William C. Chueh

Materials Science & Engineering, Stanford University
137 Durand, 496 Lomita Mall, Stanford CA 94305
Tel: 650-725-7515 Email: wchueh@stanford.edu
http://chuehlab.stanford.edu/

Education

Ph.D. Materials Science, California Institute of Technology	2010
M.S. Materials Science, California Institute of Technology	2007
B.S. with Honors, Applied Physics, California Institute of Technology	2005

Professional Experience

Assistant Professor, Materials Science & Engineering, Stanford University	2012 - Present
Center Fellow, Precourt Institute for Energy, Stanford University	2012 - Present
Truman Distinguished Postdoctoral Fellow Materials Physics, Sandia National Laboratories	2010-2012

Honors & Awards

International Society for Solid State Ionics Young Scientist Award	2013
Stanford Society of Women Engineers Professor of the Year Teaching Award	2013
MIT Technology Review TR35 "Top 35 Innovators Under the Age of 35"	2012
Caltech Demetriades-Tsafka-Kokkalis Prize in Energy	2011
President Harry S. Truman Distinguished Postdoctoral Fellowship Sandia National Laboratories	2010
NSF ICMR International Research Fellowship Award	2009
American Vacuum Society Thin Film Division Graduate Student Award	2009
Josephine de Karman Fellowship	2009
Lemelson-MIT Caltech Student Prize (2nd Place)	2009
American Ceramics Society Graduate Excellence in Materials Science Diamond Award	2008
Caltech Li Ming Scholarship	2007

Journal Publications

29. Z. A. Feng, M. L. Machala, W. C. Chueh. High Temperature Electrochemical CO_2 Reduction and CO Oxidation on Ceria: A Coverage-Dependent Mechanism Revealed In-Operando. (2014). *Submitted.*
28. Y. Li, J. N. Weker, W. Gent, D. A. Cogswell, T. Tyliszczak, W. C. Chueh. Operando nanoscale correlation mapping of lithiation in porous battery electrodes with single-particle sensitivity. (2014). *Submitted.*
27. D. N. Mueller, M. L. Machala, H. Bluhm, W. C. Chueh. Surface lattice oxygen redox active in substituted lanthanum iron perovskite-oxide electrocatalysts observed in operando. (2014). *Nature Comm. In Revision.*
26. Y. Li, F. El Gabaly, T. R. Ferguson, R. B. Smith, N. C. Bartelt, J. D. Sugar, K. R. Fenton, D. A. Cogswell, A. L. D. Kilcoyne, T. Tyliszczak, M. Z. Bazant, W. C. Chueh. Transition between Particle-by-Particle and

Concurrent Intercalation in Phase-Separating Battery Electrodes. (2014). *Nature Mater.* (2014). *Accepted.*

