JOAQUÍN RODRÍGUEZ LÓPEZ

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Professional Appointments (UIUC: University of Illinois at Urbana-Champaign)

- Associate Professor, **2019-present**, Materials Research Laboratory, UIUC
- Associate Professor, **2018-present**, Department of Chemistry, UIUC
- Faculty Affiliate, **2016-present**, Beckman Institute for Advanced Science and Technology, UIUC
- Assistant Professor, **2012-2018**, Department of Chemistry, UIUC
- Instructor/Research assistant, **January-May 2006**, Department of Chemistry, Tecnológico de Monterrey, Campus Monterrey, Mexico

Education

- ***Post-Doctoral:*** Cornell University, Ithaca, NY.
  Advisor: Prof. Hector D. Abruña, (**2010-2012**).
  Project: *Characterization and Applications of Single-Layer Graphene Electrodes.*
- ***Graduate:*** The University of Texas at Austin, Austin, TX.
  Doctor of Philosophy, Analytical Chemistry, (**2006-2010**). Advisor: Prof. Allen J. Bard.
  Thesis: *The use of Scanning Electrochemical Microscopy for the Detection and Quantification of Adsorbed Intermediates at Electrodes.*
- ***Undergraduate:*** Tecnológico de Monterrey (ITESM), Campus Monterrey, Mexico.
  Bachelor in Science, Chemistry, with honors, (**2001-2005**). Advisor: Prof. Marcelo Videa.
  Thesis: *Use of the Ion Transfer Across the Interface Between Two Immiscible Liquids for the Detection of Quaternary Ammonium Ions.*
  Bicultural Baccalaureate, with honors, (**1998-2001**). Tecnológico de Monterrey (ITESM), Campus Eugenio Garza Sada, Monterrey, Mexico.

Honors, Recognitions, and Outside Achievements

SINCE STARTING AT THE UNIVERSITY OF ILLINOIS

2021 **Zhaowu Tian Prize for Energy Electrochemistry**, International Society of Electrochemistry
2021 **J. Andrew and Susan S. Langan Professorial Scholar**, College of LAS, UIUC
2020 **Arthur F. Findeis Award for Achievements by a Young Analytical Scientist**, American Chemical Society Division of Analytical Chemistry.
2019 **Discovery Award**, Department of Chemistry at the University of Illinois.
2018 **Science News SN10: Scientists to Watch.**
2017 **Scialog Fellow**, by the Research Corporation for Scialog: Advanced Energy Storage.
2017 **Royce W. Murray Young Investigator Award**, by the Society for Electroanalytical Chemistry.

2016 **Sloan Research Fellowship**, by the Alfred P. Sloan Foundation.
2016 **ECS-Toyota Young Investigator Award**, by the Electrochemical Society and the Toyota Research Institute of America.
2016 **Distinguished Service Award**, by the East-Central Illinois ACS Section.
2016 **List of Teachers Ranked Excellent by their Students** (Chem 524-Electrochemistry), by the Center for Innovation in Teaching and Learning at the University of Illinois.
2016 **Carl Storm Underrepresented Minority Fellowship**, by the Gordon Research Conference to attend the Electrochemistry theme conference in Ventura CA.
2015 **Starter Grant**, by the Society for Analytical Chemists of Pittsburgh (SACP).
2015 **ISE Young Investigator Travel Award**, by the International Society of Electrochemistry for attending the 66th meeting of the ISE in Taipei, Taiwan.
2015 **ECS Travel Award**, by the Electrochemical Society for attending the 228th ECS Meeting in Phoenix, AZ.
2014 **Young Investigator Travel Award**, by the Midwestern Universities Analytical Chemistry Conference (MUACC).
2014 **Director's Fund Award**, by the Joint Center for Energy Storage Research (JCESR).

PRIOR TO JOINING THE UNIVERSITY OF ILLINOIS

2012 **Young Investigator Award**, by the Energy Materials Center at Cornell.
2010 **Livingston Fellowship**, by The William S. Livingston Endowment Fund at the University of Texas at Austin.
2010 **ACS Division of Analytical Chemistry Graduate Fellowship**, sponsored by Eli Lilly.
2009 **Dean's Prestigious Graduate Fellowship Award**, by the Office of Graduate Studies at the University of Texas at Austin.
2008 **Swagelok Award**, Nano Night '08 Poster Session, The University of Texas at Austin.
2006 **First Place for Best Bachelor Thesis in Electrochemistry**, Sociedad Mexicana de Electroquímica (SMEQ).
2005 **Testimony of Outstanding Performance**, National Exam of Chemistry (CENEVAL, México).
2005 **Honorific Excellence Mention and first in Chemistry class**, Tecnológico de Monterrey.
2004 **Xorge A. Dominguez Scholarship**, Tecnológico de Monterrey.
2001 **Bicultural Baccalaureate, Honorific Excellence Mention**, Tecnológico de Monterrey.

LIST OF AWARDS RECEIVED BY MEMBERS OF THE RODRIGUEZ-LOPEZ GROUP

[Link]

Invited Lectures and Invited Conference Presentations

UPCOMING INVITED PRESENTATIONS

104 Gordon Research Conference on Polymers. To be rescheduled in 2023.
103 Gordon Research Conference on Chemical Imaging. To be rescheduled in 2023.
102 University of Washington Seattle, Department of Chemistry Seminar. To be rescheduled.

INVITED PRESENTATIONS DELIVERED WHILE AT THE UNIVERSITY OF ILLINOIS

101 Electroquímica Interactiva: Maneras Diversas de "Ver" un Electrodo. **Breaking Barriers**

Through Chemistry 2021. Online, August 4, 2021.

100 Reaction Rate Mapping at Electrodes for Redox Flow Batteries – Impacts of Adsorption and Electrode Structure. **"Progress in Understanding Charge Transfer at Electrochemical Interfaces in Batteries" session at the Spring 2021 MRS Meeting.** Online, April 23, 2021.

99 Mapping Alkali Ion Fluxes at Battery Interfaces: Application to Understanding the Formation of the Solid-Electrolyte Interphase. **"In Situ/Operando Characterization of Solid-Liquid Interfaces for Sustainable Energy, Water and Environment" session at the Spring 2021 MRS Meeting**. Online, April 22, 2021.

98 Ions in the Spotlight: Extending the Electrochemical Imaging Toolset for Detecting Ion Fluxes During Ion Intercalation and Solid-Electrolyte Interphase Formation. **Pittcon 2021**, **"Advances in Electrochemical and Ion Current Imaging" New Orleans LA/Online**, March 8, 2021.

97 Gearing Up Electrochemical Microscopy to Address Challenges in Energy Storage. **Washington University in St. Louis,** Department of Energy, Environment, and Chemical Engineering**.** Online, December 11, 2020.

96 Gearing Up Electrochemical Microscopy to Address Challenges in Energy Storage. **University of Massachusetts, Dartmouth.** Online, December 2, 2020.

95 Elucidating the degradation of redoxmer electrolytes at the carbon-electrolyte interface using spatially-resolved electrochemistry. **Live keynote for "Flow-Based Open Electrochemical Systems" 2020 MRS Fall Meeting.** Online, November 28, 2020.

94 Gearing Up Electrochemical Microscopy to Address Challenges in Energy Storage. **Diversity in Analytical Chemistry Virtual Seminar.** Online, November 18, 2020.

93 Gearing Up Electrochemical Microscopy to Address Challenges in Energy Storage (Presentation in Spanish). **Magisterial Lecture, XXXV Congreso de la Sociedad Mexicana de Electroquímica (SMEQ)**, Ciudad Juárez, Mexico. Online, October 16, 2020.

92 Gearing Up Electrochemical Microscopy to Address Challenges in Energy Storage**. 260th ACS National Meeting in San Francisco**, "ANYL Division Awards Session", presented with Arthur F. Findeis award. Online, August 18, 2020.

91 Probing Interfacial Kinetics on Atomically-Thin Electrodes Using SECM coupled to Laser Excitation and Raman Spectroelectrochemistry. **260th ACS National Meeting in San Francisco**, "Spectroscopy for Understanding Catalysis." Online, August 17, 2020.

90 Electrodos Interfaz. **Electrochemical Society Student Chapter Colloquia – Monterrey Chapter**. Online, May 11, 2020.

89 Electrochemistry at Few-Atom Interfaces: New Opportunities for Electrochemical Imaging. **Pittcon 2020, "Chemical Analysis of Energy Materials at the Nanoscale", Chicago IL**, March 1, 2020.

88 SECM as a Versatile Toolbox for Elucidating Manifold Challenges at the Electrochemical Interface**, Student Selected Seminar, University of Minnesota Twin Cities**, **Minneapolis MN**, February 18, 2020.

87 Scanning Electrochemical Microscopy of Battery Interfaces: In-Situ Imaging of Ionic Fluxes and Single-Site Reactivity on Heterogeneous Carbon Electrodes. **University of Rhode Island**, **Kingston RI**, November 25, 2019.

86 SECM as a Versatile Toolbox for Elucidating Manifold Challenges at the Electrochemical Interface**. California Institute of Technology, Inorganic-Electrochemistry Seminar, Pasadena CA**, November 18, 2019.

85 Elucidating Energy Storage through Versatile Electrochemistry, **University of Ulm**, **Institute of Analytical and Bioanalytical Chemistry, Ulm, Germany**, October 3, 2019.

84 Raman-SECM: A powerful tool for spatially and time-resolved spectroelectrochemistry at thin interfaces. **10th Workshop on Scanning Electrochemical Microscopy**, **Fontainebleu, France**, October 1, 2019.

83 SECM as a Versatile Toolbox for Elucidating Manifold Challenges at the Electrochemical Interface. **Iowa State University, Department of Chemistry, Ames IA**, September 20, 2019.

82 SECM as a Versatile Toolbox for Elucidating Manifold Challenges at the Electrochemical Interface. **Colorado State University, Department of Chemistry, Fort Collins CO**, September 18, 2019.

81 New Approaches for Peroxide (Electro)Catalysis. **Potter's Lodge Meeting, Blue Mountain Lake NY**, September 5, 2019.

80 New Approaches for Peroxide (Electro)Catalysis. **Telluride Science Research Center Conference: Platinum-Group Metal-Free Electrocatalysis, Telluride CO**, June 28, 2019.

