Spectrophotometric Characterization of Novel Ferrocene Derivatives**
- March 2007 233rd ACS National Meeting. Chicago; Illinois, USA (poster presentation)
- November 2006 Partnership for Research and Education in Materials (PREM)-NSF 3rd Site Visit. University of Puerto Rico; Humacao, Puerto Rico. (poster presentation)
- November 2006 13th Chemical and Engineering Symposium XXX Senior Technical Meeting of the ACS. Embassy Suites; Dorado, Puerto Rico (poster presentation)
- July 2006 AGEP 4th Poster Presentation for Graduate Research. University of Puerto Rico; Río Piedras, Puerto Rico (poster presentation)
- Development of DNA Sensors Using Peptide Nucleic Acids (PNA)**
- November 2005 Partnership for Research and Education in Materials (PREM)-NSF 2nd Site Visit, University of Puerto Rico, Humacao (poster presentation)
- July 2005 AGEP 3rd Poster Presentation for Graduate Research, University of Puerto Rico, Río Piedras (poster presentation)
- March 2004 24th Puerto Rico Interdisciplinary Scientific Meeting, University of Puerto Rico, Humacao (oral presentation)
- Poly (trans-4[2-(1-Ferrocenyl) vinyl]-1-methyl-pyridinium iodide and Ferrocene Derivatives as Electroactive Labels for Nucleic Acid Sensors**
- March 2004 227th ACS National Meeting, Anaheim, California (poster presentation)
- July 2003 VI Undergraduate Research Symposium, University of Puerto Rico, Río Piedras (oral and poster presentation)

Study of Antibody and Antigen Binding to Gold Nanowire Array (GNWA)

July 2002 Undergraduate Research Symposium, University of Notre Dame, Indiana, US (oral presentation)

Interpolyelectrolyte Interactions of DNA and Electroactive Polymers

April 2002 223rd ACS National Meeting, Orlando, Florida, US (poster presentation)

Study of the Interaction of Polycations with Double Stranded LamB1 DNA Sequence

July 2001 IV Undergraduate Research Symposium, University of Puerto Rico, Río Piedras (oral and poster presentation)

PUBLICATIONS

- Kumar, S., **Cardona, R.A.**, Berríos-Soto, M., and. Santiago-Avilés, J. J. “Synthesis and characterization of poly lactic acid and multiwall carbon nano-tubes mixtures”, SPIE Conference Proceedings.
- **Cardona, R.A.**; Hernández, K.; Pedró, L.E., Otaño, M.R.; Montes, I. and Guadalupe, A.R. “Electrochemical and Spectroscopical Characterization of Ferrocenyl Chalcones”, *J. Electrochem. Soc.* **2010**. 157(8) F104-F110.
- Basu, M.; Seggerson, S.; Henshaw, J.; Jiang, J.; **Cardona, R.A.**; Lefave, C.; Boyle, PJ; Miller, A.; Pugia, M. and Basu, S. “Nano- biosensor development for bacterial detection during human kidney infection: Use of glycoconjugate specific antibody-bound gold nanowire arrays (GNWA)”, *Glycocon. J.*, **2004** 21, 487-496.

PROFESSIONAL ORGANIZATIONS

- 2007-present: ECS Member (Electrochemical Society)
- 2007-present: SegQUIM (Sociedad de Estudiantes Graduados de Química-Chemistry Graduate Students Society at University of Puerto Rico, Río Piedras)
- 2006- present: American Chemical Society Member

HONOR AND AWARDS

- 2011: University of Pennsylvania Provost Office Academic Diversity Postdoctoral Fellowship

- 2008-2011: NIH-RISE Scholarship for Graduate Studies
- 2008: Scholarship to participate in 6th Annual ACS Summer School on Sustainability and Green Chemistry
- 2008: “Mujer Distinguida de Dorado” – “Distinguished Woman of Dorado” an award to recognize leadership in the community
- 2007: Lilly Scholarship for Graduate Studies
- 2007: Participant of “The Institute on Teaching and Mentoring” sponsored by The Compact for Faculty Diversity Institute
- 2007: RISE Scholarship for Graduate Studies
- 2006: Participant of “The Institute on Teaching and Mentoring” sponsored by The Compact for Faculty Diversity Institute
- 2006: Vega COOP Scholarship for Graduate Studies
- 2006: RISE Scholarship for Graduate Studies
- 2005: Vega COOP Scholarship for Graduate Studies

LANGUAGES

- Spanish
- English

EXTRACURRICULAR ACTIVITIES

2007-08: Vice-President of SEGQuim

- Organizing Recruitment Activities
- Visiting Schools
- Organization of Public Interest Activities together with the local ACS

FIELDS OF INTEREST

- Bio-analytical Chemistry, Electrochemistry, Education in Chemistry

REFERENCES

Dr. Ana R. Guadalupe

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 Department of Chemistry
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