25. Z. A. Feng, F. El Gabaly, X. Ye, Z.-X. Shen, W. C. Chueh. Fast Vacancy-Mediated Oxygen Ion Incorporation across the Ceria-Gas Electrochemical Interface. *Nature Comm*. **5**:4374 (2014).
24. C. Chen, D. Chen, W. C. Chueh, F. Ciucci. Modeling the Impedance Response of Mixed-Conducting Thin Film Electrodes. *Phys. Chem. Chem. Phys*. **16**, 11573 (2014).
23. D. Siegel, W. C. Chueh, F. El Gabaly, K. McCarty, J. de la Figurera, M. Blanco-Rey. Determination of the Surface Structure of CeO_2(111) by Low-Energy Electron Diffraction. *J. Chem. Phys.* **139**, 114703 (2013).
22. J. D. Sugar, F. El Gabaly, W. C. Chueh, K. R. Fenton, T. Tyliszczak, P. G. Kotula, N. C. Bartelt. High-resolution chemical analysis on cycled $LiFePO_4$ battery electrodes using energy-filtered transmission electron microscopy. *J. Power Sources* **246**, 512-521 (2014).
21. X. Ye, J. Melas-Kyriazi, Z. A. Feng, N. A. Melosh, W. C. Chueh. Semiconductor/Mixed Ion & Electron Conductor Heterojunction for Elevated-Temperature Water Splitting. *Phys. Chem. Chem. Phys.* **15**, 15459-15469 (2013).
20. A. H. McDaniel, E. Miller, D. Arfin, A. Ambrosini, E. Coker, R. O'Hayre, W. C. Chueh, J. Tong. Sr- and Mn-doped $LaAlO_{3-\delta}$ for Solar Thermochemical H_2 and CO Production. *Energy Environ. Sci.* **6**, 2424-2428 (2013).
19. W. C. Chueh, F. El Gabaly, J. D. Sugar, N. C. Bartelt, K. R. Fenton, K. R. Zavadil, T. Tyliszczak, W. Lai, K. F. McCarty. Intercalation Pathway in Many-Particle $LiFePO_4$ Electrode Revealed by Nanoscale State-of-Charge Mapping. *Nano Lett*. **13**, 866-872 (2013).
18. W. Jung, J. O. Dereux, W. C. Chueh, Y. Hao, S. M. Haile. High Electrode Activity of Nanostructured, Columnar Ceria Films for Solid Oxide Fuel Cells. *Energy Environ. Sci.* **5**, 8682-8689 (2012).
17. F. El Gabaly, A. H. McDaniel, M. E. Grass, W. C. Chueh, H. Bluhm, Z. Liu, K. F. McCarty. Identifying Electrochemical Intermediate Species in H_2 Redox Reactions on Solid-State Electrolytes. *Chem. Comm.* **48**, 8338-8340 (2012).
16. W. C. Chueh, A. H. McDaniel, M. E. Grass, Y. Hao, N. Jaibeen, Z. Liu, S. M. Haile, K. F. McCarty, H. Bluhm, F. El Gabaly. High Stability and Reactivity of Ce^{3+} on Doped CeO_2 Surface Revealed In operando. *Chem. Mater*. **24**, 1876-1882 (2012).
15. W. C. Chueh, S. M. Haile. Electrochemistry of Mixed Oxygen Ion & Electron Conducting Electrodes in Solid Electrolyte Cells. *Annu. Rev. Chem. Biomol. Eng.* **3**, 313-341 (2012).
14. E. C. C. Souza, W. C. Chueh, W. Jung, E. N. S. Muccillo, S. M. Haile. Ionic and Electronic Conductivity of Nanostructured, Samaria-Doped Ceria. *J. Electrochem. Soc.* **159**, K127-K135 (2012).
13. W. C. Chueh, Y. Hao, W. Jung & S. M. Haile. High Electrochemical Activity of the Oxide Phase in Ceria-Pt & Ceria-Ni Composite Anodes. *Nature Mater.* **11**, 155-161 (2012).
12. Z. Lang, W. C. Chueh, K. Ganesan, S. M. Haile & W. Lipinski. Experimental Determination of Transmittance of Porous Cerium Oxide Media in the Spectral Range 300 – 1,100 nm. *Exp. Heat Transfer* **24**, 285-299 (2011).
11. F. Ciucci, T. Carraro, W. C. Chueh, W. Lai. Reducing Error & Measurement Time in Impedance Spectroscopy Using Model-based Optimal Experimental Design. *Electrochim. Acta* **56**, 5416-5434 (2011).
10. W. C. Chueh, C-K. Yang, C. M. Garland, W. Lai & S. M. Haile. Unusual Decrease in Conductivity Upon Hydration in Acceptor Doped, Microcrystalline Ceria. *Phys. Chem. Chem. Phys.* **13**, 6442-6451 (2011).
9. F. Ciucci, W. C. Chueh, D. G. Goodwin & S. M. Haile Decoupling Surface Reaction & Bulk Transport in Mixed Conductors with Electrochemically-Active Surfaces: A 2-D Numerical Study of Ceria. *Phys. Chem. Chem. Phys.* **13**, 2121-2135 (2011). Hot Article.
8. W. C. Chueh, C. Falter, M. Abbott, D. Scipio, P. Furler, S. M. Haile, A. Steinfeld. High-Flux Solar-

Driven Thermochemical Dissociation of CO_2 & H_2O Using Nonstoichiometric Ceria. *Science* **330**, 1797-1801 (2010).

7. W. C. Chueh & S. M. Haile. Thermochemical Study of Ceria: Exploiting an Old Material for New Modes of Energy Conversion of CO_2 Mitigation. *Phil. Trans. R. Soc. A.* **368**, 3269-3294 (2010).
6. W. C. Chueh & S. M. Haile. Electrochemical Studies of Capacitance in Cerium Oxide Thin Films and Its Relationship to Anionic and Electronic Defect Densities. *Phys. Chem. Chem. Phys.* **11**, 8144-8148 (2009).
5. W. C. Chueh & S. M. Haile. Ceria as a Thermochemical Reaction Medium for Selectively Generating Syngas or Methane from H_2O & CO_2. *Chem. Sus. Chem.* **2**, 735-739 (2009).
4. G. A. Umeda, W. C. Chueh, L. Noailles, S. M. Haile & B. S. Dunn. Inverse Opal Ceria-Zirconia: Architectural Engineering for Heterogeneous Catalysis. *Energy Environ. Sci*. **1**, 484 - 486 (2008).
3. W. C. Chueh, W. Lai & S. M. Haile. Electrochemical Behavior of Ceria with Selected Metal Electrodes. *Solid State Ionics* **179**, 1036 - 1041 (2008).
2. W. C. Chueh, Z. Shao & S. M. Haile. Tunability of Propane Conversion over Alumina Supported Pt and Rh Catalysts. *Top. Catal.* **46**, 402 - 413 (2007).
1. Z. Shao, J. Mederos, W. C. Chueh & S. M. Haile. High Power-Density Single-Chamber Fuel Cells Operated on Methane. *J. Power Sources* **162**, 589 - 596 (2006).

