

JORDAN E. KATZ

Associate Professor
Dept. of Chemistry and Biochemistry
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EMPLOYMENT

DENISON UNIVERSITY

Associate Professor 2017–Present
Assistant Professor 2010–2017
Department of Chemistry and Biochemistry

UNIVERSITY OF CALIFORNIA BERKELEY AND LAWRENCE BERKELEY NATIONAL LABORATORY

Postdoctoral Scholar 2007–2010
Department of Physics (UCB) and Earth Sciences Division (LBNL)

EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY

Ph.D. Chemistry 2008
Dr. Nathan S. Lewis
“Metal Oxide-Based Photoelectrochemical Cells for Solar Energy Conversion”

REED COLLEGE

B. A. Chemistry, Phi Beta Kappa 1999
Dr. Daniel Gerrity
“The Enigma at 1300 Wavenumbers: Resonance Raman Spectroscopy of Chromium Hexacarbonyl” (senior thesis)

PUBLICATIONS AND PATENTS

- Ishaq, S.; Sikora, A.; Scheidler, N.; Hambleton, C.; Katz, J. E. Enhancement of Water Oxidation Photocurrent for Iron Oxide Thin Films Electrodeposited in the Presence of Polyvinylpyrrolidone, *Journal of the Electrochemical Society* **2016**, *163*, F1330–F1336.
- Katz, J. E.; Gingrich, T. R.; Lewis, N. S. High-Throughput Screening and Device for Photocatalysts. U.S. Patent 9,126,175, September 8, **2015**.
- Gilbert, B.; Katz, J. E.; Huse, N.; Zhang, X.; Frandsen, C.; Falcone, R. W.; Waychunas, G. A. Ultrafast Electron and Energy Transfer in Dye-Sensitized Iron Oxide and Oxyhydroxide Nanoparticles. *Physical Chemistry Chemical Physics* **2013**, *15*, 17303–17313.
- Katz, J. E.; Zhang, X.; Attenkofer, K.; Chapman, K.; Frandsen, C.; Zarzycki, P.; Rosso, K.; Falcone, R.; Waychunas, G. A.; Gilbert, B. Electron Small Polarons and Their Mobility in Iron (Oxyhydr)oxide Nanoparticles. *Science* **2012**, *337*, 1200–1203.
- Gilbert, B.; Katz, J. E.; Rude, B.; Glover, T.; Hertlein, M.; Kurtz, C.; Zhang, X. Thin Water Film Formation on Metal Oxide Crystal Surfaces, *Langmuir* **2012**, *28*, 14308–14312.

- Gilbert, B.; Katz, J. E.; Denlinger, J. D.; Yin, Y; Falcone, R.; Waychunas, G. A. Soft X-ray Spectroscopy Study of the Electronic Structure of Oxidized and Partially Oxidized Magnetite Nanoparticles. *Journal of Physical Chemistry C* **2010**, *114*, 21994-22001.
- Katz, J. E.; Gilbert, B.; Zhang, X.; Attenkofer, K.; Falcone, R.; Waychunas, G. A. Observation of Transient Iron(II) Formation in Dye-Sensitized Iron Oxide Nanoparticles by Time-Resolved X-ray Spectroscopy. *Journal of Physical Chemistry Letters* **2010**, *1*, 1372-1376.
- Paulauskas, I. E.; Katz, J. E.; Jellison, G. E. Jr.; Lewis, N. S.; Boatner, L.; Brown, G. Growth, Characterization, and Electrochemical Properties of Doped n-type KTaO₃ Photoanodes. *Journal of the Electrochemical Society* **2009**, *156*, B580-B587.
- Katz, J. E.; Gingrich, T. R.; Santori, E. A.; Lewis, N. S. Combinatorial Synthesis and High-Throughput Photovoltage and Photocurrent Screening of Mixed-Metal Oxides for Photoelectrochemical Water Splitting. *Energy & Environmental Science* **2009**, *2*, 103-112.
- Smeigh, A. L.; Katz, J. E.; Brunschwig, B. S.; Lewis, N. S.; McCusker, J. K. Effect of the Presence of Iodide on the Electron Injection Dynamics of Dye-Sensitized TiO₂-based Solar Cells. *Journal of Physical Chemistry C* **2008**, *112*, 12065-12068.
- Paulauskas, I. E.; Katz, J. E.; Jellison, G. E. Jr.; Lewis, N. S.; Boatner, L. Photoelectrochemical Studies of Semiconducting Photoanodes for Hydrogen Production via Water Dissociation *Thin Solid Films* **2008**, *516*, 8165-8178.
- Kilsa, K., Mayo, E. I., Katz, J. E., Brunschwig, B. S.; Gray, H. B.; Lewis, N. S.; Winkler, J. R. Anchoring Group and Auxiliary Ligand Effects on the Binding of Ruthenium Complexes to Nanocrystalline TiO₂ Photoelectrodes *Electrochemical Society Proceedings* **2004**, *PV2004-22*, 49-63.

