

**SHANE ADAM ARDO, Ph.D.**

Assistant Professor at the University of California, Irvine  
 ardo@uci.edu :: http://www.chem.uci.edu/~ardo/ :: 949-824-3796

**EDUCATION**

Johns Hopkins University, Ph.D.	8/2010	Chemistry ( <i>specialty</i> : Photo-Physical Inorganic)
Johns Hopkins University, M.A.	2/2008	Chemistry ( <i>specialty</i> : Photo-Physical Inorganic)
University of Maryland, College Park, M.S.	6/2005	Nutrition & Food Science ( <i>specialty</i> : Nutraceuticals)
Towson University, B.S. ( <i>summa cum laude</i> )	5/1999	Mathematics ( <i>emphases</i> : Pure; Applied; Computing)

**RELEVANT WORK AND RESEARCH EXPERIENCE**Research

<b>Assistant Professor</b>	<b>University of California (UC) Irvine, Department of Chemistry</b>	<b>2013 – present</b>
<b>Joint Appointment</b>	<b>UC Irvine, Department of Chemical Engineering &amp; Materials Science</b>	<b>2014 – present</b>
<b>Visiting Associate Professor</b>	<b>Tokyo University of Science, Department of Applied Chemistry</b>	<b>2017</b>
Postdoctoral Scholar	California Institute of Technology, Chemistry, Prof. Nathan S. Lewis (PI)	2010 – 2013
Graduate Research Assistant	Johns Hopkins University, Chemistry, Prof. Gerald J. Meyer (PI)	2005 – 2010
Summer Research Assistant	University of Maryland, Chemistry & Biochemistry, Prof. Dorothy Beckett (PI)	2005
Graduate Research Assistant	University of Maryland, Nutrition & Food Science, Prof. Liangli Yu (PI)	2003 – 2005

Teaching

<b>Assistant Professor</b>	<b>UC Irvine, Department of Chemistry (3 courses over 6 quarters)</b>	<b>2013 – present</b>
Teaching Assistant	Johns Hopkins University, Chemistry (4 courses)	2005 – 2007
Teaching Assistant	University of Maryland, Chemistry & Biochemistry (2 courses)	2004 – 2005
Teaching Assistant	University of Maryland, Nutrition & Food Science (1 course, 3 times)	2004 – 2005
High School Teacher	Baltimore City College, Math/Computer Science (4 courses)	2001 – 2003
Community College Instructor	Community College of Baltimore County, Math/Computer Science (5 courses)	2000 – 2001
Teaching Assistant	Towson University, Mathematics (1 course)	1997

Computer Programming

Software Engineer	Physiome Sciences, Inc., Princeton, NJ	2001
IT Consultant	Xpedior, Inc. (previously, Metamor, Inc.), Landover, MD	1999 – 2000
Q&A Software Analyst	Shimadzu Scientific Instruments, Inc., Columbia, MD	1993 – 1996

**GRANTS, FELLOWSHIPS, AWARDS AND HONORS**Faculty

<b>DOE Early Career Research Award</b>	<b>DOE, Office of Basic Energy Sciences</b>	<b>2018 – 2023</b>
<b>Conference Support (co-PI)</b>	<b>NSF</b>	<b>2018</b>
<b>Sponsored Research</b>	<b>Nissan Chemical Corporation</b>	<b>2017 – 2018</b>
<b>Cottrell Scholars Collaborative (co-PI)</b>	<b>Research Corporation for Science Advancement</b>	<b>2017 – 2019</b>
<b>Collaborative Research Grant (co-PI)</b>	<b>UC MEXUS-CONACYT</b>	<b>2017 – 2018</b>
<b>Cottrell Scholar Award</b>	<b>Research Corporation for Science Advancement</b>	<b>2017 – 2020</b>
<b>Sloan Research Fellowship</b>	<b>Alfred P. Sloan Foundation</b>	<b>2017 – 2019</b>
<b>Moore Inventor Fellowship</b>	<b>Gordon &amp; Betty Moore Foundation</b>	<b>2016 – 2019</b>
<b>Beall Innovation Award</b>	<b>Beall Family Foundation</b>	<b>2016 – 2018</b>
<b>NSF Unsolicited Grant</b>	<b>NSF, Division of Chemistry, Chemical Catalysis Program</b>	<b>2016 – 2019</b>
<b>DOE Incubator Grant (Team Lead)</b>	<b>DOE, EERE, Fuel Cell Technologies Office</b>	<b>2015 – 2018</b>
<b>UCI Faculty Research Grant</b>	<b>UCI, Council on Research Computing and Libraries</b>	<b>2015, 2016</b>
<b>UCI Dependent Care Travel Award</b>	<b>UCI, ADVANCE</b>	<b>2014, 2015, 2015, 2016</b>
<b>UCI Travel Award</b>	<b>UCI, Center for Organizational Research</b>	<b>2014</b>
<b>UCI Faculty Startup Funds</b>	<b>UCI, School of Physical Sciences &amp; Department of Chemistry</b>	<b>2013 – 2016</b>
<b>Nominated for Emerging Innovation /</b>	<b>Early Career Innovator of the Year Award, UCI Applied Innovation</b>	<b>2018</b>
<b>Scialog Fellow</b>	<b>RCSA Scialog Initiative: Advanced Energy Storage</b>	<b>2017</b>
<b>Kavli Fellow</b>	<b>The Kavli Foundation</b>	<b>2017</b>
<b>Runner-Up for Tech Idol Award</b>	<b>The American Water Summit 2016</b>	<b>2016</b>
<b>Invited Talk, Poster Award</b>	<b>Gordon Research Conference, Electron Donor–Acceptor Interactions</b>	<b>2016</b>
<b>Group Safety Award</b>	<b>UCI, Department of Chemistry</b>	<b>2016</b>

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Postdoctoral

Physical Chemistry Division Postdoctoral Research Award	American Chemical Society, PHYS Division	2013
EERE Postdoctoral Research Award in PEC H <sub>2</sub> Production	Department of Energy, Office of EERE	2011 – 2013
Yale Climate & Energy Institute (YCEI) Postdoctoral Fellowship	Yale University, Climate & Energy Institute	(declined) 2010

Doctoral

Harry and Cleio Greer Fellowship (outstanding graduate student)	Johns Hopkins University, Chemistry Department	2009 – 2010
Invited Talk, Poster Award	Gordon Research Conference, Donor–Acceptor	2010
Invited Talk, Poster Award	Molecular Solar Fuels International Conference	2009
Talk, Eaton E. Lattman Graduate Student Lecture Series	Johns Hopkins University	2008
Ernest M. Marks Award (excellence in teaching & research)	Johns Hopkins University, Chemistry Department	2005

Masters

Poster Award at the Maryland Suppliers Night Meeting	Institute of Food Technologists	2005
Phi Kappa Phi National Honors Society	University of Maryland, College Park	2004 – 2005
Jacob K. Goldhaber Award	University of Maryland, College Park	2004
Tuition Remission Scholarship	University of Maryland, College Park	2003

Bachelors

Coaches Award (intangible asset to the team)	Towson University, Men's Soccer Team	1999
Mary Hudson Scarborough Award for Excellence in Math	Towson University, Mathematics Department	1999
Outstanding Member, Chapter Award	Towson University, Interfraternity Council	1999
“Outstanding Man of the Year” Award Finalist	Towson University	1998
Joyce C. Neubert Award in Mathematics	Towson University, Mathematics Department	1998
Golden Key National Honors Society	Towson University	1997 – 1999
Omicron Delta Kappa National Honors Society	Towson University	1997 – 1999
Honor Roll (all 7 semesters)	Towson University	1996 – 1999
Provost's Tuition Remission Scholarship	Towson University	1996 – 1999
Honor Roll (all 1 semesters)	Washington College	1995
Beneficial–Hodson Trust Tuition Remission Scholarship	Washington College	1995

**SCIENTIFIC PUBLICATIONS AND PATENTS****(Ardo Group members in bold)****Peer-reviewed Journal Articles (*Published or Accepted*) (#undergraduate students; ##high school students)**