Invited Presentations

*Keynote, **Plenary

74. American Chemical Society National Meeting, Mar. 2015, Denver, USA.
73. TMS Annual Meeting, Mar. 2015, Orlando, USA. *Declined due to family reasons.*
72. Israeli-American Kavli Frontiers of Science Symposium, Feb. 2015, Jerusalem, Israel. *Declined due to family reasons.*
71. Hewlett Packard Lab, Jan. 2015, Palo Alto, USA. *Accepted*.
70. **Surface Chemistry and NAP-XPS Conference, SOLEIL Synchrotron, Dec. 2014, Paris, France. *Accepted*.
69. University of California, Los Angeles, Department of Materials Science & Engineering, Nov. 14, 2014, Los Angeles, USA.
68. Stanford-Chalmers Workshop on Advancing Materials Innovatively, Stanford University, Nov. 13, Stanford, USA.
67. California Research Alliance by BASF (CARA) Battery Workshop, University of California, Berkeley, Nov. 8, Berkeley, USA.
66. Samsung Advanced Institute of Technology, Nov. 7, Seoul, Korea.
65. University of Washington, Department of Chemical Engineering. Nov. 2014, Seattle, USA.
64. International Symposium on Electrocatalysis, Oct. 27, 2014, Whistler, Canada.
63. Stanford Global Climate Energy Program Research Symposium, Oct. 14, 2014, Stanford, USA.
62. Advanced Light Source Energy Conversion & Storage Workshop, Oct. 7, 2014, Berkeley, USA.
61. *Advanced Light Source Users Meeting, Oct. 6, 2014, Berkeley, USA.
60. Advanced Light Source Diffraction-Limited Workshop, Oct. 1, 2014, Berkeley, USA.
59. HKUST-Caltech Workshop on Fuel Cells & Electrolyzers, Aug. 19, 2014, Hong Kong, China.
58. International Materials Research Congress, Aug. 2014, Cancun, Mexico. *Substitution speaker.*

57. Tohoku University, Graduate School of Environmental Studies, Aug. 2, 2014, Sendai, Japan.
56. The 65th Meeting of the Solid State Ionics Society of Japan, Aug. 1, 2014, Sendai, Japan.
55. Gordon Conference on Ceramics, July 21, 2014, Holyoke, USA.
54. Solid State Energy Conversion Alliance Workshop, Jul. 22, 2014, Pittsburgh, USA.
53. Oxide Thin Films for Advanced Energy and Information Applications Conference, July 13, 2013, Chicago, USA.
52. Stanford Synchrotron Radiation Lightsource Triennial Review, Jun. 10, 2014, Menlo Park, USA.
51. European Materials Research Society Meeting, May 26, 2014, Lille, France.
50. The Molecular Foundry, Lawrence Berkeley National Laboratory, May 20, 2014, Berkeley, USA.
49. TedX @ Stanford, Stanford University, May 10, 2014, Berkeley, USA.
48. Berkeley Nano Forum, University of California, Berkeley, Apr. 26, 2014, Berkeley, USA.
47. Materials Research Society Meeting, Apr. 23, 2014, San Francisco, USA.
46. University of Wisconsin, Madison, Department of Materials Science & Engineering, Apr. 17, 2014.
45. Gordon Research Conference on Batteries, Mar. 13 2014.
44. TMS Annual Meeting, Feb. 20, 2014, San Diego, USA.
43. Lawrence Berkeley National Laboratory, Berkeley, USA. Feb. 12, 2014.
42. University of Texas, Austin, Center of Electrochemistry Annual Workshop, Feb. 8, 2014, Austin, USA.
41. University of Oslo, Dec. 17, 2013, Oslo, Norway.
40. Denmark Technical University, Department of Energy Conversion & Storage, Dec. 16, 2013, Copenhagen, Denmark.
39. Chalmers University of Technology, Department of Chemistry, Dec. 12, 2013, Gothenburg, Sweden.
38. Samsung Advanced Institute of Technology, Nov. 6, 2013, Seoul, Korea.
37. Materials Science & Technology Conference, Oct. 29, 2013, Montreal, Canada.
36. Rambus, Oct. 16, 2013, Sunnyvale, CA, USA.
35. Advanced Light Source Users Meeting, Oct. 8, 2013, Berkeley, CA, USA.
34. American Chemical Society Western Regional Meeting, Oct. 5, 2013, San Jose, USA. *Accepted*.
33. Stanford University, Department of Energy & Resource Engineering, Sep. 30, 2013, CA, USA.
32. University of Michigan, Department of Materials Science & Engineering, Sep. 6, 2013, MI, USA.
31. Michigan State University, Department of Chemical Engineering & Materials Science, Sep. 5, 2013, MI, USA.
30. Ford Motor Company, Sep. 4, 2013, MI, USA.
29. Solid State Electrochemistry Workshop, Jul. 22, 2013, Heidelberg, Germany.
28. University of Giessen, Department of Physical Chemistry, Jul. 19, 2013, Giessen, Germany.
27. SLAC National Accelerator Laboratory, Stanford Institute for Materials & Energy Sciences, Jun. 14, 2013, CA, USA.
26. Seoul National University, Department of Materials Science & Engineering, Jun. 10, 2013, Seoul, South Korea.
25. The 19th Conference on Solid State Ionics, Jun. 3, 2013, Kyoto, Japan.
24. Nanjing University of Technology, Department of Chemical Engineering, Mar. 28, 2013, Nanjing, China.