79 The Great Potential of Small Electrodes – And What they Can Do for You. **Next Generation Electrochemistry (NGenE) Workshop at the University of Illinois at Chicago, Chicago IL**, June 6, 2019.

78 Elucidating Energy Storage through Versatile Electrochemistry. **Columbia University**, **New York City NY**, May 19, 2019.

77 Ultrathin Few-Layer Graphene Electrodes as Versatile Platforms for Testing the Limits of Ion Intercalation. **2019 MRS Spring Meeting,** ***ES03 Session: Electrochemical Energy Materials Under Extreme Conditions,*** **Phoenix AZ**, April 24, 2019.

76 Single-Particle and Spectroelectrochemical Analysis of Charge Transfer Mechanisms in Redox-Active Polymers for Flow Batteries. **2019 MRS Spring Meeting,** ***ES01 Session: Organic Materials in Electrochemical Energy Storage,*** **Phoenix AZ**, April 24, 2019.

75 Scanning Electrochemical Microscopy Imaging of Reactivity Gradients on Electrochemically-Transparent Graphene Electrodes. **24th Topical Meeting of the International Society of Electrochemistry,** ***Assembly at the Meso-, Nano-, and Molecular Scale,*** **Mérida, Mexico**, April 19, 2019.

74 Scanning Electrochemical Microscopy of Battery Interfaces: In-Situ Imaging of Ionic Fluxes and Single-Site Reactivity at Heterogeneous Carbon Electrodes. *A New Generation for Ion Battery Analytics*. **Pittcon 2019, Philadelphia PA**, March 18, 2019.

73 Electrochemical Versatility of Redox-Active Polymers: Implications for Uses Beyond Energy Storage. *Materials & Techniques to Advance Redox Flow Batteries session,* **ACS Spring 2019 National Meeting and Exposition**, **Orlando FL**, April 1, 2019.

72 Elucidating Energy Storage through Versatile Electrochemistry. **City University of New York, Queens NY**, March 25, 2019.

71 Elucidating Energy Storage through Versatile Electrochemistry. **University of Western Ontario, London ON, Canada**, March 19, 2019.

70 Elucidating Energy Storage through Versatile Electrochemistry. **The University of Texas at Austin, Austin TX**, February 19, 2019.

69 Elucidating Energy Storage through Versatile Electrochemistry. **University of California Los Angeles, Los Angeles CA**, February 8, 2019.

68 The Development of Size-Exclusion Polymer Non-Aqueous Flow Batteries, **DOE Workshop on Non-Aqueous Flow Batteries, Santa Fe NM**, January 30, 2019.

67 Elucidating Energy Storage through Versatile Electrochemistry. **University of Chicago, Institute for Molecular Engineering**, **Chicago IL**, December 11, 2018.

66 Scanning Electrochemical Microscopy of Battery Interfaces: Versatile Measurement Using Novel Ionic Probes and Multimodal Raman Interrogation. **2018 Materials Research Society Fall Meeting**, **Boston MA**, November 27, 2018.

65 Nano-electrochemical Interrogation of Redox-Active Polymer Electrolytes for Flow Batteries: from New Dynamics to Single Particles. **2018 Materials Research Society Fall Meeting**, **Boston MA**, November 26, 2018.

64 SECM meets Raman: Simultaneous and Co-localized Investigation of Graphene Interfaces for Energy Applications. **SciX 2018 –** ***Light and Electrochemistry in (Ordered) Nanostructures Session*****.** Atlanta GA, October 23, 2018.

63 The Impact of Polyelectrolyte Dynamics on The Electrochemical Reactivity of Soluble Redox-Active Polymers. **AiMES 2018 - K02 symposium:** ***Electron Transfer Activation of Organic and Bioorganic Systems: From Unraveling Electrode Mechanisms to Directed Synthesis of High Valued Products.*** Cancun, Mexico, October 1, 2018.

62 Titrating Reactive Intermediates at Water-Splitting Photoanodes: Elucidating Spatial, Temporal and Chemical Heterogeneities. **XIX Brazilian Meeting on Inorganic Chemistry**, **Fortaleza, Brazil,** September 26, 2018.

61 Polyelectrolyte Dynamics of Redox-Active Polymers: Implications for Energy Storage. **3rd International Workshop on Redox Films for Energy Conversion (Redox Shields), Marseille, France,** September 10, 2018.

60 Redox-Active Polymer Electrolytes: New Solutions for Flow Batteries. **International Conference on Energy Conversion & Storage (ORCAS) 2018**, **San Juan Island WA,** September 7, 2018.

59 Electrocatalysis on Electronically Transparent yet Physically Impermeable Graphene Electrodes. **256th Meeting of the American Chemical Society –** ***Structure and Function of 2D Materials Symposium,*** **Boston MA**, August 21, 2018.

58 SECM meets Raman: In Situ and Simultaneous Probing of Reactivity and Electronic Structure on Single Reacting Sites. **256th Meeting of the American Chemical Society –** ***Light-Nanomaterial Interactions for Ultrasensitive Electrochemical Sensing and Imaging Symposium,*** **Boston MA**, August 21, 2018.

57 Impact of Backbone Structure and Particle Morphology on the Electrochemical Performance of Soluble Redox-Active Polymers. **256th Meeting of the American Chemical Society – *Polymers for Function in Electrochemical Energy Storage Devices Symposium*, Boston MA**, August 20, 2018.

56 Ion Intercalation in Ultra-Thin Graphene Electrodes: When Bulk and Interface Converge. **Telluride Science Research Center Conference: Interfacial Chemistry and Charge Transfer for Energy Storage, Telluride CO**, July 25, 2018.

55 Redox-Active Polymer Electrolytes: A New Solution for Energy Storage. **Telluride Science Research Center Conference: Molecular Chemistry on Electrochemical Energy Storage, Telluride CO**, July 10, 2018.

54 The Great Power of Small Electrodes – And What they Can Do for Your Research. **Next Generation Electrochemistry (NGenE) Workshop at the University of Illinois at Chicago, Chicago IL**, June 7, 2018.

53 Impact of Polyelectrolyte Dynamics on the Reactivity of Novel Redox-Active Polymers for a New Type of Size-Exclusion Battery. **American Physical Society, 2018 Meeting**, **Los Angeles CA**, March 5-9, 2018.

52 Elucidating Charge Storage on Nanoscale Assemblies Using Versatile Spectroelectrochemical Probes. **Pittcon 2018, Orlando FL**, February 27, 2018.

51 Titrating Reactive Intermediates at Operating Water-Splitting Photoanodes: Elucidating Spatial, Temporal, and Chemical Heterogeneities. **University of Chicago, Institute for Molecular Engineering**, **Chicago IL**, February 15, 2018.

50 Elucidating Energy Storage through Versatile Electrochemistry. **Wayne State University, Detroit MI**, October 24, 2017.

49 Elucidating Energy Storage through Versatile Electrochemistry. **Ohio State University, Columbus OH**, October 17, 2017.

48 New Strategies for Low-Cost Energy Storage for the Grid: A Size-Exclusion Approach Using Polymer Colloids. **SciX 2017**, **Reno NV**, October 10, 2017.

47 Enhancing Electron Transfer Rates on Ultra-Thin Graphene Electrodes Using a Sub-Surface Patterning Approach. **232nd ECS Meeting**, **National Harbor MD**, October 2, 2017.

46 Elucidating Energy Storage through Versatile Electrochemistry. **University of Michigan, Ann Arbor MI**, September 28, 2017.

45 Elucidating Energy Storage through Versatile Electrochemistry. **Toyota Research Institute of North America, Ann Arbor MI**, September 13, 2017.

44 Exploring the Reactive Modulation of Soluble Redox-Active Polymers via Versatile Electrochemical Interrogation. *Keynote Presentation* - **68th Annual Meeting of the International Society of Electrochemistry**, **Providence RI**, August 29, 2017.

43 Elucidating the Reactivity of Novel Redox-Active Particles via Versatile Electrochemistry. **XXVI International Materials Research Congress, Cancún, México,** August 24, 2017.

42 SECM Imaging and Interrogation of Redox and Ionic Processes on Battery Materials. **9th Workshop on Scanning Electrochemical Microscopy and Related Techniques**, **Warsaw, Poland**, August 16, 2017.

41 Versatile Macromolecular Design for Emerging Size-Selective Non-Aqueous Redox Flow Batteries. **Department of Energy, Basic Energy Sciences Summit.** *Selected speaker representing JCESR*. **Washington DC**, July 25, 2017.

40 Challenges in Reactivity at Electrochemical Interfaces. **Next Generation Electrochemistry (NGenE) Workshop at the University of Illinois at Chicago, Chicago IL**, June 29, 2017.

39 Versatile Analysis of Redox and Ionic Reactivity at Battery Materials and Interfaces. **Science and Technology Facilities Council (STFC) Annual Meeting**, **Abbingdon Oxford, UK,** May 31, 2017.

38 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry**. Selected Speaker for the Montreal Electrochemical Society Student Chapter Annual Symposium. McGill University, Montreal, Canada**, May 26, 2017.

37 Imaging and Quantifying the Reactivity of Chemical and Structural Perturbations on Operating Water Oxidation Photoanodes. **253rd American Chemical Society National Meeting** "Light Driven Chemistry" Symposium, **San Francisco CA**, April 5, 2017.

36 Plenary Lecture, and Elucidating Energy Storage in Nanostructures Using Versatile Electrochemistry. **Eureka College – Jackson Day festivities**, **Eureka IL**, March 30, 2017.

35 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **Indiana University, Bloomington IN**, March 28, 2017.

34 The Impact of Short-Range Interactions on the Reactivity of Ultra-Thin Graphene Electrodes. **Pittcon 2017, Chicago IL**, March 9, 2017.

33 Versatile Electrochemical Probes for Emerging Concepts in Energy Materials. **Pittcon 2017 – SEAC Awards Session, Chicago IL**, March 6, 2017.

32 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **University of Pittsburgh, Pittsburgh PA**, February 16, 2017.