- (45) Barrera, M.; **Ardo, S.**; Crivelli, I.; Loeb, B.; Meyer, G. J. *J. Photochem. Photobiol. A: Chem.* (2018) *364*, 510–515. The Role of Lithium Cations on the Photochemistry of Ruthenium Complexes in Dye-Sensitized Solar Cells: A TDDFT Study with the BCL Model.
- (44) **Ardo, S.\***; Fernandez Rivas, D.\*; Modestino, M.\*; Schulze Greiving, V.\*; et al. (45 total co-authors) *Energy Environ. Sci.*, *accepted*. Pathways to Electrochemical Solar-Hydrogen Technologies.
- (43) Dunfield, S. P.; Moore, D. T.; Klein T. R.; **Fabian, D. M.**; Christians, J. A.; Dixon, A. G.; Dou, B.; **Ardo, S.**; Beard, M. C.; Shaheen, S. E.; Berry, J. J.; van Hest, M. F. A. M. *ACS Energy Lett.* (2018) *3(1)*, 1192–1197, DOI: 10.1021/acseenergylett.8b00548. Curtailing Perovskite Processing Limitations via Lamination at the Perovskite/Perovskite Interface.
- (42) Gogoi, G.; **Keene, S.**; Patra, A. S.; Sahu, T. K.; **Ardo, S.**; Qureshi, M. *ACS Sus. Chem. Eng.* (2018) *6(5)*, 6718–6729, DOI: 10.1021/acssuschemeng.8b00512. A novel hybrid of g-C<sub>3</sub>N<sub>4</sub> and MoS<sub>2</sub> integrated onto Cd<sub>0.5</sub>Zn<sub>0.5</sub>S: Rational design with efficient charge transfer for enhanced photocatalytic activity.
- (41) Hanna, C.; **Sanborn, C. D.**; **Ardo, S.**; Yang, J. Y. *ACS Appl. Mater. Interfaces* (2018), *10(15)*, 13211–13217, DOI: 10.1021/acami.8b01219. Interfacial Electron Transfer of Ferrocene Immobilized onto Indium Tin Oxide Through Covalent and Non-Covalent Interactions.
- (40) **Chen, H.-Y.**; **Ardo, S.\*** *Nature Chem.* (2018) *10(1)*, 17–23, DOI: 10.1038/nchem.2892. Direct observation of sequential oxidations of a titania-bound molecular proxy catalyst generated through illumination of molecular sensitizers. (*Awarded Front Cover Art*)
- (39) **White, W.**; **Sanborn, C. D.**; **Fabian, D. M.**; **Ardo, S.\*** *Joule* (2018) *2(1)*, 94–109, DOI: 10.1016/j.joule.2017.10.015. Conversion of visible light into ionic power using photoacid-dye-sensitized bipolar ion-exchange membranes. (*Cell Press press release*)

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- (38) Bala Chandran, R.; Breen, S.; Shao, Y.; **Ardo, S.\***; Weber, A. Z.\* *Energy Environ. Sci.* (2018) 11(1), 115–135, DOI: 10.1039/C7EE01360D. Evaluating Particle-Suspension Reactor Designs for Z-Scheme Solar Water Splitting via Transport and Kinetic Modeling. (Featured in 2017 Energy and Environmental Science HOT articles; Awarded Front Inside Cover Art)
- (37) Tkacz, K.; Nitz, S. T. E.;<sup>##</sup> White, W.; **Ardo, S.\*** *J. Chem. Educ.* (2017) 94(11), 1733–1737, DOI: 10.1021/acs.jchemed.7b00021. Investigating Saltwater Desalination by Electrodialysis and Curriculum Extensions To Introduce Students to the Chemical Physics of Polymeric Ion-Exchange Membranes. (Included in Special Issue: Polymer Concepts across the Curriculum)
- (36) Oener, S. Z.; **Ardo, S.**; Boettcher S. W. *ACS Energy Lett.* (2017) 2(11), 2625–2634, DOI: 10.1021/acsenerylett.7b00764. Ionic Processes in Water Electrolysis: The Role of Ion-selective Membranes.
- (35) White, W.; Sanborn, C. D.; Reiter, R. S.; Fabian, D. M.; **Ardo, S.\*** *J. Am. Chem. Soc.* (2017) 139(34), 11726–11733, DOI: 10.1021/jacs.7b00974. Observation of Photoacidic Action from Photoacid-Modified Nafion Due to Light-Driven Ion Transport. (Awarded Front Cover Art; Featured in JACS Spotlights)
- (34) Fabian, D. M.; **Ardo, S.\*** *J. Mater. Chem. A* (2016) 4(18), 6837–6841, DOI: 10.1039/C6TA00517A (invited). Hybrid organic–inorganic solar cells based on bismuth iodide and 1,6-hexanediammonium dication. (Included in Emerging Investigators Special Issue and Themed Collection)
- (33) Xiang, C.; Weber, A. Z.; **Ardo, S.**; Berger, A.; Chen, Y.; Coridan, R.; Fountaine, K.; Haussener, S.; Hu, S.; Liu, R.; Modestino, M. A.; Shaner, M.; Singh, M.; Stevens, J.; Sun, K.; Walczak, K. *Angew. Chem. Int. Ed.* (2016), 55(42), 12974–12988, DOI: 10.1002/anie.201510463 and 10.1002/ange.201510463 (PI invited). Modeling, Simulation, and Implementation of Solar-Driven Water-Splitting Devices. (Awarded Cover Art)
- (32) Reiter, R. S.; White, W.; **Ardo, S.\*** *J. Electrochem. Soc.* (2016) 163(4), H3132–H3134, DOI: 10.1149/2.0201604jes. Electrochemical Characterization of Commercial Bipolar Membranes under Electrolyte Conditions Relevant to Solar Fuels Technologies. (Included in JES Focus Issue Honoring Allen J. Bard)
- (31) Velazquez, J. M.; John, J.; Esposito, D. V.; Pieterick, A.; Pala, R.; Sun, G.; Zhou, X.; Huang, Z.; **Ardo, S.**; Soriaga, M. P.; Brunschwig, B. S.; Lewis, N. S. *Energy Environ. Sci.* (2016) 9(1), 164–175. A Scanning Probe Investigation of the Role of Surface Motifs in the Behavior of p-WSe<sub>2</sub> Photocathodes.
- (30) Fabian, D. M.; Hu, S.; Singh, N.; Houle, F. A.; Hisatomi, T.; Domen, K.; Osterloh, F. E.; **Ardo, S.\*** *Energy Environ. Sci.* (2015) 8(10), 2825–2850, DOI: 10.1039/C5EE01434D. Particle Suspension Reactors and Materials for Solar-Driven Water Splitting. (Awarded Front Cover Art; Organizer of Special Issue and Web Collection)
- (29) Ager III, J. W.; Shaner, M.; Walczak, K.; Sharp, I. D.; **Ardo, S.** *Energy Environ. Sci.* (2015) 8(10), 2811–2824, DOI: 10.1039/C5EE00457H. Experimental Demonstrations of Spontaneous, Solar-Driven Photoelectrochemical Water Splitting. (Awarded Front Cover Art; Organizer of Special Issue and Web Collection)
- (28) **Ardo, S.**; Park, S.-H.; Warren, E. L.; Lewis, N. S. *Energy Environ. Sci.* (2015) 8(5), 1484–1492. Unassisted solar-driven photoelectrosynthetic H<sub>2</sub> splitting using membrane-embedded Si microwire arrays.
- (27) Bruce, J. P.; Asgari, S.; **Ardo, S.**; Lewis, N. S.; Oliver, D. R.; Freund, M. S. *J. Phys. Chem. C* (2014) 118(48), 27742–27748. Measurement of the Electrical Resistance of n-type Si Microwire/p-type Conducting Polymer Junctions for Use in Artificial Photosynthesis.
- (26) McKone, J. R.; **Ardo, S.**; Blakemore, J. D.; Bracher, P. J.; Dempsey, J. L.; Darnton, T. V.; Hansen, M. C.; Harman, W. H.; Rose, M. J.; Walter, M. G.; Dasgupta, S.; Winkler, J. R.; Gray, H. B. *Rev. Adv. Sci. Eng.* (2014) 3(4), 288–303 (PI invited). The Solar Army: A Case Study in Outreach Based on Solar Photoelectrochemistry.
- (25) Gaieck, W.; **Ardo, S.\*** *Rev. Adv. Sci. Eng.* (2014) 3(4), 277–287, DOI: 10.1166/rase.2014.1075 (invited). Challenges and Opportunities for Ion-Exchange Membranes in Solar Fuels Devices.
- (24) McDonald, M. B.; **Ardo, S.**; Lewis, N. S.; Freund, M. S. *ChemSusChem* (2014) 7(11), 3021–3027. Use of Bipolar Membranes for Maintaining Steady-State pH Gradients in Membrane-Supported, Solar-Driven Water Splitting.
- (23) Shaner, M. R.; Fountaine, K. T.; **Ardo, S.**; Coridan, R. H.; Atwater, H. A.; Lewis, N. S. *Energy Environ. Sci.* (2014) 7(2), 779–790. Photoelectrochemistry of core–shell tandem junction n-p<sup>+</sup>-Si/n-WO<sub>3</sub> microwire array photoelectrodes.
- (22) Nielander, A. C.; Bierman, M. J.; Petrone, N.; Strandwitz, N. C.; **Ardo, S.**; Yang, F.; Hone, J.; Lewis, N. S. *J. Am. Chem. Soc.* (2013) 135(46), 17246–17249. Photoelectrochemical Behavior of n-type Si(111) Electrodes Coated With a Single Layer of Graphene.
- (21) O'Donnell, R. M.; **Ardo, S.**; Meyer, G. J. *J. Phys. Chem. Lett.* (2013) 4(17), 2817–2821. Charge-Screening Kinetics at Sensitized TiO<sub>2</sub> Interfaces.
- (20) Pinaud, B. A.; Benck, J. D.; Seitz, L. C.; Forman, A. J.; Chen, Z.; Deutsch, T. G.; James, B. D.; Baum, K. N.; Baum, G. N.; **Ardo, S.**; Wang, H.; Miller, E.; Jaramillo, T. F. *Energy Environ. Sci.* (2013) 6(7), 1983–2000. Technical and economic feasibility of centralized facilities for solar hydrogen production via photocatalysis and photoelectrochemistry.