PRESENTATIONS

- Faculty Research Dinner, Denison University, Granville, OH, 2/2016
- Invited Keynote Speaker, Licking County Solar Conference, Newark, OH, 10/2015
- Physics Department Seminar, Denison University, Granville, OH, 1/2015
- American Chemical Society Meeting, Dallas, TA, 3/2014
- Homestead Seminar, Denison University, Granville, OH, 3/2014
- Inter-American Photochemical Society Meeting, Sarasota, FL, 1/2013
- Global Studies Seminar, Denison University, Granville, OH, 9/2012
- Denison Scientific Association, Denison University, Granville, OH, 11/2010
- Invited Speaker, Geological Society of America Meeting, Portland, OR, 10/2010
- Invited Speaker, American Chemical Society Meeting, San Francisco, CA, 3/2010
- Invited Speaker, Reed College, Chemistry Department, Portland, OR, 9/2008
- Public Thesis Defense, California Institute of Technology, Pasadena, CA, 10/2008
- Lawrence Berkeley National Laboratory, Berkeley, CA, 7/2007
- Materials Research Society Meeting, San Francisco, CA, 4/2007
- NanoX Conference, Global School for Advanced Studies, Taipei, Taiwan, 9/2006
- Chemistry Dept. Seminar, California Institute of Technology, Pasadena, CA, 1/2005
- Southern California Inorganic Photochemistry Conference, Catalina Island, CA, 9/2004
- Electrochemical Society Meeting, San Antonio, TX, 5/2004
- Southern California Inorganic Photochemistry Conference, Catalina Island, CA, 5/2003

SERVICE, FELLOWSHIPS, AND HONORS

- Campus Sustainability Committee, Denison, Chair, 2014 –
- University Honor Committee, Denison, 2012 –
- Outdoors Club, Faculty Advisor, Denison, 2012 –
- Reviewer, National Science Foundation, 2011–
- Environmental Studies Program Committee, Denison, 2011 –
- University Council, Denison, 2013 & 2015–2016
- Denison Chemical Society, Faculty Advisor, Denison, 2014–2016
- University Finance Committee, Denison, Vice-Chair & Chair, 2012–2106
- Bartlett Family Pre-Tenure Fellow, Denison, 2014–2015
- AED Pre-Health Honor Society, Faculty Advisor, Denison, 2011–2015
- Reviewer, *Journal of the Electrochemical Society*, 2015
- Anderson Scholarship for Excellence in Science Committee, Denison, 2012, 2014
- Reviewer, *ACS Catalysis*, 2013
- Henne Research Competition, Judge, The Ohio State University, 2012–2013
- Dept of Chemistry and Biochemistry, Seminar Coordinator, Denison, 2011–2012
- Denison Scientific Association, Seminar Coordinator, Denison, 2011–2012
- Reviewer, *Journal of Colloid and Interface Science*, 2009
- SLAC-Stanford-NREL Energy Summer School Scholar, Stanford, CA, 2009
- Caltech Program for Effective Teaching Certificate, Caltech, 2007
- Global School for Advanced Studies Scholar, Solar Cell Research, Taiwan, 2006
- Fulbright Fellowship, Switzerland, 1999–2000
- Phi Beta Kappa, Reed College, 1999

RESEARCH EXPERIENCE

UNIVERSITY OF CALIFORNIA BERKELEY

Postdoctoral Scholar 2007–2010

Dr. Roger Falcone, Dr. Glenn Waychunas, Dr. Benjamin Gilbert
Ultrafast Imaging of Electronic and Atomic Redistribution During Electron-
Transfer Reactions at Iron Oxide Nanoparticle Surfaces

CALIFORNIA INSTITUTE OF TECHNOLOGY

Ph.D. Candidate 2000–2007

Dr. Nathan Lewis
Fundamental Studies of the Thermodynamics and Kinetics of Electron
Transfer in Dye-Sensitized Solar Cells

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Fulbright Scholar, Switzerland 1999–2000

Dr. Thomas Rizzo
Gas-Phase Temperature Distributions by IR Cavity Ring-Down Spectroscopy

REED COLLEGE

Research Assistant 1998–1999

Dr. Daniel Gerrity
Resonance Raman Spectroscopy of Chromium Hexacarbonyl

Research Assistant 1997
 Dr. Alan Shusterman
 Ab Initio Hartree Fock and DFT Modeling of oxaziridines

STANFORD UNIVERSITY

Research Assistant 1998
 Dr. Malinda Pauly
 Novel Materials and Technology for Interactive Museum Exhibits

TEACHING EXPERIENCE

DENISON UNIVERSITY

Assistant & Associate Professor 2010–present
 Principles of Chemistry: Atoms and Molecules (Chem 131)
 Structure and Reactivity of Organic Molecules (Chem 132)
 Intermediate Analytical Chemistry (Chem 331)
 Chemistry & Materials of Sustainable Energy (Chem 428)
 Instrumental Analysis (Chem 431)

LAWRENCE HALL OF SCIENCE, UC BERKELEY

Curriculum Reviewer 2008–2009
 Science Education for Public Understanding Program (SEPUP)

PH EDUCATIONAL CONSULTANTS

Math and Chemistry Tutor 2004–2007
 AP Chemistry, Calculus, Pre-Calculus, Algebra II

CALIFORNIA INSTITUTE OF TECHNOLOGY

Recitation Teaching Assistant 2001–2006
 General Chemistry (Ch1a, Ch1b)

Teaching Assistant 2003
 The Physical Description of Chemical Systems (Ch21c)

Head Grader 2000–2001
 Fundamental Techniques of Experimental Chemistry (Ch3a)

REED COLLEGE

Chemistry Tutor 1998–1999
 General and Organic, Physical Chemistry Lab, and Statistical Thermodynamics

Science Center Tutor 1998–1999
 General and Organic Chemistry

Laboratory Teaching Assistant 1999
 General Chemistry

Teaching Assistant 1998
 Instrumentation

French Tutor 1997–1999
 First- and Second-Year French