31 Digging Deeper into Ionic Reactivity: New Tools and Emerging Trends in Energy Storage. **Center for Electrochemistry Workshop at the University of Texas at Austin**, **Austin TX**, February 11, 2017.

30 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **University of Wisconsin, Madison WI**, February 9, 2017.

29 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **St. Louis University, St. Louis MO**, January 27, 2017.

28 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **Southern Illinois University Edwardsville, Edwardsville IL**, January 26, 2017.

27 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **Southern Illinois University Carbondale, Carbondale IL**, January 20, 2017.

26 The Impact of Pendant Interactions on the Electrochemical Response of Redox Active Polymers for Size-Exclusion Flow Batteries. **Materials Research Society Fall Meeting**, **Boston MA**, November 28, 2016.

25 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **University of Illinois at Chicago, Chicago IL**, November 17, 2016.

24 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **Purdue University, West Lafayette IN**, November 8, 2016.

23 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **University of Alabama, Tuscaloosa AL**, November 3, 2016.

22 Elucidating Energy Storage in Soft Nanostructures Using Versatile Electrochemistry. **University of Maryland**, **Baltimore MD**, October 21, 2016.

21 Elucidating Soft Nanostructures for Energy Storage Using Versatile Electrochemistry. **University of North Carolina, Chapel Hill NC,** October 3, 2016.

20 Versatile Electrochemical Approaches for Redox Active Polymer Flow Batteries. **Beyond Lithium Ion IX conference, Pacific Northwest National Laboratory**, May 26, 2016.

19 Elucidating Soft Nanostructures for Energy Storage Using Versatile Electrochemistry. **University of Utah, Salt Lake City UT**, May 23, 2016.

18 Elucidating Soft Nanostructures for Energy Storage Using Versatile Electrochemistry. **University of Iowa**, **Iowa City IA**, April 14, 2016.

17 Electrochemical Imaging of Ionic Reactivity at Operating Ion Battery Electrodes. *SEAC-Young Investigator Session*, **Pittcon 2016, Atlanta GA**, March 7, 2016.

16 Electrochemical Interrogation of Redox Active Polymer Particles for Energy Storage. **Gordon Research Conference on Electrochemistry, Ventura CA**, January 13, 2016. *Carl Storm Underrepresented Minority Travel Award.*

15 Elucidating Soft Nanostructures for Energy Storage Using Versatile Electrochemistry. **University of Birmingham, Birmingham, UK**, November 27, 2015.

14 Redox Active Polymers: A Size Selective Solution for Non-Aqueous Redox Flow Batteries. **United Kingdom Energy Storage Conference (UKES 2015), Birmingham, UK**, November 25, 2015.

13 Elucidating Soft Nanostructures for Energy Storage Using Versatile Electrochemistry. **LBNL- The Molecular Foundry Seminar Series**, **Berkeley CA**, November 10, 2015.

12 *Keynote Lecture* - Redox Active Polymers: A Size Selective Solution for Redox Flow Batteries. **228th ECS Meeting**, "Electroactive and Redox Active Polymers", **Phoenix AZ**, October 14, 2015. *ECS Travel Award.*

11 SECM Imaging of Ionic Reactivity at Operating Battery Anodes. **8th Workshop on Scanning Electrochemical Microscopy**, **Xiamen, China**, October 13, 2015.

10 The Impact of Short Range Electronic Interactions on the Electrochemical Activity of Single- and Few- Layer Graphene. **66th Annual Meeting of the ISE**, **Taipei**, October 8, 2015. *ISE travel award.*

9 Redox Active Polymers: A Size Selective Solution for Non-Aqueous Redox Flow Batteries. **PSE Open Mic Session, Argonne National Laboratory**, **Lemont IL**, September 24, 2015.

8 Redox Active Polymers as Storage Materials. **Potters Lodge Meeting in Electrochemistry**, **Blue Mountain Lake NY**, September 12, 2015.

7 The Use of Redox Nano-Titrations for Elucidating Reactive Heterogeneity on Electrodes for Energy Conversion and Charge Storage. Bard Award Session at the **227th Electrochemical Society Meeting**, **Chicago IL**, May 25, 2015. Honoring award winner Prof. Henry White.

6 A Size-Selective Strategy for Redox Flow Batteries. **2nd Annual Joint Center for Energy Research Affiliate Workshop, Hyde Park, Chicago IL**, May 5, 2015.

5 The Great Power of Tiny Electrodes: Enabling the Mechanistic Investigation of Charge Transfer on Materials for Chemical Conversion and Energy Storage. **Chemical Sciences and Engineering (CSE) Division Colloquium, Argonne National Laboratory**, **Lemont IL**, October 14, 2014.

4 Elucidating the Reactive Heterogeneity of Water-Splitting Photoelectrocatalysts at the Nano-scale through Combined *In Situ* Surface-Sensitive Approaches. **65th Annual meeting of the International Society of Electrochemistry**, **Lausanne, Switzerland**, September 3, 2014.

3 Spatially-Resolved Electrochemical Methods for Energy Conversion and Storage: Surface Dynamics on Graphene, Photoelectrocatalysts and Li-ion Battery Interfaces. **Universita degli Studi di Milano, Dipartimento di Chimica**, **Milano, Italy**, May 29, 2014.

2 Spatially-Resolved Electrochemical Methods for the Investigation of Electronic and Ionic Reactivity at Interfaces for Energy Conversion and Storage. **Dow Chemical Company**, **Midland MI**, April 7, 2014.

1 *In Situ* Structural Methods for the Investigation of Reactivity in Materials for Photoassisted Electrochemistry. **Pittcon 2013, Philadelphia PA**, March 20, 2013.

INVITED PRESENTATIONS DELIVERED PRIOR TO JOINING UIUC

12 A Versatile Toolbox for the Interrogation and Imaging of Electrodes. *Invited as a postdoctoral researcher*. Delivered between October 2011 and February 2012 at the following institutions:

Boston College	**Tufts University**
University of Illinois at Urbana-Champaign	**Oregon State University**
University of Wisconsin at Madison	**Cornell University**
Rutgers University	**University of Minnesota Twin Cities**
University of Utah	**University of Texas at Austin**.

2 Applications of SECM to the Characterization of Electrocatalysts. *Plenary Lecture*, presented at the **XXVI Symposium of the Mexican Electrochemical Society**, **Mexico City**, June 1, 2011. *Invited as postdoctoral researcher*.

1 The Use of Scanning Electrochemical Microscopy for the Characterization and Discovery of Electrocatalysts. **1st Student Potter's Lodge Meeting**, **Blue Mountain Lake NY**, September 10, 2010. *Invited as graduate student.*

CONTRIBUTED TALKS AS PRESENTING AUTHOR

21 Rodríguez-López, J. Jumpstarting students into electrochemical energy research. **Midwestern Universities Analytical Chemistry Conference (MUACC) 2019, IUPUI, Indianapolis IN**, November 8, 2019.

20 Rodríguez-López, J. Interrogating Single Redox-Active Polymer Particles Quantitatively: SECM Meets Raman Spectroscopy. **Midwestern Universities Analytical Chemistry Conference (MUACC) 2017, Athens OH**, October 19-21, 2017.

19 Rodríguez-López, J. Elucidating the Reactivity and Solution Dynamics of Redox Active Polymers and Colloids. "Basic Research in Colloids, Surfactants & Nanomaterials" Symposium, **253rd American Chemical Society National Meeting**, **San Francisco CA,** April 2-6, 2017.

18 Versatile In Situ Chemical Imaging of Alkali Ion Reactivity at Battery Interfaces. **253rd American Chemical Society National Meeting** "Synthesis & Characterization of Materials for Energy" Symposium, **San Francisco CA**, April 3th, 2017.

17 Rodríguez-López, J. Versatile *In Situ* Chemical Imaging of Alkali Ion Reactivity at the Battery Electrode/Electrolyte Interface. **Materials Research Society Fall Meeting**, **Boston MA,** November 27-December 2, 2016.

16 Barton, Z.J.; Burgess, M.; Hui, J.; Zhang, J.; Hernandez-Burgos, K. Rodríguez-López, J. *In Situ* Mapping of Ionic Reactivity on Battery Electrodes Using Versatile Electrochemical Probes. **67th meeting of the International Society of Electrochemistry, The Hague, Netherlands,** August 21-26, 2016.

15 Monzo, J.; Kolodziej, A.; Rodriguez, P.; Morandi, S.; Minguzzi, A.; Rondinini, S.; Kromer, M.; Gossage, Z.; Rodríguez-López, J. Photocatalytic Nanoparticles Obtained via the Cathodic Corrosion Method and Electrochemical Imaging of their Water Oxidation Reactivity. **67th meeting of the International Society of Electrochemistry, The Hague, Netherlands,** August 21-26, 2016.

14 Rodríguez-López, J. Electrochemical Interrogation of Redox Active Polymer Particles for Energy Storage. *SEAC- Nanoelectroanalysis for a Sustainable World*, **Pittcon 2016**, **Atlanta GA**, March 6-10, 2016.

13 Hui, J.; Gavvalapalli, N.; Lichtenstein, T.; Cheng, K.; Moore, J.S.; Rodríguez-López, J. A Size-Selective Strategy for High-Performance Nonaqueous Redox Flow Batteries. **250th Meeting of the American Chemical Society, Boston MA**, August 16-21, 2015.

12 Simpson, B.H.; Zhou, X.; Rodríguez-López, J. Nanoscale Redox Titrations for the Quantification of Surface Photocatalytic Intermediates at Operating Water-Splitting Photoandodes. **250th Meeting of the American Chemical Society, Boston MA**, August 16-21, 2015.

11 Hui, J.; Gavvalapalli, N.; Lichtenstein, T.; Cheng, K.; Moore, J.S.; Rodríguez-López, J. Electrochemistry and Transport of Redox Active Polymers Across a Porous Separator: Towards a Size-Selective Strategy for Non-Aqueous Redox Flow Batteries. **227th Electrochemical Society Meeting, Chicago IL**, May 24-28, 2015.

10 Simpson, B.H.; Zhou, X.; Rodríguez-López, J. Redox Nano-Titrations on Operating Water-Splitting Semiconductor Electrodes for the Quantification of Photogenerated Intermediates. **Pittcon 2015, New Orleans LA**, March 8-12, 2015.