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- (19) Haussener, S.; Xiang, C.; Spurgeon, J. M.; **Ardo, S.**; Lewis, N. S.; Weber, A. Z. *Energy Environ. Sci.* (2012) 5(12), 9922–9935. Modeling, simulation, and design criteria for photoelectrochemical water-splitting systems. (*Future Energy Environ. Sci. Front Cover Art; Highlighted in Today at Berkeley Lab, LBNL Magazine on Jan. 16, 2013*)
- (18) Yahyaie, I.; **Ardo, S.**; Oliver, D. R.; Thomson, D. J.; Freund, M. S.; Lewis, N. S. *Energy Environ. Sci.* (2012) 5(12), 9789–9794. Comparison between the electrical junction properties of H-terminated and methyl-terminated individual Si microwire/polymer assemblies for photoelectrochemical fuel production.
- (17) Achey, D.; **Ardo, S.**; Meyer, G. J. *Inorg. Chem.* (2012) 51(18), 9865–9872. Increase in the Coordination Number of a Cobalt Porphyrin after Photo-Induced Interfacial Electron Transfer into Nanocrystalline TiO<sub>2</sub>.
- (16) Khnayzer, R. S.; Thompson, L. B.; Zamkov, M.; **Ardo, S.**; Meyer, G. J.; Murphy, C. J.; Castellano, F. N. *J. Phys. Chem. C* (2012) 116(1), 1429–1438. Photocatalytic Hydrogen Production at Titania-Supported Pt Nanoclusters that are Derived from Surface-Anchored Molecular Precursors.
- (15) Rowley, J. G.; **Ardo, S.**; Sun, Y.; Castellano, F. N.; Meyer, G. J. *J. Phys. Chem. C* (2011) 115(41), 20316–20325. Charge Recombination to Oxidized Iodide in Dye-Sensitized Solar Cells.
- (14) **Ardo, S.**; Achey, D.; Morris, A. J.; Abrahamsson, M.; Meyer, G. J. *J. Am. Chem. Soc.* (2011) 133(41), 16572–16580. Non-Nernstian Two-Electron Transfer Photocatalysis at Metalloporphyrin–TiO<sub>2</sub> Interfaces.
- (13) **Ardo, S.**; Meyer, G. J. *J. Am. Chem. Soc.* (2011) 133(39), 15384–15396. Characterization of Photoinduced Self-Exchange Reactions at Molecule–Semiconductor Interfaces by Transient Polarization Spectroscopy: Lateral Intermolecular Energy and Hole Transfer across Sensitized TiO<sub>2</sub> Thin Films.
- (12) Achey, D.; **Ardo, S.**; Xia, H.–L.; Siegler, M. A.; Meyer, G. J. *J. Phys. Chem. Lett.* (2011) 2(4), 305–308. Sensitization of TiO<sub>2</sub> by the MLCT Excited State of Co<sup>I</sup> Coordination Compounds.
- (11) Rowley, J. G.; Farnum, B. H.; **Ardo, S.**; Meyer, G. J. *J. Phys. Chem. Lett.* (2010) 1(20), 3132–3140 (*PI invited*). Iodide Chemistry in Dye-Sensitized Solar Cells: Making and Breaking I–I Bonds for Solar Energy Conversion.
- (10) Heuer, W. B.; Xia, H.–L.; Abrahamsson, M.; Zhou, Z.; **Ardo, S.**; Narducci Sarjeant, A. A.; Meyer, G. J. *Inorg. Chem.* (2010) 49(17), 7726–7734. Reaction of Ru<sup>II</sup> Diazafluorenone Compound with Nanocrystalline TiO<sub>2</sub> Thin Film.
- (9) Xia, H.–L.; Liu, F.; **Ardo, S.**; Narducci Sarjeant, A. A.; Meyer, G. J. *J. Photochem. Photobiol. A Chem.* (2010) 216(2–3), 94–103 (*PI invited*). Photoinduced Electron Transfer from Ru Am(m)ine Compounds with Low-Lying Ligand Field Excited States to Nanocrystalline TiO<sub>2</sub>.
- (8) **Ardo, S.**; Meyer, G. J. *J. Am. Chem. Soc.* (2010) 132(27), 9283–9285. Direct Observation of Photodriven Intermolecular Hole Transfer across TiO<sub>2</sub> Nanocrystallites: Lateral Self-Exchange Reactions and Catalyst Oxidation.
- (7) **Ardo, S.**; Sun, Y.; Castellano, F. N.; Meyer, G. J. *J. Phys. Chem. B* (2010) 114(45), 14596–14604 (*PI invited*). Excited-State Electron Transfer from Ruthenium–Polypyridyl Compounds to Anatase TiO<sub>2</sub> Nanocrystallites: Evidence for a Stark Effect.
- (6) Abrahamsson, M.; Johansson, P. G.; **Ardo, S.**; Kopecky, A.; Galoppini, E.; Meyer, G. J. *J. Phys. Chem. Lett.* (2010) 1(11), 1725–1728. Decreased Interfacial Charge Recombination Rate Constants with N3-Type Sensitizers.
- (5) **Ardo, S.**; Sun, Y.; Staniszewski, A.; Castellano, F. N.; Meyer, G. J. *J. Am. Chem. Soc.* (2010) 132(19), 6696–6709. Stark Effects after Excited-State Interfacial Electron Transfer at Sensitized TiO<sub>2</sub> Nanocrystallites.
- (4) Xia, H.–L.; **Ardo, S.**; Narducci Sarjeant, A. A.; Huang, S.; Meyer, G. J. *Langmuir* (2009) 25(23), 13641–13652. Photodriven Spin Change of Fe(II) Benzimidazole Compounds at Nanocrystalline TiO<sub>2</sub> Interfaces.
- (3) **Ardo, S.**; Meyer, G. J. *Chem. Soc. Rev.* (2009) 38(1), 115–164 (*PI invited*). Photodriven Heterogeneous Charge Transfer with Transition-Metal Compounds Anchored to TiO<sub>2</sub> Semiconductor Surfaces.
- (2) Staniszewski, A.; **Ardo, S.**; Sun, Y.; Castellano, F. N.; Meyer, G. J. *J. Am. Chem. Soc.* (2008) 130(35), 11586–11587. Slow Cation Transfer Follows Sensitizer Regeneration at Anatase TiO<sub>2</sub> Interfaces.
- (1) Liu, X.; **Ardo, S.**; Bunning, M.; Parry, J.; Zhou, K.; Stushnoff, C.; Stoniker, F.; Yu, L.; Kendall, P. *LWT – Food Sci. Technol.* (2007) 40(3), 552–557. Total phenolic content and DPPH<sup>•</sup> radical scavenging activity of lettuce (*Lactuca sativa* L.) grown in Colorado.

**Patents**

- (5) **Ardo, S.**;\* Schwartz, E.; Liu, J.; Cardon, J. M.; White, W.; Tkacz, K.; Renna, L. A.; Modestino, M.; Blanco, D. **Provisional Patent Application, University of California Irvine (2018) 2018-525-1, UCI 18.06 PROV. Devices for Integrated Solar Photodialysis of Salt Water.**
- (4) **Ardo, S.**;\* White, W.; Sanborn, C. D.; Cardon, J. M.; Reiter, R. S.; Schwartz, E. **PCT International Patent Application, University of California Irvine (2018) US20180065095 A1, 15/698,324 (Provisional patent (2016) 62/384,503). Light-Driven Ion-Pumping Membrane Systems.**

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- (3) **Ardo, S.**; Lewis, N. S. Patent, California Institute of Technology (2014) US20140061057 A1, 14/020,151 (Provisional patent (2012) 61/697,422). Light-Driven Hydroiodic Acid Splitting from Semiconductive Fuel Generator.
- (2) **Ardo, S.**; Shaner, M.; Coridan, R.; Strandwitz, N. C.; McKone, J. R.; Fountaine, K.; Atwater, H. A.; Lewis, N. S. Patent, California Institute of Technology (2013) US20130269761 A1, 13/856,353 (Provisional patents (2012) 61/619,661 and (2012) 61/621,819). Semiconductor Structures for Fuel Generation.
- (1) **Ardo, S.**; Lewis, N. S. Patent, California Institute of Technology (2013) US20130174896 A1, 13/539,335 (Provisional patent (2011) 61/503,083). A Tandem Solar Cell using a Silicon Microwire Array and Amorphous Silicon Photovoltaic Layer.

Book Chapters

- (1) **Ardo, S.**; Meyer, G. J. Book Chapter in *Energy Production and Storage: Inorganic Chemical Strategies for a Warming World, Encyclopedia of Inorganic Chemistry*, 2<sup>nd</sup> edition, John Wiley & Sons, Ltd. (2010) 265–300 (*PI invited*). Recent Advances in Photo-Initiated Electron Transfer at the Interface of Anatase TiO<sub>2</sub> Nanocrystallites and Transition-Metal Polypyridyl Compounds.

Miscellaneous

- (4) **West, W.**; Atwater, H.; Kubiak, C.; Amashukeli, X.; **Ardo, S.**; Arya, M.; Bates, C.; Brandon, E.; Cheng, W.-H.; Graf, J.; Grandidier, J.; Greenblatt, J.; Haber, J.; Hecht, M.; Hoffman, S.; Hogan, J.; Houle, F.; Jones, S.; Kass, D.; Law, M.; Mazaheripour, A.; McNicholas, B.; Meier, A.; Nielander, A.; Parkinson, B.; Ramachandran, A.; Sanders, G.; Schreiner, S.; Scott, V.; Stechel, E.; Walczak, K.; Weber, A.; Xiang, C.; Yang, J.; Zhanaidarova, A. Study Report, Keck Institute for Space Studies (2017). Addressing the Mars In Situ Resource Utilization Challenge: Production of Oxygen and Fuel from CO<sub>2</sub> using Sunlight.
- (3) Deutsch, T.; Wang, H.; Chen, Z.; **Ardo, S.**; Hu, S.; Sunkara, M.; Esposito, D.; Li, Y.; Boettcher, S. White Paper in *Materials for Photoelectrochemical Water Splitting*, DOE–EERE (2013). III–V Semiconductor Systems for High-Efficiency Solar Water Splitting Applications.
- (2) **Ardo, S.** Ph.D. Dissertation, Johns Hopkins University (2010) 3440664, 448 pages. Photoinduced Charge, Ion & Energy Transfer Processes at Transition-Metal Coordination Compounds Anchored to Mesoporous, Nanocrystalline Metal-Oxide Thin Films. (*copyright 2010*)
- (1) **Ardo, S.** Master's Thesis, University of Maryland, College Park (2005) 1428433, 132 pages. Characterization of Olive Oils Commercially Available in the United States. (*copyright 2006*)

**SCIENTIFIC PRESENTATIONS****Awarded and Invited Talks at Companies, Specialized Workshops, Symposia, and Summits**

- |  |        |
|--|--------|
| (127) Gerischer Electrochemistry Today 2018 Workshop and Symposium, Boulder, CO  | 8/2018 |
| (125) NSF Center for Chemical Innovation (CCI) – Solar, Capstone Meeting, Ventura, CA  | 7/2018 |
| (104) Apple, Membrane R&D Division, Sunnyvale, CA  | 2018   |
| (95) Resnick Young Investigators Symposium, California Institute of Technology, Pasadena, CA   | 2017   |
| (87) Research Corporation, Cottrell Scholars Conference, “More Viewpoints, Better Science”, Tucson, AZ   | 2017   |
| (85) NSF cCWCS Materials Science & Nanotechnology Workshop, Southwestern College, Chula Vista, CA  | 2017   |
| (79) Distinctive Voices Lecture Series, National Academies of Sciences, Engineering and Medicine, Irvine, CA   | 2017   |
| (74) Israeli–American Kavli Frontiers of Science Symposium, National Academy of Sciences, Irvine, CA   | 2017   |
| (72) The American Water Summit 2016, Technology and Finance: Tech Idol, Miami, FL  | 2016   |
| (62) Gordon and Betty Moore Foundation, Moore Inventor Fellows Interview, Palo Alto, CA  | 2016   |
| (61) Keck Institute for Space Studies Workshop, Addressing the Mars ISRU Challenge, Caltech, Pasadena, CA  | 2016   |
| (58) UC–Mexico Initiative: Materials for Energy Workshop, San Diego, CA  | 2016   |
| (53) UC, Santa Barbara, TeraWatts, TeraGrams, TeraLiters: Workshop on Challenges and Opportunities for Future Sustainable Production of Chemicals and Fuels, Santa Barbara, CA | 2016   |
| (49) Telluride Science Research Center (TSRC) Workshop, Solar Solutions to Energy and Environmental Problems, Telluride, CO  | 2015   |
| (3) Johns Hopkins University, Eaton E. Lattman Graduate Student Lecture Series ( <i>awarded; inaugural</i> ), Baltimore, MD  | 2008   |

**Invited Talks at Professional Meetings and Conferences**

- |  |        |
|--|--------|
| (128) International Conference on Solid State Protonic Conductors (SSPC-19) ( <i>keynote</i> ), Stowe, VT        | 9/2018 |
| (126) Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT8) ( <i>keynote</i> ), Yokohama, Japan | 8/2018 |