9 Barton, Z.J.; Burgess, M.; Benson, P.; Shen, M. Rodríguez-López, J. Electrochemical Imaging of Interfacial Ionic Reactivity for the *In Situ* Investigation of Charge Storage Mechanisms at Battery Anodes. **Pittcon 2015, New Orleans LA**, March 8-12, 2015.

8 Simpson, B.H.; Zhou, X.; Rodríguez-López, J. Redox Nano-Titrations for the Quantification of Adsorbed Intermediates at Photocatalytic Surfaces. **Midwestern Universities Analytical Chemistry Conference (MUACC) 2014, Iowa State University**, **Ames IA**, October 24-25, 2014. *MUACC travel award.*

7 Rodríguez-López, J.; Barton, Z.J.; Simpson, B.H.; Kim, D.-K.; Shen, M. *In situ* Nano-Electrochemical Investigation of Battery Electrode Dynamics. **ElecNano 6, Paris, France**, May 27-28, 2014.

6 Rodríguez-López, J.; Barton, Z.J.; Simpson, B.H.; Shen, M. *[Symposium in Honor of Andrzej Wieckowski]*. Spatially-Resolved Electrochemical Methods for the Multi-Scale Investigation of Electronic and Ionic Reactivity and Transport at Interfaces for Energy Conversion and Storage. **225th Meeting of the Electrochemical Society, Orlando FL**, May 11-15, 2014.

5 Rodríguez-López, J.; Shen, M.; Simpson, B.H.; Barton, Z.J.; Lichtenstein, T.; Gavvallapalli, N.; Moore, J.S. *[Organized session – New Enabling Analytical Techniques for Electrochemical Energy Materials]* Quantitative Imaging of Ionic Reactivity at Battery Electrode Interfaces using Amperometric Probes. **Pittcon 2014, Chicago IL**, March 2-6, 2014.

4 Rodríguez-López, J. Imaging Reactivity at Electrodes for Energy Storage and Conversion. Turkey Run Analytical Chemistry Conference – Closing Speakers Discussion, **Turkey Run State Park, Marshall, IN**, September 27-28, 2013.

3 Rodríguez-López, J.; Plaza Dominguez, M.; Shen, M.; Simpson, B.H.; Ritzert, N.L; Ko, P.; M.; Huang, X.; Brock, J.D.; Schlom, D.; Abruña, H.D. *In situ* X-ray and Open Circuit Measurements on a Model Water Splitting Electrocatalyst: Insight into Surface Reactivity Changes Upon Operation. **246th ACS National Meeting & Exposition, Indianapolis IN**, September 8-12, 2013.

2 Rodríguez-López, J.; Alpuche, M.A.; Wang, Q.; Bard, A.J. The Use of Surface Interrogation SECM for the Quantification of Small Adsorbed Intermediates at (Electro)catalytic Surfaces. **6th Workshop on Scanning Electrochemical Microscopy, Fréjus, France**, October 3-7, 2010.

1 Rodríguez-López, J.; Bard, A.J. SECM Surface Interrogation of Electrodes for the Quantification of Adsorbed Intermediates. **5th Workshop on Scanning Electrochemical Microscopy, Blue Mountain Lake NY**. August 25-28, 2008. *Presented as a graduate student.*

POSTERS AS PRESENTING AUTHOR

11 Rodríguez-López, J.; Simpson, B.H.; Krumov, M. Electrochemical Imaging and Interrogation of Nano-Scale Reactive Domains During Photoelectrocatalysis. **Materials Research Society Fall Meeting, Boston MA**, November 27-December 2, 2016. *Nominee for best poster*.

10 Rodríguez-López, J. Versatile Macromolecular Design for Emerging Size-Exclusion Nonaqueous Redox Flow Batteries. **67th Annual meeting of the International Society of Electrochemistry, The Hague, Netherlands**, August 21-26, 2016.

9 Rodríguez-López, J. Redox Active Polymers: Pursuing a Size-Selective Strategy for High Performance Nonaqueous Redox Flow Batteries. **66th Annual meeting of the International Society of Electrochemistry, Taipei, Taiwan,** October 4-9, 2015.

8 Vaughey, J.; Schoreder, D.; Nagarjuna, G.; Moore, J.S.; Rodríguez-López, J.; Helms, B.; Li, C.; Joshi, A.; Milliron, D. Membranes for Nonaqueous Redox Flow Batteries. **Joint Center for Energy Storage Research Annual Review, Argonne National Laboratory**, July 22, 2014.

7 Rodríguez-López, J.; Simpson, B.H.; Rodriguez, P. Transatlantic Collaboration Catalyzes Advanced Electrochemistry Research for Energy Conversion and Fuel Cells. Presented during the Visit of the President of the University of Birmingham in the context of the **BRIDGE program, Spurlock Museum**, March 11, 2014.

6 Rodríguez-López, J.; Plaza, M.; Huang, X.; Ritzert, N.; Shen, M.; Brock, J.D.; Schlom, D.; Abruña, H.D. $SrTiO_{3-d}$ Electrodes for Photoassisted Electrochemical Oxidation of Water. Presented at the 4th CEC Annual Workshop on Electrochemistry, Etter-Harbin Alumni Center, **The University of Texas at Austin, Austin TX**, February 9-10, 2013.

5 Rodríguez-López, J.; Plaza, M.; Huang, X.; Ritzert, N.; Brock, J.D.; Schlom, D.; Abruña, H.D. $SrTiO_{3-d}$ Electrodes for Photoassisted Electrochemical Oxidation of Water. **Materials Research Society Fall 2012 meeting, Boston MA**, November 25-30, 2012. *Nominee for best poster*.

4 Shen, M.; Rodríguez-López, J.; Nepomnyaschii, A.; Bard, A.J. Scanning Electrochemical Microscopy Studies of Electrogenerated Chemiluminescence in the Radical Annihilation Mode. **Pittcon 2011, Atlanta GA**, March 13-18, 2011.

3 Rodríguez-López, J.; Sánchez-Sánchez, C.M.; Minguzzi, A.; Alpuche-Avilés, M.A.; Bard, A.J. Digital Simulations of Complex Diffusion Interactions in Scanning Electrochemical Microscopy. Presented at the Chemistry and Biochemistry 2008 Spring Symposium, Department of Chemistry and Biochemistry, **The University of Texas at Austin, Austin TX**. April 5, 2008. *3rd place among graduate students and postdoctoral fellows.*

2 Rodríguez-López, J.; Bard, A.J. A New Electrochemical In-Situ Technique based on the SECM for the Study and Design of Electrocatalysts. Presented at Nano-Night 08 Poster session, Center for Nano- and Molecular Science and Technology (CNM), **The University of Texas at Austin, Austin TX**. April 22, 2008. *Swagelok Award.*

1 Rodríguez-López, J.; Bard, A.J. SECM Surface Interrogation, a New Electrochemical *In Situ* Technique for the Study of Adsorbed Intermediates. Presented at the 1st CEC Annual Workshop on Electrochemistry "Challenges at the Electrode/Electrolyte Interface", AT&T center, **The University of Texas at Austin, Austin TX**. January 31, 2009.

WORKSHOP AND RESEARCH PANEL INVITATIONS

- ***IAspire Leadership Academy***, 2021-2023
- ***Next Generation Electrochemistry (NGenE) Workshop***. University of Illinois at Chicago**,** Chicago IL, June 2017, 2018 and 2019 and upcoming 2021 as facilitator/panelist/speaker.
- ***Future Directions of Synthetic Biology for Energy and Power Workshop***. Organized by the Assistant Secretary of Defense for Research and Engineering (ASDR&E). Arlington VA, March 6-7, 2018.

- ***Scialog Advanced Energy Storage Workshop***. Organized by the Research Corporation for Science Advancement. Tucson AZ, November of 2017, 2018 and 2019.
- ***Energy Biosciences Institute Workshop***. University of California Berkeley, Jan. 13, 2017.
- ***Energy Storage Panel*.** Participated as panelist during the Regional Clean Energy Innovation Forum, Purdue University, June 9, 2016.
- ***Battery Science and Characterization Workshop (SciChar).*** Attended at Lawrence Berkeley National Laboratory, May 20-21, 2013.
- ***Cottrell Scholars Collaborative New Faculty Workshop***. Attended at Washington, D.C., July 25-27, 2013.

Current Grants and Research Support

PRINCIPAL INVESTIGATOR

Scialog: Advanced Energy Storage (Sloan Foundation) **02/15/20 – 02/14/22**
SurPhase: Elucidating a Self-Coating Mechanism for Improved Cathode Performance

Scialog: Advanced Energy Storage (RCSA) **02/01/20 – 01/31/22**
DIRECT: Designer Interfacial Reactivity via Electrostatically-Enhanced Charge Transfer

Discovery Fund **09/01/19 – 08/30/22**
Versatile Monitoring of Particulate Matter Using Nanoelectrode Collisions

National Science Foundation / DMR-SSMC **08/15/19 – 07/31/22**
(Co-PI: Prof. Jose Luis Mendoza, FSU)
Enabling Fast and Efficient Nonaqueous Ion Co-intercalation for High Energy Density Charge Storage Via Systematic Interfacial Design

National Science Foundation / CHE-CMI **08/01/17 – 07/30/21**
Understanding the Reactive Evolution of Ion-Battery Interfaces through Versatile Single-Site Ionic Interrogation and Imaging Toolset

National Science Foundation / CHE-CMI **08/01/20 – 07/30/23**
Quantifying Chemical Surface Intermediates and Interfacial Redox Processes via Combined Raman Spectroscopy and Scanning Electrochemical Microscopy.

Joint Center for Energy Storage Research (JCESR)/ DOE-BES **06/30/18 – 06/29/23**
Functions to Impart Resiliency to Redoxmers for Flow Batteries
Focus area leader

CO-PRINCIPAL INVESTIGATOR

EFRI – DCheM/ NSF **09/01/20 – 08/31/24**
PI: Prof. David Flaherty, UIUC
EFRI: DCbem: Renewable Energy Driven Electrocatalytic Co-Conversion of CO_2 and Regional Feedstocks to Chemicals and Fuels

US Army Engineer Research and Development Center **11/30/20-11/30/22**
PI: Prof. Huimin Zhao, UIUC
New Technologies for Regenerating Lead-Acid Batteries

Review and Professional Service

PROPOSAL REVIEW RESEARCH PANELS

- Macromolecular, Supramolecular and Nanochemistry (MSN) program within the Chemistry division (CHE), National Science Foundation
- Solid-State and Materials Chemistry (SSMC) program within the Division of Materials Research (DMR), National Science Foundation
- Centers for Chemical Innovation (CCI), National Science Foundation
- Molecular Foundry Proposal Review Board

AD-HOC PROPOSAL REVIEW

- National Science Foundation – Solid State and Materials Chemistry Program (DMR), Catalysis Program (CHE), and America's Seed fund (SBIR)
- Air Force Office of Scientific Research
- ACS Petroleum Research Fund
- Army Office of Research
- Department of Energy Basic Energy Sciences – Catalysis Program, Condensed Phase and Interfacial Molecular Science Program, Solar Photochemistry Program.
- South Carolina EPSCoR/IDeA
- Israel Science Foundation
- German Research Foundation (Deutsche Forschungsgemeinschaft, DFG)
- Dutch Research Council (NWO)
- Engineering and Physical Sciences Research Council (EPSRC)
- UIUC BRIDGE program
- Beckman Program Advisory Committee – Review of postdoctoral and graduate proposals
- Research Corporation for Science Advancement (RCSA)

PEER REVIEW FOR JOURNAL PUBLISHERS

Reviewed +200 scientific manuscripts in international journals:

- **American Chemical Society**: *Journal of the American Chemical Society, Analytical Chemistry, Accounts of Chemical Research, ACS Energy Letters, ACS Applied Energy Materials, Langmuir, Journal of Physical Chemistry C, Journal of Physical Chemistry Letters, ACS Catalysis, ACS Nano, and Inorganic Chemistry.*
- **Nature Publishing Group**: *Nature, Nature Communications, and Nature Nanotechnology.*
- **AAAS:** *Science.*
- **National Academy of Sciences:** *PNAS*
- **The Electrochemical Society**: *Journal of the Electrochemical Society.*
- **Elsevier**: *Electrochimica Acta, Electrochemistry Communications, Journal of Electroanalytical Chemistry, Surface Science, Surface Coatings and Technology, and Materials Chemistry and Physics.*
- **Royal Society of Chemistry**: *Chemical Science, Analytical Methods, and Physical Chemistry Chemical Physics.*
- **Wiley**: *Angewandte Chemie, ChemNanoMat, ChemElectroChem, and Journal of Raman Spectroscopy.*
- **MDPI:** *Nanomaterials*
- **Cell Press**: *Joule.*

Teaching

Chem 222 – Quantitative Chemical Analysis	Fall 2012-2016 Fall 2020	~120 students
Chem 481 – Physical Methods for Materials Chem.	Spring 2014,2015	~16 students
Chem 524 – Electrochemistry	Spring 2016-2020	~30 students
Chem 420 – Instrumental Characterization Lecture	Fall 2018, Fall 2021	~180 students
Chem 592 – Preparing Graduate Fellowships	Fall 2019	~ 25 students

External Committees and Leadership

- Elected to the **Electrochemical Society's Physical and Analytical Electrochemistry Division Executive Committee** for the term 2021-2023.
- **Guest Editor** to the "Enabling Electrochemical Strategies" Special Issue in *Analyst.*
- Elected to the 2017-2022 **Board of Directors of the Society for Electroanalytical Chemistry.** Currently serving as Memberships Coordinator.
- Committee Member for the Design of the **2017 American Chemical Society Instrumental Analysis Exam**.
- **Leader "Redox Active Polymer Sprint"** (2014-2017) and **Focus Area Leader** (2018-present) for the **Joint Center for Energy Storage Research (JCESR)**. Main activities include coordinating research and communication efforts through bi-weekly video conference, meetings with students and postdocs, file sharing, and travel, between research groups at UIUC, University of Chicago, University of Utah, MIT, Harvard, University of Michigan and Argonne National Laboratory. JCESR Sprint highlights available in *YouTube* videos featuring the PI: [Video 1], [Video 2], [Video 3], [Video 4].
- **Membership in professional organizations:** American Chemical Society (ACS), The Electrochemical Society (ECS), Society for Electroanalytical Chemistry (SEAC), International Society of Electrochemistry (ISE), Materials Research Society (MRS).

ORGANIZATION OF SYMPOSIA AND CONFERENCES

1. **Future Co-Organizer** of *11th International Workshop on SECM and Related techniques*, Montreal, Canada, TBD.
2. **Symposium Co-Organizer** of the "*A07: Ion Coordination and Dynamics in Battery Electrolytes, Interfaces and Interphases symposium*" at the ***239th Electrochemical Society Meeting,*** Chicago IL, May 30 – June 3, 2021.
3. **Symposium Co-Organizer** of "*A Next Generation for Ion Battery Analytics*" Symposium during ***Pittcon 2019***, Philadelphia PA, March 17-21, 2019.
4. **Symposium Co-Organizer** of "*EN09: Materials and Systems for Grid Energy Storage—Redox Flow Batteries*" during the ***2018 Spring Materials Research Society Meeting***, Phoenix AZ, April 2-6, 2018.
5. **Symposium Co-Organizer** of "*Electrochemical Technology for Solving 21st Century Challenges,*" during the ***68th Annual Meeting of the International Society of Electrochemistry***, Rhode Island, August 27-September 1, 2017.
6. **Symposium Co-Organizer** of "*Synthesis & Characterization of Materials for Energy,*" during the ***253rd American Chemical Society Meeting***, San Francisco CA, April 2-6, 2016.
   - Helped secure $1,900 in sponsorship for symposium activities.

- Organized schedule and sessions for 60 speakers.

7. **Conference Organizer and Host** of the ***Midwestern Universities Analytical Chemistry Conference (MUACC)*** at the I-Hotel, UIUC, October 13-15 of 2016.
   - Designer of Official Website [Link], Editorial highlight in *Analytical Chemistry* [Link].
   - Secured $10,525 in sponsorship from companies for symposium activities.
   - Organized logistics for 25 oral speakers and one poster session.
8. **Symposium Organizer** of "*Nano-Electroanalysis for a Sustainable World"* during ***Pittcon 2016*** in Atlanta GA, March 7, 2016.
9. **Symposium Organizer** of "*New Enabling Analytical Techniques for Electrochemical Energy Materials*" during ***Pittcon 2014***, Chicago IL, March 5, 2014.

UNIVERSITY/CAMPUS SERVICE

DEPARTMENT OF CHEMISTRY SERVICE

2012-2017	Graduate Admissions and Recruiting Committee
2013-present	Diversity/Program Review Committee
2013-2019	NSF/3M REU Committee
2015-2016, 2019	Appeals Hearing Committee
2016	Search Committee for Head of Chemistry Department
2017	Search Committee for Director of Graduate Diversity
2018-present	Budget and Operations, Analytical Area

CAMPUS SERVICE

2017-2020	Program Advisory Committee, Beckman Institute
2017-present	OVCRI Diversity Committee, representing Beckman Institute
2020	Pre-proposal review for various programs

Outreach

- ACS UIUC Undergraduate Chapter Faculty Advisor (2013-present). Outreach activities with the chapter include the creation of demonstration kits in the PI's laboratory on topics related to "Chemical Energy" and "Forensic Chemistry" which have been featured in "Quad Day" festivities and in local high-schools.
- American Chemical Society Chemistry Ambassador.
- The PI is member of the executive board of the "Cena y Ciencias" (CyC, S*upper and Science*), where we design activities and deliver them to K-8 audiences. CyC involves teachers and parents across language and cultural groups to support Spanish-language literacy in the sciences. In 2019 we received a recognition from the Urbana School District.
    - Features highlighting our contribution in 2018 [link] and 2020 [link]
- The PI and group designed activities and demonstrations for the "Beckman Open House" Event in March of 2017 and of 2019. We highlighted experiments in battery chemistries.
- The JRL group organizes every year "The Electrochemistry Bootcamp," an event for jumpstarting new students in the group and interested students elsewhere on experimental electrochemistry. This intensive 3-day course consists of 15 experiments, 1 simulation session, 6 lectures, and a final project. Since 2019 we have opened this course to schools beyond UIUC. Currently each edition trains ~25 students on average.

PROFESSIONAL DEVELOPMENT, PUBLIC SPEECH AND INVITED TEACHING:

Upcoming: Kaler Science Lecture Series Speaker at Staerkel Planetarium, Parkland College, Champaign, Illinois, 2022.

1. **Chem 222 class at the University of Illinois Chicago** (Instructor: Prof. Ginevra Clark) invited speaker of "Redox Nanotitrations" March 3, 2021 and October 29, 2020.
2. **Chem 590F class**, taught by Prof. Steven C. Zimmerman: "*Grantsmanship Panel*", February 11, 2019, and "*Looking for an Academic Career Panel*" February 4, 2013.
3. **Women's Chemistry Committee Lunch Panel on Engaging with your Committee Members,** April 10, 2018.
4. **"New Trends in Energy Storage: How Research at the Smallest Scale Impacts our Largest Societal Needs"** Chambana Café (Organized by the Institute for Genomic Biology). February 7th, 2018.
5. **Professional Career Panel** at the Gordon Research Symposium in Electrochemistry, Ventura CA, January 7, 2018.
6. **"Jumpstarting Young Scientists into Advanced Energy Research."** 68th Annual Meeting of the International Society for Electrochemistry, Joint ISE-ECS Symposium on Education, Providence RI, August 28, 2017.
7. **"Electrochemistry at the Nanoscale."** Presented to the Quantitative Analysis Laboratory Section, Department of Chemistry, Eureka College, Eureka IL, March 30, 2017.
8. **Student-Faculty-Industry Networking: Getting Students Prepared for their Careers.** Participated as panelist, Pittcon 2017 in Chicago IL, March 7, 2017.
9. **Speech address to the Society of Analytical Chemists of Pittsburgh and the local ACS chapter** at the awards dinner, Pittsburgh PA, May 18, 2015.
10. Regular Participant of the **Science Café series** organized by the ACS Undergraduate Chapter. Presented topics include: **"Electrochemical Storage in Organic Electrodes"** (February 23, 2014), **"Electrochemical Nanoreactors"** (February 1, 2015), and **"Electrochemistry with Ultra-Thin Electrodes"** (September 11, 2016).
11. **Lessons Learned in First Years** Q&A panel. Participated as panelist in the Illinois New Faculty Orientation, held at the I-Hotel and Conference Center, August 20, 2013.
12. **International Student and Scholar Services Professor Lunch** Q&A panel, University of Illinois ARC Gym. Participated as panelist, October 27, 2012.
13. **"Imaging Chemical Reactivity at Catalytic Surfaces Using Tiny Electrodes**." American Chemical Society Student Members at UIUC general body meeting, March 28, 2013.
14. **"An Electrochemical Firefly**." Learning activity for the Illinois New Teacher Collaborative discussing demonstrations for K-12 children, I-Hotel, July 30-31, 2013.