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(120-1) The Electrochemical Society (ECS) Spring National Meeting x2, Seattle, WA	2018
(110) American Chemical Society (ACS) Spring National Meeting, New Orleans, LA	2018
(106) Fusion Conference – Frontiers in Photochemistry, Cancun, Mexico	2018
(102) Joint Conferences of International Symposium on Recent Progress of Energy & Environ. Photocatalysis & China–Japan Bilateral Symposium on Intelligent Electrophotonic Mat. & Molecular Electronics, Tokyo, Japan	2017
(91) nanoGe Annual September International Conference, Barcelona, Spain	2017
(83) International Conference on Solid State Ionics (SSI-21) ( <i>keynote</i> ), Padua, Italy	2017
(80-1) ECS Spring National Meeting x2 ( <i>keynote x1</i> ), New Orleans, LA	2017
(70) American Institute of Chemical Engineers (AIChE) Annual National Meeting ( <i>plenary</i> ), San Francisco, CA	2016
(63) Gordon Research Conference, Electron Donor–Acceptor Interactions ( <i>awarded</i> ), Newport, RI	2016
(59) ECS Spring National Meeting, San Diego, CA	2016
(57) Materials Research Society (MRS) Spring National Meeting, Phoenix, AZ	2016
(47-8) ECS Spring National Meeting x2, Chicago, IL	2015
(43) MRS Spring National Meeting, San Francisco, CA	2014
(41) ACS Fall National Meeting ( <i>awarded</i> ), Indianapolis, IN	2013
(10) Gordon Research Conference, Electron Donor–Acceptor Interactions ( <i>awarded</i> ), Salve Regina Univ., Newport, RI	2010
(7) Molecular Science for Solar Fuels International Conference ( <i>awarded</i> ), Sigtuna, Sweden	2009

**Seminars at Educational Institutions, Research Institutes, Laboratories, and Centers**

(136) Harvard University, School of Engineering and Applied Sciences, Cambridge, MA	12/2018
(135) Massachusetts Institute of Technology, Department of Chemistry, Cambridge, MA	12/2018
(134) Yale University, Department of Chemistry, New Haven, CT	12/2018
(133) University of Louisville, Conn Center for Renewable Energy Research, Louisville, KY	11/2018
(132) Georgia Institute of Technology, Department of Materials Science and Engineering, Atlanta, GA	11/2018
(131) Stanford University, Department of Chemistry, Palo Alto, CA	10/2018
(130) University of California, Berkeley, Department of Chemical Engineering, Berkeley, CA	10/2018
(129) The University of Chicago, The Institute for Molecular Engineering, Chicago, IL	10/2018
(124) Universidad Nacional Autónoma de México, Instituto de Investigaciones en Materiales, Mexico City, Mexico	2018
(123) University of California, Santa Barbara, Department of Chemistry, Santa Barbara, CA	2018
(122) University of Washington, Clean Energy Institute, Seattle, WA	2018
(119) University of California, Davis, Department of Chemistry, Davis, CA	2018
(118) Northwestern University, Argonne–Northwestern Solar Energy Research (ANSER) Center, Symposium on Solar Fuels, Evanston, IL	2018
(117) University of Wisconsin, Department of Chemistry, Madison, WI	2018
(116) University of North Carolina, Chapel Hill, Department of Chemistry, Chapel Hill, NC	2018
(115) University of Illinois, Urbana–Champaign, Department of Chemistry, Champaign, IL	2018
(114) Washington University in St. Louis, Department of Chemistry, St. Louis, MO	2018
(113) The University of Texas at Austin, Department of Chemistry, Austin, TX	2018
(112) Michigan State University, Department of Chemistry, East Lansing, MI	2018
(111) University of Michigan, Department of Chemistry, Ann Arbor, MI	2018
(109) National Renewable Energy Laboratory, Golden, CO	2018
(108) University of Colorado, Department of Chemistry, Boulder, CO	2018
(105) Lawrence Berkeley National Laboratory, Joint Center for Artificial Photosynthesis, Berkeley, CA	2018
(103) The University of Tokyo, Department of Chemical System Engineering, Tokyo, Japan	2017
(101) Tokyo University of Science, Department of Applied Chemistry, Tokyo, Japan	2017
(100) University of Southern California, Department of Chemistry, Los Angeles, CA	2017
(99) University of California, San Diego, Department of Chemistry, San Diego, CA	2017
(98) San Diego State University, Department of Chemistry, San Diego, CA	2017
(97) University of California, Irvine, Dept. of Chemical Engineering and Materials Science, Irvine, CA	2017
(96) University of California, Los Angeles, Department of Chemistry, Los Angeles, CA	2017
(94) École Polytechnique Fédérale de Lausanne, Chemistry and Chemical Engineering, Lausanne, Switzerland	2017
(93) Helmholtz-Zentrum Berlin, Institute for Solar Fuels, Berlin, Germany	2017
(89) Molecular Foundry Annual User Meeting, Lawrence Berkeley National Laboratory, Berkeley, CA	2017
(88) California Institute of Technology, Joint Center for Artificial Photosynthesis, Pasadena, CA	2017

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(76) University of Utah, Department of Chemistry, Salt Lake City, UT	2017
(75) University of Arkansas, Department of Chemistry, Fayetteville, AR	2017
(73) Univ. of British Columbia, Dept. of Chem. and Biol. Eng., CHBE Research Day ( <i>keynote</i> ), Vancouver, Canada	2017
(71) University of California, Irvine, Department of Chemistry, Irvine, CA	2016
(69) California State University, Los Angeles, Department of Chemistry and Biochemistry, Los Angeles, CA	2016
(56) California State University, Fullerton, Department of Chemistry, Fullerton, CA	2016
(39) University of California, Irvine, Dept. of Chemical Engineering and Materials Science, Irvine, CA	2013
(36) University of Minnesota, Dept. of Chemical Engineering and Materials Science, Minneapolis, MN	2013
(35) Florida State University, Department of Chemistry, Tallahassee, FL	2013
(34) Drexel University, Department of Materials Science & Engineering, Philadelphia, PA	2013
(33) Wake Forest University, Department of Chemistry, Winston-Salem, NC	2013
(32) University of Minnesota, Department of Chemistry, Minneapolis, MN	2013
(31) University of Southern California, Department of Chemistry, Los Angeles, CA	2013
(30) University of Nebraska, Department of Chemistry, Lincoln, NE	2013
(29) University of Illinois, Urbana-Champaign, Department of Chemistry, Champaign, IL	2012
(28) University of California, Irvine, Department of Chemistry, Irvine, CA	2012
(27) Kansas State University, Department of Chemistry, Manhattan, KS	2012
(26) Boston College, Department of Chemistry, Chestnut Hill, MA	2012
(25) Massachusetts Institute of Technology, Department of Chemistry, Cambridge, MA	2012
(24) University of Washington, Department of Chemistry, Seattle, WA	2012
(23) University of Illinois, Chicago, Department of Chemistry, Chicago, IL	2012
(15) Carnegie Mellon University, Department of Materials Science and Engineering, Pittsburgh, PA	2011
(14) University of Wisconsin, Department of Chemistry, Madison, WI	2011
(13) University of Washington, Department of Chemistry, Seattle, WA	2011

**Invited Talks at UC Irvine and Related Events**

(90) Sustain OC: Water Solutions 2 Conference, Pitch, UC Irvine, Applied Innovation, The Cove, Irvine, CA	2017
(77) Orange County Men's Reading Club, Newport Beach, CA	2017
(65) UC Irvine, School of Physical Sciences Dean's Research Discussion Series, Irvine, CA	2016
(64) CleanTech OC: Water Solutions Conference, Pitch, UC Irvine, Applied Innovation, The Cove, Irvine, CA	2016
(50) UC Irvine, Department of Chemistry Scientific Advisory Board Meeting, Irvine, CA	2015
(42) UC Irvine, Department of Chemistry Friday Faculty Research Presentation, Irvine, CA	2013