NON-TECHNICAL CONTRIBUTIONS, MEDIA HIGHLIGHTS, AND OUTREACH

- The Chalkboard. Picture your electrode: A primer on scanning electrochemical microscopy. *ECS Interface Magazine*, **2020**, *29*(3), 30-32. [Link]
- The SN10: These scientists defy limits to tackle big problems. **Science News**, September 26, 2018. [Link]
- Interview for Toyota Fellowships Come Full Circle. **ECS RedCat Blog**, November 15, 2017. [Link]

- Interview for the Royce W. Murray SEAC Young Investigator award. **Pittcon Today** (magazine), March 6th 2017, p. 12. [Link]
- Ainsworth, S.J. and Wang, L. Words of Wisdom – C&EN readers offer advice to help assistant professors soar in their new roles. **Chemical and Engineering News**, Vol. 92, Issue 36, September 8th, 2014, pp 52-53. [Link]

Student Advising

CURRENT STUDENTS AND POSTDOCTORAL RESEARCHERS

Ph.D Students

Hatfield, Kendrich Chemistry (Analytical) October 2017 – present
Status: PhD candidate, 5th year

Sarbapalli, Dipobrato Materials Science May 2018 – present
Status: PhD candidate, 4th year

Zhao, Yuanya Chemistry (Analytical) October 2018 – present
Status: PhD candidate, 4th year

Pudar, Sanja Chemistry (Analytical) October 2018 – present
Status: 4th year, good standing

Mishra, Abhiroop Materials Science October 2019 – present
Status: 3rd year, good standing

Baby, Aravind Materials Science January 2020 – present
Status: 3rd year, good standing

Ibrahim, Nafisa Chemistry (Materials) October 2019 – present
Status: 3rd year, good standing

Pence, Michael Chemistry (Analytical) October 2020 – present
Status: 2nd year, good standing

Ramirez, José Chemistry (Inorganic) April 2021 – present
Status: 2nd year, good standing

Gaddam, Raghuram Materials Science May 2020 – present
Status: 1st year, good standing (accepted to doctoral program starting Fall 2021)

Masters Students

N/A

Undergraduate Students

Althaus, Curtis Chemistry January 2021- present

Postdoctoral

Dr. Adolfo Barros October 2019 - present
Project: *Redoxmer chemistries for flow batteries and lead-acid batteries*

Dr. Sazzad Md. Hossain April 2020 - present
Project: *Interfacial electrostatics and redox imaging*

Dr. Oliver Rodríguez Martínez February 2021 - present
Project: *Microfluidic platform for redox flow battery research*

FORMER STUDENTS, POSTDOCS, AND ALUMNI

Graduated Ph.D Students

Dr. Jingshu Hui Materials Science September 2012–July 2017
Title: *"Electrochemical Mechanisms in Nanostructured Graphitic and Redox-Active Polymeric Architectures."*
Now: Professor at Soochow University, China in 2020

Dr. Zachary J. Barton Chemistry (Analytical) October 2012–June 2017
Title: *"Spatially Resolved Ionic Measurements with Scanning Electrochemical Microscopy."*
Now: Scientist at Lockheed-Martin Space, Denver CO

Dr. Burton H. Simpson Chemistry (Analytical) October 2012–July 2017
Title: *"Probing Structure-Function Relationships at Catalytic Surfaces with Emerging Electroanalytical Tools."*
Now: Scientist at Illumina, San Diego CA

Dr. Mark Burgess Chemistry (Analytical) October 2013–July 2017
Title: *"Probing the Electrochemical Dynamics of Soluble Redox Active Polymers."*
Now: Process analyzer engineer at Exxon Mobil, Houston TX

Dr. Elena C. Montoto Chemistry (Materials) October 2014–Jan. 2019
Title: *"Soluble redox active macromolecular architectures and their electrochemical analysis for energy storage applications"*
Now: Senior Researcher at Dow Chemicals, Midland MI

Dr. Noah B. Schorr Chemistry (Analytical) October 2015–July 2019
Title: "*Coupling Raman spectroscopy and scanning electrochemical microscopy for spectroelectrochemical analysis of electrode interfaces*"
Now: Postdoc at Sandia National Laboratories

Dr. Matthew L. Kromer Chemistry (Materials) October 2015–May 2020
Title: *"Thesis title Electrochemical analysis of photoelectro-, electro-, and thermal catalysis towards more efficient hydrogen peroxide production"*
Now: Visiting Assistant Professor, Harvey Mudd College

Dr. Zachary T. Gossage Chemistry (Analytical) October 2015–May 2020
Title: "*Revealing ion transfer kinetics and charge dynamics at operating battery materials through scanning electrochemical microscopy"*
Now: Now: Postdoctoral researcher at the Tokyo University of Science in Japan

Dr. Michael J. Counihan Chemistry (Materials) October 2016–Dec. 2021
Title: *"Dynamic measurement and control of electrochemical interfaces for energy storage and conversion"*
Now: Postdoctoral researcher at Argonne National Laboratory

Graduated Masters Students

Cristarella, Teresa C. Chemistry (Analytical) October 2012–December 2014
Thesis: *"Single Layer Graphene as a Stable and Transparent Electrode for the Measurement of Non-aqueous Electrogenerated Chemiluminescence and Inverse Photoemission."*
Now: Researcher at Monsanto, St. Louis MO

Claudio-Cintrón, Marie A. Chemistry (Analytical) October 2016–August 2018
Thesis: *"Scanning electrochemical microscopy with conducting polymer probes: validation and applications."*
Now: Moved to Ohio and is on the job market

Rajput, Arneet Materials Science October 2017–May 2019
Non-thesis student
Now: Followed a DAAD Internship in Germany, then accepted a position in the semiconductor industry in Arizona.

Past Postdoctoral

Dr. Xuan Zhou June 2014–May 2016
Project: *Photoelectrochemical imaging with SECM*
Now: Postdoctoral researcher at UIUC

Dr. Kenneth Hernandez-Burgos October 2015–November 2018
Project: *Electrochemical Characterization of Redox-Active Polymers*
Distinctions: Beckman Postdoctoral Fellowship, Ford Foundation Fellowship (declined)
Now: R&D Chemist at Dupont, Boston MA

Dr. Jingshu Hui August 2018– August 2020
Project: *Ultrathin electrodes, Nanoelectrochemistry*
Now: Professor at Suzhou University, China

Dr. Andrew S. Danis May 2019–May 2020
Project: *SECM methods for flow batteries*
Now: Postdoctoral researcher at University of Quebec, Canada

Dr. Mehdi Rashvand Avei November 2020 – July 2021
Project: *Redoxmer chemistries for flow batteries and lead-acid batteries*

Visiting Graduate Students

Morandi, Sara 2015 Independent study from University of Milan, Italy
Syrek, Karolina 2017 Independent study from Jagellonian University, Poland
Lawrence, Matthew 2017 BRIDGE collaborative, Birmingham University, UK
Zeng, Yunxiong 2017-2019 Hunan University, China
Scola-Rodriguez, Bárbara 2019 Federal University of ABC, Sao Paulo, Brazil
Jaxiry Barroso Martínez 2021 CIDETEQ, Querétaro, Mexico

Graduated Undergraduate Students with Thesis

Chinderle, Adam J. B.S. Chemistry Spring 2013–Spring 2014
Supervised Thesis: *"Electrochemical Reduction of Carbon-Containing Molecules to Graphene and the Effects of Underlying Functional Groups on a Graphene Electrode."*
Now: Adam works in a pharmaceutical company in Indiana.
Achievements: Co-author in references 50, 35 and 24.

Benson, Emily B.S. Chemistry Spring 2014–Spring 2015
Supervised Thesis: *"Electrochemical Imaging of Ion Transfer Processes on Membranes for Desalinization and on Aqueous Battery Anodes."*
Now: Emily works at the Grain Processing Corp. in Davenport, Iowa.

Flores, Heriberto B.S. Chemistry Spring 2018- Spring 2019
Supervised Thesis: *Modifying Ultramictroelectrodes with Multi-Layer Graphene Fragments for use in Scanning Electrochemical Microscopy"*
Now: Heriberto headed out to the University of California at Irvine for graduate school
Achievements: Heriberto is a co-author in reference 66. He received awards including the Carl S. Marvel Undergraduate Research Award, the SACNAS Outstanding Poster Award, and the Wolfram Alpha Award.

Cheng, Xia B.S. Chemistry Spring 2018- Fall 2020
Supervised Thesis: *The effect of metal substrates on outer-sphere electron transfer kinetics above ultrathin graphene interface*
Now: Alex is heading to grad school.
Achievements: Alex is co-author in reference 79.

Graduated Undergraduate Students with Significant Contribution

Lichtenstein, Timothy Materials Science Fall 2012–Spring 2015
Project: *Electrochemical Imaging and Characterization of Redox Active Polymers for Non-Aqueous Redox Flow Batteries.*
Now: Timothy is a graduate student at Penn State
Accomplishments: Co-authored two works, Refs. 30 and 22, and is a patent co-inventor

Bhargava, Richa Chemistry Fall 2013–Spring 2014
Project: *Electrochemical Characterization of Single Layer Graphene*.
Now: Richa works at Heinz in Pittsburgh PA
Accomplishments: Co-authored two published works, Refs. 35 and 50.

Genise, Amanda Chemical Engineering Fall 2014–Spring 2015
Project: *Mechanistic Investigation of Lithium-ion Batteries using Tiny Electrodes.*
Accomplishments: Amanda was part of the Illinois Scholars Undergraduate Research Program

Qian, Shaoyi Chemical Engineering Fall 2015–Fall 2016
Project: *Evaluation of the Conductivity of Redox Active Polymer Electrolytes.*
Now: Shaoyi is a graduate student in art restoration at New York University
Accomplishments: Co-authored one published work, Ref. 46

Zhang, Jiarui (Jerry) Chemistry Fall 2015–Spring 2017
Project: *Electrochemical Characterization of Single Layer Graphene*.
Now: Jerry is a graduate student at Rutgers University
Accomplishments: Co-authored two works, Refs. 35 and 32

Krumov, Mihail Chemical Engineering Spring 2015-Fall 2017
Project: *Surface Interrogation SECM for the Detection of Adsorbed Reaction Intermediates.*
Now: Mihail is a graduate student at Cornell University
Accomplishments: Mihail was first author of a manuscript, Ref. 51, and received a national award (Eastern Analytical Symposium Analytical Chemistry Undergraduate Award)

Jiang, Guanmei (Annie) Chemistry Spring 2016- Spring 2019

Project: *Coupled Raman-SECM*
Now: R&D Technician in Flexterra Corporation
Accomplishments: Published in Ref. 54

Setwipatanachai, Worapol Chemical Engineering Fall 2017- Spring 2019
Project: *Tunneling Microelectrodes for SECM Imaging*
Now: Top is heading to the private sector
Accomplishments: Published in Ref. 64

Qu, Zihan Chemistry Fall 2017- Spring 2019
Project: *Graphene Electrochemistry*
Now: Graduate student at The Ohio State University
Accomplishments: Published in Ref. 58

Visiting Undergraduate Students

Elbaar, Nadia	2013 REU Program
Avetian, Sona	2015 REU Program
Kneer, Marissa	2015 REU Program
Davila, Jasmine	2016 REU Program
Wang, Zhe	2016 Peking University
Nguyen, Hung	2016 Hanoi University
Qin, Terry	2016 Nankai University
Sabah, Clinton	2020 Grinnell College
Chen, Yuanke	2020 Shanghai Tech

Thesis examination committee participation:

Current

- **Devasia, Dinumol** Since 2017 Advisor: Prashant Jain
- **Madsen, Kenneth** Since 2018 Advisor: Andrew Gewirth
- **Esposito, Anne Marie** Since 2018 Advisor: Andrew Gewirth
- **Bandas-Rivera, Chris** Since 2018 Advisor: Andrew Gewirth
- **Lee, Cindy** Since 2018 Advisor: Jonathan Sweedler
- **Murphy, Shannon** Since 2018 Advisor: Jonathan Sweedler
- **Gole, Matthew** Since 2018 Advisor: Catherine Murphy
- **Meyer, Sean** Since 2018 Advisor: Catherine Murphy
- **Adams, Jason** Since 2019 Advisor: David Flaherty
- **Bram, Stanley** Since 2019 Advisor: Prashant Jain
- **Shrivastava, Aniruddh** Since 2019 Advisor: Kyle Smith
- **Thornburg, Eric** Since 2019 Advisor: Andrew Gewirth
- **Ricciardulli, Tomas** Since 2019 Advisor: David Flaherty
- **Kharel, Priti** Since 2019 Advisor: Pinshane Huang
- **Griffith, Paul** Since 2019 Advisor: Lisa Olshansky
- **Eddalpalil, Anupriya** Since 2020 Advisor: Mei Shen
- **Tapia, Rodrigo** Since 2020 Advisor: Jeffrey Chan
- **Tetrick, Maxwell** Since 2020 Advisor: Catherine Murphy
- **Hua, Qi** Since 2020 Advisor: Andrew Gewirth
- **Jetmore, Henry** Since 2021 Advisor: Mei Shen

- **Harris, Lauren** Since 2021 Advisor: Andrew Gewirth
- **Nixon, Rachel** Since 2021 Advisor: Prashant Jain
- **Paliwal, Akhil** Since 2021 Advisor: Andrew Gewirth

Completed

- **Dowd, Sarah** Graduated in 2015 Advisor: Jonathan Sweedler
- **Barile, Christopher** Graduated in 2015 Advisor: Andrew Gewirth
- **Pacquette, Adele** Graduated in 2015 Advisor: Andrew Gewirth
- **Ma, Sichao** Graduated in 2016 Advisor: Paul Kenis
- **Routzahn, Aaron** Graduated in 2016 Advisor: Prashant Jain
- **Schmitt, Kevin** Graduated in 2016 Advisor: Andrew Gewirth
- **McCurry, Daniel** Graduated in 2016 Advisor: Ryan Bailey
- **Hoang, Thao** Graduated in 2016 Advisor: Andrew Gewirth
- **Liu, Yao-Min** Graduated in 2017 Advisor: Andrew Gewirth
- **Kim, Byoungsu** Graduated in 2017 Advisor: Paul Kenis
- **Varnell, Jason** Graduated in 2017 Advisor: Andrew Gewirth
- **Chang, Siwei** Graduated in 2018 Advisor: David Flaherty
- **Patel, Amit** Graduated in 2018 Advisor: Jonathan Sweedler
- **Nicolau, Bruno** Graduated in 2018 Advisor: Andrew Gewirth
- **Kim, Sanghyeon** Graduated in 2019 Advisor: Paul Braun
- **Neumann, Elizabeth** Graduated in 2019 Advisor: Jonathan Sweedler
- **Lyttle, Tyler** Graduated in 2019 Advisor: Charles Sing
- **Shin, Minjeong** Graduated in 2019 Advisor: Andrew Gewirth
- **Qu, Subing** Graduated in 2020 Advisor: Paul Braun
- **Priyardashini, Pranjali** Graduated in 2020 Advisor: David Flaherty
- **Zhang, Ruixian** Graduated in 2021 Advisor: Andrew Gewirth
- **Philip, Maria** Graduated in 2021 Advisor: Andrew Gewirth

PUBLICATIONS

@ Denotes publication derived from the PI's undergraduate research.
# Denotes publication derived from the PI's Ph.D. thesis research.
% Denotes publication derived from the PI's postdoctoral research.
+ Denotes publication that was invited and carries special prestige and recognition.
& Denotes publication with UIUC undergraduate author(s) (*undergraduates italicized*)
& Denotes publication with NSF REU program participants (*undergraduates italicized*)
PI's name shown in **bold** and corresponding author(s) with *
All publications have undergone stringent editorial review by peers.

Chapters in Books

1 **Rodríguez-López, J.*** Chapter 4: The Surface Interrogation Mode of Scanning Electrochemical Microscopy (SI-SECM): an Approach to the Study of Adsorption and (Electro)catalysis at Electrodes. In *Electroanalytical Chemistry, a series of advances*. Vol. 24. Bard, A.J. and Zoski, C.G., Eds. 2012, CRC Press, 287-352.
ISBN: 1439837511 [Link] (#)

2 **Rodríguez-López, J.***; Zoski, C.G.*; Bard, A.J.* Chapter 16. SECM Applications to Electrocatalysis and Photocatalysis and Surface Interrogation. In *Scanning Electrochemical Microscopy*. Bard, A.J.; Mirkin, M.V., Eds. 2012, CRC Press, 525-568. ISBN: 1439831130 [Link] (#)

Articles in Journals (Google Scholar Analysis: 2748 citations, h-index = 28, i10-index = 60)

85 Romo, A. I.B.; Carepo, M.P.; Levín, P.; Nascimento, O.R.; Díaz, D.E.; **Rodríguez-López, J.;** León, I.E.; Bezerra, L.F.; Lemus, L.; Diógenes, I.C.N.* Synergy of DNA intercalation and catalytic activity of a copper complex towards improved polymerase inhibition and cancer cell cytotoxicity. *Dalton Trans.* **2021**, *50*, 11931-11940. DOI: 10.1039/D1DT01358K [Link]

84 Hatfield, K.O.; Gole, M.; Schorr, N.B.; Murphy, C.J.; **Rodríguez-López, J.*** Surface-Enhanced Raman Spectroscopy - Scanning Electrochemical Microscopy: Observation of Real-Time Surface pH Perturbations. *Anal. Chem.* **2021**, *93*, 7792-7796. DOI: 10.1021/acs.analchem.1c00888 [Link]

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+ Special Issue in Honour of A. Wieckowski

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78 Gossage, Z.T.; Guo, F.; Hatfield, K.O.; Martin, T.A.; Tian, Q.; Gao, E.J.; Kumar, A.;

Rodríguez-López, J.;* Zhao, H.* Reconstruction of Lead Acid Battery Negative Electrodes After Hard Sulfation Using Controlled Chelation Chemistry. *J. Electrochem. Soc*. **2020**, *167*, 120537.
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DOI: 10.1021/acs.chemmater.0c00768 [Link]
+ Selected as JCESR Best Paper Award 2021

76 Li, S.; Li, J.; Yu, H.; Pudar, S.; Li, B.; **Rodríguez-López, J.**; Moore, J.S.; Schroeder, C. M. Characterizing intermolecular interactions in redox-active pyridinium-based molecular junctions. *J. Electroanal.Chem.* **2020**, 114070.
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DOI: 10.1039/d0ta00836b [Link] (+)
+ HOT Article
+ 2020 Emerging Investigators Issue

73 Nijamudheen, A.; Sarbapalli, D.; Hui, J.; **Rodríguez-López, J.**;* Mendoza-Cortes, J.L.* Impact of Surface Modification on the Lithium, Sodium, and Potassium Intercalation Efficiency and Capacity on Few-Layer Graphene Electrodes. *ACS Appl. Mater. Interfaces* **2020**, *12*, 19393-19401.
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Electrodes Visualized Using Scanning Electrochemical Microscopy. *Anal. Chem*. **2020**, 3666-3673.
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DOI: 10.1021/acs.inorgchem.9b02079 [Link]