**Invited Talks at Program Reviews, Meetings, or Retreats**

(82) DOE Hydrogen and Fuel Cells Program, Annual Merit Review, Washington, DC	2017
(60) DOE Hydrogen and Fuel Cells Program, Annual Merit Review, Washington, DC	2016
(40) DOE Joint Center for Artificial Photosynthesis (JCAP), Modeling & Simulation Meeting, Berkeley, CA	2013
(19) DOE JCAP, Prototyping Meeting, Berkeley, CA	2012
(16) NSF Center for Chemical Innovation (CCI) – Solar Retreat, Huntington Beach, CA	2012

**Contributed Talks at Professional Meetings and Conferences**

(107) American Physical Society (APS) March Meeting, Los Angeles, CA	2018
(92) nanoGe Annual September International Conference, Barcelona, Spain	2017
(86) International Solar Fuels Conference (ISF-2), UCSD, San Diego, CA	2017
(84) International Conference on Solid State Ionics (SSI-21), Padua, Italy	2017
(78) ACS Spring National Meeting, San Francisco, CA	2017
(66-8) Pacific Rim Meeting on Electrochemical and Solid-State Science (PRiME) x3, Honolulu, HI	2016
(54-5) ACS Spring National Meeting x2, San Diego, CA	2016
(51-2) The International Chemical Congress of Pacific Basin Societies (Pacifichem) x2, Honolulu, HI	2015
(46) MRS Spring National Meeting, San Francisco, CA	2015
(44-5) International Conf. on Photochemical Conversion and Storage of Solar Energy (IPS-20) x2, Berlin, Germany	2014
(38) MRS Spring National Meeting, San Francisco, CA	2013
(22) PRiME, Honolulu, HI	2012
(21) Gordon-Kenan Research Seminar, Electron Donor-Acceptor Interactions, Salve Regina University, Newport, RI	2012

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(20) IPS-19, Caltech, Pasadena, CA	2012
(18) Gordon Research Seminar, Renewable Energy: Solar Fuels, Lucca, Italy	2012
(17) ACS Spring National Meeting, San Diego, CA	2012
(11) ACS Fall National Meeting, Boston, MA	2010
(6) ACS Fall National Meeting, Washington, DC	2009
(5) ACS Green Chemistry & Engineering Conference, College Park, MD	2009
(1) SilverStream, SilverSummit National Meeting, Washington, DC	2000

**Contributed Talks at Workshops, Symposia, Program Reviews, and University Events**

(37) California Institute of Technology, Inorganic–Organometallics Seminar, Pasadena, CA	2013
(12) DOE Hydrogen and Fuel Cells Program, Annual Merit Review ( <i>PI invited</i> ), Arlington, VA	2011
(9) Johns Hopkins University, Ph.D. Dissertation Defense Seminar, Baltimore, MD	2010
(8) Johns Hopkins University, Department of Chemistry, Chemical Literature Seminar Series, Baltimore, MD	2010
(4) The College of William and Mary, Graduate Research Symposium, Williamsburg, VA	2009
(2) University of Maryland, College Park, M.S. Thesis Defense Seminar, College Park, MD	2005

**Posters (numbered separately)**

(31) <b>Research Corporation for Science Advancement, Scialog Initiative, Advanced Energy Storage, Tucson, AZ</b>	<b>11/2018</b>
(30) <b>DOE Hydrogen and Fuel Cells Program, Annual Merit Review, Washington, DC</b>	<b>2018</b>
(29) <b>TechConnect World Innovation Conference and Expo, Anaheim, CA</b>	<b>2018</b>
(28) <b>Research Corporation for Science Advancement, Scialog Initiative, Advanced Energy Storage, Tucson, AZ</b>	<b>2017</b>
(27) <b>Research Corporation, Cottrell Scholars Conference, “More Viewpoints, Better Science”, Tucson, AZ</b>	<b>2017</b>
(26) <b>Israeli–American Kavli Frontiers of Science Symposium, National Academy of Sciences, Irvine, CA</b>	<b>2017</b>
(25) <b>Gordon Research Conference, Electron Donor–Acceptor Interactions, Salve Regina University, Newport, RI</b>	<b>2016</b>
(24) <b>Keck Institute for Space Studies Workshop, Addressing the Mars ISRU Challenge, Caltech, Pasadena, CA</b>	<b>2016</b>
(23) <b>Lorentz Center Workshop in the Sciences, Pathways to Solar Hydrogen Technologies, Leiden, Netherlands</b>	<b>2016</b>
(22) <b>Gordon Research Conference, Renewable Energy: Solar Fuels, Lucca, Italy</b>	<b>2016</b>
(21) <b>Gordon Research Conference, Electrochemistry, Ventura, CA</b>	<b>2016</b>
(20) <b>DOE Hydrogen and Fuel Cells Program, Annual Merit Review, Arlington, VA</b>	<b>2015</b>
(19) <b>Gordon Research Conference, Electron Donor–Acceptor Interactions, Salve Regina University, Newport, RI</b>	<b>2014</b>
(18) <b>Gordon Research Conference, Renewable Energy: Solar Fuels, Ventura, CA</b>	<b>2014</b>
(17) <b>DOE Hydrogen and Fuel Cells Program, Annual Merit Review, Arlington, VA</b>	<b>2013</b>
(16) <b>DOE Office of Energy Efficiency and Renewable Energy, Postdoctoral Research Award Meeting, Golden, CO</b>	<b>2013</b>
(15) <b>MRS, Fall National Meeting, Boston, MA</b>	<b>2012</b>
(14) <b>Joint International Meeting of the Electrochemical Society of the U.S. &amp; Japan, Pacific Rim Meeting, Honolulu, HI</b>	<b>2012</b>
(13) <b>Gordon Research Conference &amp; Seminar, Electron Donor–Acceptor Interactions, Salve Regina Univ., Newport, RI</b>	<b>2012</b>
(12) <b>Gordon Research Conference &amp; Seminar, Renewable Energy: Solar Fuels, Lucca, Italy</b>	<b>2012</b>
(11) <b>DOE Office of Energy Efficiency and Renewable Energy, Postdoctoral Research Award Meeting, Washington, DC</b>	<b>2012</b>
(9-10) <b>NSF CCI – Solar Retreat, Huntington Beach, CA</b>	<b>2012</b>
(8) <b>ACS Fall National Meeting, Boston, MA</b>	<b>2010</b>
(7) <b>Gordon Research Conference, Electron Donor–Acceptor Interactions, Salve Regina University, Newport, RI</b>	<b>2010</b>
(6) <b>Molecular Science for Solar Fuels International Conference, Sigtuna, Sweden</b>	<b>2009</b>
(5) <b>Gordon Research Conference, Electron Donor–Acceptor Interactions, Salve Regina University, Newport, RI</b>	<b>2008</b>
(4) <b>Molecular and Quantum-Dot Solar Energy Workshop (<i>inaugural</i>), Estes Park, CO</b>	<b>2007</b>
(3) <b>Institute of Food Technologists, Maryland Suppliers Night Meeting (<i>award-winning</i>), Lutherville, MD</b>	<b>2005</b>
(2) <b>University of Maryland, College Park, Biosciences Research and Technology Review Day, College Park, MD</b>	<b>2004</b>
(1) <b>ACS Fall National Meeting, Philadelphia, PA</b>	<b>2004</b>

**PROFESSIONAL SERVICE****Scientific Workshop Organizer, Participant, and Moderator****Workshop Organizer**

<b>Israeli–American Kavli Frontiers of Science Symposium, Israel Academy of Science and Humanities Jerusalem, Israel (co-organizer, Chemistry section)</b>	<b>9/2019</b>
<b>IUPAC 2019: 50<sup>th</sup> General Assembly and 47<sup>th</sup> World Chemistry Congress, Symposium</b>	<b>7/2019</b>

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Paris, France (co-organizer, “Turning Solar Energy to Fuels via Artificial Photosynthesis”) 2017 & 4/2019  
 American Chemical Society (ACS) Spring National Meeting, Catalysis Division, Symposium  
 Orlando, FL (co-organizer, “Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis”) 8/2018  
 Gerischer Electrochemistry Today 2018 Workshop and Symposium  
 Renewable and Sustainable Energy Institute, Boulder, CO (organizing committee member, ~80 participants) 2016  
 Pathways to Solar Hydrogen Technologies, Lorentz International Center for Workshops in the Sciences  
 Leiden, Netherlands (co-organizer, ~50 participants) 2016  
 Bipolar Membranes in Solar Devices, NSF Center for Chemical Innovation – Solar  
 Newport Beach, CA (sole organizer, 8 participants) 2016

**Invited Workshop Participant**

Research Corporation for Science Advancement, Scialog Initiative, Advanced Energy Storage, AZ 2017 & 11/2018  
 Brainstormed and discussed future options for advancing energy storage technologies  
 Keck Institute for Space Studies Workshop – Addressing the Mars ISRU Challenge x2, Caltech, Pasadena, CA 2016  
 Brainstormed and discussed means for producing oxygen and fuel from CO<sub>2</sub> using sunlight and resources on Mars  
 Energy Materials Network, Advanced Water Splitting Materials Workshop, DOE, EERE 2016  
 Discussed concepts that should be included in future FOAs on these materials classes  
 New Frontiers Workshop - TeraWatts, TeraGrams, TeraLiters, Univ. of CA, Santa Barbara (UCSB) 2015 & 2016  
 Brainstormed and discussed current and future sustainable materials and energy sources  
 Photoelectrochemical Water Splitting Planning Meeting, DOE, EERE 2015  
 Discussed a road-map for future R&D and demonstration systems as follow-up work from large-scale PEC efforts  
 SunShot Grand Challenge Summit, DOE, Office of EERE 2014  
 Brainstormed about new directions for the SunShot Program beyond 2020 goals  
 New Frontiers in Sustainable Fuels and Chemicals, UCSB 2014  
 Brainstormed and discussed current and future sustainable materials and energy sources  
 REBELS Program, DOE Advanced Projects Research Agency – Energy (ARPA-E) 2013  
 Brainstormed about new intermediate temperature fuel cell technologies with DOE–ARPA-E program managers  
 Photoelectrochemical Working Group, DOE (~10 times) 2011 – present  
 Discussed government publications that the group will write to disseminate information to the public

**Invited Symposia Session Moderator**

Tokyo Conference on Advanced Catalytic Science and Technology, Yokohama, Japan 8/2018  
 Fusion Conference – Frontiers in Photochemistry, Cancun, Mexico 2018  
 nanoGe Annual September International Conference, Barcelona, Spain 2017  
 International Conference on Solid State Ionics (SSI-21) International Meeting, Padua, Italy 2017  
 American Chemical Society Spring National Meeting, Symposium: Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis (x2), San Francisco, CA 2017  
 Electrochemical Society Spring National Meeting, Symposium L07: Renewable Fuels via Artificial Photosynthesis or Electrolysis, San Diego, CA 2016  
 Energy Materials Network, Advanced Water Splitting Materials Workshop, DOE, EERE, Stanford Univ., CA 2016  
 Materials Research Society Meeting, Symposium EE2: Advancements in Solar Fuels Generation – Materials, Devices and Systems, Phoenix, AZ 2016  
 Telluride Science Research Center Workshop – Solar Solutions to Energy and Environmental Problems, CO 2015  
 Southern California Inorganic Photochemistry (SCIP) Symposium, Catalina Island, CA 2014  
 International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-20),  
 Photoelectrochemical Materials, Berlin, Germany 2014  
 Materials Research Society Meeting, Symposium A: Film-Silicon Science and Technology, San Francisco, CA 2014  
 SCIP Symposium, Catalina Island, CA 2013

**Formal Research Mentor**

University of California, Irvine (51, currently 16)

Visiting Scholars (2, currently 0) – Alumni: *Mohammad Qureshi* (2017; Fulbright–Nehru Fellow); *Zhangjing Zhang* (2015 – 2016)

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Postdoctoral Scholars (5, currently 0) – Alumni: Rohini Bala Chandran (2017); Hsiang-Yun Chen (2013 – 2015); Jingyuan Liu (2017 – 2018); Lawrence Renna (2017 – 2018); Houman Yaghoubi (2015 – 2017; UCI Tom Angell Fellow)

Graduate Students (21, currently 13) – Rohit Bhide (Chemistry, 2017 – present); Joseph Cardon (Chemistry; 2014 – present; Conference Travel Award; NSF GRFP Fellow; DOD SMART Scholarship Awardee; UCI Rowland Fellow); David Fabian (Chemistry; 2014 – present; NSF GRFP Fellow; DOE SCGSR Awardee); Nazila Farhang (Chemical Engineering; 2018 – present); Bill Gaieck (Materials Science and Engineering; 2014 – present; GRC Carl Storm Underrepresented Minority Fellow); Sam Keene (Physics; 2016 – present); Jen Logan (Chemistry; 2013 – present; UCI Gebel Award; NSF GRFP Fellow); Simon Luo (Chemistry; 2017 – present); Leanna Schulte (Chemistry; 2018 – present); Eric Schwartz (Materials Science and Engineering; 2017 – present); Margherita Taddei (visiting student from the University of Bologna, Italy); Kevin Tkacz (Materials Science and Engineering; 2015 – present); Will White (Chemistry; 2014 – present; Pittcon 2018 Invited Talk); Alumni: Ardalan Fathabadi (M.S. Chemical Engineering; 2015 – 2016); Masih Jorat (M.S. Chemical Engineering; 2015 – 2016); Jingshu Ma (M.S. Chemical Engineering; 2014 – 2015); Claudia Ramirez (Chemistry; 2014 – 2016; UCI Contributions to Education by a Chemistry Department TA Award; UCI Pedagogical Fellow; UCI Gebel Award); Ron Reiter (M.S. Chemistry; 2014 – 2015; UCI Chancellor's Fellow); Chris Sanborn (Ph.D. Chemistry; 2013 – 2017); Yuanxun Shao (M.S. Chemical Engineering; 2015 – 2016); Vijay Weerasinghe (Chemical Engineering; 2015 – 2016)

Postbaccalaureate Scholars (1, currently 0) – Alumnus: Sasuke Breen (2014 – 2015)

Undergraduate Students (18, currently 3) – Garrick Hogrebe (undecided; 2018 – present); Baldwin Liwanag (Chemistry; 2017 – present; UCI SURP Fellow); Anni Zhang (Chemical Engineering & Electrical Engineering; 2016 – present; UCI SURP Fellow); Alumni: Jackie Angsono (Chemistry; 2014 – 2016; UCI Gebel Award; UCI UROP Fellow (x2)); Dezhang (Mike) Chen (Chemistry; 2017 – 2018; UCI SURP Fellow); Jennifer Conde (UC Berkeley Energy Engineering; 2017); Nancy Estrada (Chemistry; 2014 – 2015; UCI UROP Fellow); John Hylak (UC Santa Barbara Chemical Engineering; 2017); Greg Krueper (Applied Physics & Electrical Engineering; 2016 – 2017; UCI UROP Fellow; Tau Beta Pi Scholarship; UCI Gebel Award; DOE SULI); Connie Loo (Physics; 2015 – 2016); Diana Luong (Chemistry; 2015 – 2016; UCI UROP Fellow); Victor Macedonio (Chemistry; 2013 – 2014); Tabitha Miller (Chemistry; 2014 – 2015; UCI SURP Fellow; UCI UROP Fellow (x2)); Sabeena Sebastian (Chemical Engineering; 2015 – 2016; UCI UROP Fellow (x2)); Jerry Siu (Chemical Engineering; 2015); Andy Trinh (Chemistry; 2016 – 2018; UCI SURP Fellow); Mike Valenzuela (Chemistry; 2017 – 2018); Stephanie Yeh (Materials Science and Engineering; 2016 – 2017)

High School Students (4, currently 0) – Alumni: Jennifer McCleary (2014 – 2015); Jonathan Moon (2016 – 2017); Sam Nitz (2016); William Sheu (2016 – 2017)