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+ Invited Contribution to "Trends in Synthetic Diamond" Issue

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+ Invited Contribution to "New Directions in Electroanalytical Chemistry" Issue

61 Li, B.; Yu, H.; Montoto, E.C.; Liu, Y.; Li, S.; Schwieter K.; **Rodríguez-López, J.**; Moore, J.S.; Schroeder, C.M.* Intrachain Charge Transport through Conjugated Donor-Acceptor Oligomers. *ACS Appl. Electron. Mater*. **2019**, 1, 7-12.
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+ Invited Contribution to Analytical Chemistry Annual Reviews Issue

59 Schorr, N.B.; Hui, J.; **Rodríguez-López, J.*** Electrocatalysis on ultra-thin 2D electrodes: New concepts and prospects for tailoring reactivity. *Current Opinion in Electrochemistry*, **2018**, *13*, 100-106. (+)
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+ Invited Contribution to "Nanoelectrochemistry" Issue

58 Hui, J.; Schorr, N.B.; *Qu, Z.*; Pakhira, S.; Mendoza-Cortes, J.L.*; **Rodríguez-López, J.*** Achieving Fast and Efficient K^+ Intercalation on Ultrathin Graphene Electrodes Modified by a Li^+ Based Solid-Electrolyte Interphase. *J. Am. Chem. Soc.* **2018**, *140*, 13599-13603.
DOI: 10.1021/jacs.8b08907 [Link] (&)

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DOI: 10.1002/celc.201800736 [Link]
+ Invited Contribution to "Single-Entity Electrochemistry" Issue
+ Selected for Cover Art

55 Baran, M.J.; Braten, M.N.; Montoto, E.C.; Gossage, Z.T.; Ma, L.; Chénard, E.; Moore, J.S.; **Rodríguez-López, J.**; Helms, B.A.* Designing Redox-Active Oligomers for Crossover-Free, Nonaqueous Redox-Flow Batteries with High Volumetric Energy Density. *Chem. Mater.* **2018**, *30*, 3861-3866.

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DOI: 10.1021/acs.macromol.8b00574 [Link] (+)
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52 Schorr, N.B.; Gossage, Z.T. **Rodríguez-López, J.*** Prospects for Single-Site Interrogation using In Situ Multimodal Electrochemical Scanning Probe Techniques. *Current Opinion on Electrochemistry* **2018**, 889-895.
DOI: 10.1016/j.coelec.2018.03.022 [Link] (+)
+ Invited Contribution to "Surface Electrochemistry" Issue

51 *Krumov, M.*; Simpson, B.H.; Counihan, M.; **Rodríguez-López, J.*** In Situ Quantification of Surface Intermediates and Correlation to Discharge Products on Hematite Photoanodes using a Combined Scanning Electrochemical Microscopy Approach. *Anal. Chem.* **2018**, *90*, 3050-3057.
DOI: 10.1021/acs.analchem.7b04896 [Link] (&)

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DOI: 10.1021/jacs.7b08353 [Link] (**&**)

48 Kromer, M.L.; Monzo, J.; Kolodziej, A.; Lawrence, M.; Gossage, Z.T.; Simpson, H.T.; Morandi, S.; Yanson, A.; **Rodríguez-López, J.***; Rodríguez, P.* High Throughput Preparation of Metal Oxide Nanocrystals by Cathodic Corrosion and their Use as Active Photocatalysts. *Langmuir* **2017**, *33*, 13295-13302.
DOI: 10.1021/acs.langmuir.7b02465 [Link]

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DOI: 10.1021/acs.chemmater.7b02243 [Link] (+)
+ Invited Contribution to "Up-and-Coming" Series

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46 Gossage, Z.; Schorr, N.B.; Hernandez-Burgos, K.; Hui, J.; Simpson, B.; Montoto, E.C.; **Rodríguez-López, J.*** Interrogating Charge Storage on Redox Active Colloids via Combined Raman Spectroscopy and Scanning Electrochemical Microscopy. *Langmuir* **2017**, *33*, 9455-9463.
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+ Invited Contribution to Special Issue on "Fundamental Interfacial Science for Energy Applications"
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DOI: 10.1016/j.jpowsour.2017.06.052 [Link] (&)

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DOI: 10.1021/acs.accounts.6b00341 [Link] (+)
+ Invited Contribution for "Nanoelectrochemistry" Issue
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39 Burgess, M.;[μ] Chenard, E.;[μ] Hernandez-Burgos, K.;[μ] Gavvalapalli, N.; Assary, R.S.; Hui, J.; Moore, J.S.*; **Rodríguez-López, J.*** Impact of Backbone Tether Length and Structure on the Electrochemical Performance of Viologen Redox Active Polymers. *Chem. Mater*. **2016**, *28*, 7362-7374. [μ]Co-first author.
DOI: 10.1021/acs.chemmater.6b02825 [Link] (+)

+ Highlighted Paper on "Redox Flow Batteries" Editorial Note in ACS Energy Letters. DOI: 10.1021/acsenergylett.7b00361

38 Montoto, E.C.;[μ] Gavvalapalli, N.;[μ] Hui, J.; Burgess, M.; Sekerak, N.M.; Hernandez-Burgos, K.; Wei, T.; *Kneer, M*.; Grolman, J.M.; Cheng, K.J.; Lewis, J.A.; Moore, J.S.*; **Rodríguez-López, J.*** Redox Active Colloids as Discrete Energy Storage Carriers. *J. Am. Chem. Soc*. **2016**, *138*, 13230-13237.
DOI: 10.1021/jacs.6b06365 [Link] (**&**)

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DOI: 10.1016/j.electacta.2016.06.134 [Link] (&)

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+ Invited Contribution to "Emerging Young Investigators" Issue

32 Hui, J.; Burgess, M.; *Zhang, J.*; **Rodríguez-López, J.*** Layer Number Dependence of Li^+ Intercalation on Few-Layer Graphene and Electrochemical Imaging of its Solid-Electrolyte Interphase Evolution. *ACS Nano* **2016**, *10*, 4248-4257.
DOI: 10.1021/acsnano.5b07692 [Link] (&)

31 Barton, Z.J.; **Rodríguez-López, J.*** Emerging Scanned Probe Approaches to the Measurement of Ionic Reactivity at Energy Storage Materials. *Anal. Bioanal. Chem.* **2016,** *408*, 2707-2715.
DOI: 10.1007/s00216-016-9373-7 [Link] (+)
+ Invited Contribution to "Young Investigators in Analytical and Bioanalytical Science" Issue

30 Simpson, B.H.; **Rodríguez-López, J.*** Electrochemical Imaging and Redox Interrogation of Surface Defects on Operating $SrTiO_3$ Photoelectrodes. *J. Am. Chem. Soc*. **2015**, *137*, 14865-14868.
DOI: 10.1021/jacs.5b10256 [Link] (+)

29 Burgess, M.;[μ] Hernandez-Burgos, K.; Simpson, B.H.; *Lichtenstein, T.*; *Avetian, S.*; Nagarajuna, G.; Cheng, K.J.; Moore, J.S.; **Rodríguez-López, J.*** Scanning Electrochemical Microscopy and Hydrodynamic Voltammetry Investigation of Charge Transfer Mechanisms on Redox Active Polymers. *J. Electrochem. Soc*. **2016**, *163*, H3006-H3013.
DOI: 10.1149/2.0021604jes [Link] (&, **&**,+)
+ Invited Contribution to Special Issue Honoring Allen J. Bard
+ Selected for the 2016 Norman Hackerman Young Author Award for Best Paper in JES by authors less than 31 years old (Burgess, Hernandez-Burgos)
+ Selected for Cover Art

28 Sevov, C.S.; Brooner, R.E.M.; Chenard, E.; Assary, R.S.; Moore, J.S.; **Rodríguez-López, J.**; Sanford, M.S.* Evolutionary Design of Low Molecular Weight Organic Anolytes for Applications in Nonaqueous Redox Flow Batteries. *J. Am. Chem. Soc*. **2015**, *137*, 14465–14472.
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27 Simpson, B.H.; **Rodríguez-López, J.*** Emerging Techniques for the *In Situ* Analysis of Reaction Intermediates on Photo-Electrochemical Interfaces. *Anal. Methods* **2015**, *7*, 7029-7041.
DOI: 10.1039/C5AY00503E [Link] (+)
+ Invited Contribution to "Emerging Investigator" Issue

26 Duarte-Guevara, C.; Swaminathan, V.V.; Burgess, M.; Reddy Jr. B.; Salm, E.M.; Liu, Y.-S.; **Rodríguez-López, J.;** Bashir, R.* On-chip Metal/Polypyrrole Quasi-reference Electrodes for Robust ISFET Operation. *Analyst* **2015**, *140***,** 3630-3641.
DOI: 10.1039/C5AN00085H [Link]

25 Simpson, B.H.; **Rodríguez-López, J.*** Redox Titrations via Surface Interrogation Scanning Electrochemical Microscopy at an Extended Semiconducting Surface for the Quantification of Photogenerated Adsorbed Intermediates. *Electrochim. Acta* **2015**, *179***,** 74-83.
DOI: 10.1016/j.electacta.2015.04.128 [Link]

24 Cristarella, T.; *Chinderle, A.*; Hui, J.; **Rodríguez-López, J.*** Single Layer Graphene as a Stable and Transparent Electrode for Non-Aqueous Radical Annihilation Electrogenerated Chemiluminescence. *Langmuir* **2015**, *31*, 3999-4007.
DOI: 10.1021/la5050317 [Link] (&)

23 Minguzzi, A.*; Battistel, D.; **Rodríguez-López, J.**; Vertova, A.; Rondinini, S.; Bard, A.J.; Daniele, S. Rapid Characterization of Oxygen Evolving Electrocatalyst Spot Arrays by the Substrate Generation/Tip Collection Mode of SECM with Decreased O_2 Diffusion Layer Overlap. *J. Phys. Chem. C* **2015**, *119*, 2941-2947.
DOI: 10.1021/jp510651f [Link]

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