Caltech (4)

Undergraduate Students (4) – Andrew Meng (2013 senior thesis; 2 quarters); Rasmus Nørregård (2012 senior foreign exchange student; 1 quarter); Marino DiFranco (2012 junior student and summer fellow; 2 quarters); Ben Lieber (2011 freshman summer fellow; 1 quarter)

Johns Hopkins University (1)

Undergraduate Students (1) – Siah-Hong (Mark) Tan (2009 freshman student; 1 semester)

**Memberships**Service Committees

UC Irvine School of Physical Sciences Strategic Plan Committee	2017 – present
UC Irvine Laser and Spectroscopy Facility Oversight Committee	2017 – present
UC Irvine E.K.C. Lee Distinguished Lectureship Committee and Emcee	2015 – present
UC Irvine Chemistry Graduate Admissions and Graduate Recruiting Committee	2013 – present
UC Irvine Chemistry Tenure, and Academic Personnel Review Committees	2013 – present
UC Irvine Oral Examination Committee Member	
Chemistry, Chemical Engineering, Materials Science and Engineering, Physics, ChaMP	2013 – present
UC Irvine Physical Chemistry Seminar Committee, Chair	2017
UC Irvine Summer Materials Program, Co-Chair	2017
UC Irvine Materials Chemistry Faculty Recruiting Committee	2017
UC Irvine Laser and Spectroscopy Facility Oversight Committee, Chair	2016 – 2017
UC Irvine Physical Chemistry Seminar Committee, Co-Chair	2016 – 2017

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UC Irvine Inorganic Chemistry Faculty Recruiting Committee 2013 – 2015  
 UC Irvine Inorganic Chemistry Seminar Committee, Co-Chair 2014 – 2016

Other

ACS Applied Energy Materials Editorial Advisory Board 2018 – present  
 University of California Innovative Materials for Energy Working Group 2016 – present  
 UC Irvine Center for Solar Energy 2014 – present  
 UC Irvine Chemical and Materials Physics (ChaMP) Graduate Program 2013 – present  
 The Electrochemical Society 2012 – present  
 U.S. Department of Energy, Photoelectrochemical Working Group 2011 – present  
 American Chemical Society 2004 – present  
 American Institute of Chemical Engineers 2016 – 2017  
 Materials Research Society 2012 – 2017

Education and OutreachCourse Implementation and Curriculum Development

Instructor, Electrochemistry (CHEM 248 graduate-level course), UC Irvine Winter 2015, 2017, Spring 2019  
 Developed and instructed video-recorded lectures to be posted online and a laboratory component to the course  
 Instructor, Photochemical Energy Storage (CHEM 252 special topics graduate-level course), UC Irvine Summer 2018  
 Instructor, General Chemistry 2 (CHEM 1B freshman undergraduate-level course), UC Irvine Winter 2018  
 Instructor, Majors Quantitative Analytical Chemistry / Honors General Chemistry Laboratory Spring 2014, 2016  
 (CHEM M3LC/H2LC freshman undergraduate-level course), UC Irvine  
 Instructor, Fundamentals of Quantum Mechanics (CHEM 231A graduate-level course), UC Irvine Fall 2013, 2014  
 Guest Lecturer, Majors Quantitative Analytical Chemistry / Honors General Chemistry, UC Irvine Spring 2014  
 Instructed one class on electrochemistry for a freshman undergraduate course  
 Guest Lecturer, Solar Energy Activity Lab Program, NSF Center for Chemical Innovation – Solar, Caltech 2013  
 Developed and instructed one class on electrochemistry for an advanced program for high school students  
 Guest Lecturer, Energy Engineering course, Department of Materials Science & Engineering, Johns Hopkins University 2009  
 Developed and instructed one class on dye-sensitized solar cells for an upper-level undergraduate course  
 Curriculum Developer & Instructor, Baltimore City College High School (2 semesters, 5 months each) 2002 – 2003  
 Proposed, developed, and implemented a new Java computer programming course

Public Outreach Activities**STEM Activity Organizer/Presenter/Participant**

Conducted a STEM laboratory activity where students build dye-sensitized solar cells, desalinate salt water by electrodialysis, and learn about solar energy and clean water

- Laboratory Experiments & Activities in the Physical Sciences (LEAPS) 2013 – 2017  
 10 events, 12 total sessions each with ~15–20 middle-school students
- American Association of University Women (AAUW) Tech Trek 2015, 2017, 2018  
 3 events, 11 total sessions each with ~15–20 middle-school girls
- AP Chemistry and Earth Science Classes from Cornelia Connelly High School, ~15 high-school girls 2016
- Equitable Science Curriculum Integrating Arts in Public Education (ESCAPE) 2014, 2016  
 2 events, 3 total sessions each with ~15–20 elementary-school teachers
- Earth Week Poster Presentations promoting research in the UCI Center for Solar Energy (2 sessions) 2016
- DOE Solar Decathlon Presentations promoting UCI at the Orange County Great Park, ~15 families 2013
- Sustainable Sundays event at the Los Angeles Natural History Museum for ~60 families 2012
- Earth Day event at East Los Angeles College for ~400 middle-school and high-school students 2012
- The Chemistry I class at the Institute for Educational Advancement (seven students, ages 7 – 12) 2011
- Entering community college students from East Los Angeles College (~40 students) 2011

Outreach Lecturer/Advocate, NSF Center for Chemical Innovation – Solar, Caltech  
 Presented a lecture/demonstration to promote dye-sensitized solar cell outreach activities

- NSF Center for Chemical Innovation – Solar Site Review 2012
- NSF Center for Chemical Innovation – Solar Annual Retreat (> 100 attendees) 2012
- California Science Teachers Association Science Education Conference (> 50 science teachers) 2011

Workshop Presentation/Lab Leader, NSF Center for Chemical Innovation – Solar, Caltech (7 times) 2011 – 2012

\* Work while I was employed by UC Irvine is in bold typeface

**SHANE ADAM ARDO, Ph.D.**

Assistant Professor at the University of California, Irvine  
 ardo@uci.edu :: http://www.chem.uci.edu/~ardo/ :: 949-824-3796

Led workshops for secondary-school teachers on how to implement solar energy activities into their STEM curricula  
 Workshop Laboratory Assistant, NSF Center for Chemical Innovation – Solar, Caltech (6 times) 2010 – 2013  
 Taught and trained local secondary-school teachers about solar energy and how to implement it into their curricula

**Special General Presentations****E.K.C. Lee Distinguished Lectureship Emcee**

**Oversaw and delivered the program at the annual UC Irvine Department of Chemistry Event (4 times)**

- UC Irvine (~300 attendees each time) **2015 – present**

**“Living in Irvine” Welcome Talk**

**Presented a talk during Chemistry Graduate Student Recruitment Visitation Days (11 times)**

- UC Irvine Department of Chemistry (~30 graduate students each time) **2014 – present**

**Teaching Assistant Training Talk**

**Presented a talk during Chemistry Graduate Student Orientation (1 time)**

- UC Irvine Department of Chemistry (~50 graduate students) **2017**

**Research and Life’s Experience Lecture**

**Participated in a three-person panel discussion on maintaining a healthy work–life balance**

- Strategies for Success in Academia, UC Irvine Postdoctoral Association Board **2017**

**Presented a lecture on my research and personal path to science to excite college students about STEM**

- Southern California Undergraduate Symposium (~50 undergraduate students) **2016**
- Chemistry Club Speaker Series, East Los Angeles College (~40 students) **2012**

**Participated in a three-person panel discussion on experiences as a candidate for faculty jobs**

- UC Irvine Career Center (~30 postdoctoral scholars and graduate students) **2013**

**Miscellaneous**

Professional Soccer Tryout, Cleveland Force Indoor Soccer Team 2004

Varsity (Walk-on) Athlete, Men’s Division 1A Soccer Team, Towson University (1 season) 1998 – 1999

President, Founder, and Treasurer, Sigma Chi Fraternity, Kappa Pi Chapter, Towson University 1997 – 1999