23. University of Tokyo, Department of Materials Engineering, Mar. 27, 2013, Tokyo, Japan.
22. Standard Synchrotron Lightsource Scientific Advisory Committee, Jan. 31, 2013, Stanford, CA. USA.
21. Stanford Energy Seminar, Feb. 4, 2013, Stanford, CA, USA.
20. Massachusetts Institute of Technology, Department of Chemical Engineering, Oct. 2012, MA, USA.
36. Advanced Light Source Users Meeting, Oct. 2012, Berkeley, CA, USA.
18. Stanford Synchrotrons Lightsource Annual User's Meeting, Oct. 2012, CA, USA.
17. Stanford Energy Environmental Affiliates Program, Sep. 2012, CA, USA.
16. Solid State Electrochemistry for Energy Storage & Conversion Workshop, University of Heidelberg, Jul. 2012, Heidelberg, Germany.
15. SLAC National Accelerator Laboratory, Photon Science, Jul. 2012, CA, USA.
14. University of California, Davis, Department of Chemical Engineering & Materials Science, May 2012, CA, USA.
13. Materials Research Society Meeting, Apr. 2012, San Francisco, CA, USA.
12. Stanford University, Department of Materials Science & Engineering, Mar. 2012, CA, USA.
11. Massachusetts Institute of Technology, Department of Nuclear Science & Engineering, Feb. 2012, MA, USA.
10. Materials Science & Technology Conference, Oct. 2011, Columbus, OH, USA.
9. Advanced Light Source User Meeting, Oct. 2011, Berkeley, CA, USA.
8. European Materials Research Society Meeting, May, 2011, Nice, France.
7. ETH Zürich, Department of Mechanical and Process Engineering, May 2011, Zürich, Switzerland.
6. Colorado School of Mines, Department of Metallurgical and Materials Engineering, Feb. 2011, Golden, CO, USA.
5. Solid State Electrochemistry Workshop at the University of Heidelberg, Jul. 2010, Heidelberg, Germany.
4. University of Michigan, Department of Materials Science & Engineering, Feb. 2010, Ann Arbor, MI, USA.
3. Workshop on Solar Thermochemical Cycles, Nov. 2009, Albuquerque, NM, USA.
2. XVII International Materials Research Congress, Aug. 2009, Cancun, Mexico. *Invited plenary talk given on behalf of S. Haile.*
1. eSolar Inc. Oct. 2008, Pasadena, CA, USA.

Conference Presentations

38. M. L. Machala, D. N. Mueller, H. Bluhm, W. C. Chueh. Electronic and chemical dynamics of perovskite oxide surfaces revealed under operation, Advanced Light Source Annual User Meeting, USA. Oct. 6, 2014.
37. Y. Li, F. El Gabaly, R. B. Smith, T. R. Ferguson, N. C. Bartelt, J. D Sugar, K. R. Fenton, T. Tyliszczak, D. Kilcoyne, D. A. Cogswell, M. Z. Bazant, W. C. Chueh. "Current-Induced Transition from Particle-by-Particle to Concurrent Intercalation in Phase-Separating Battery Electrodes." Advanced Light Source User Meeting, USA, Oct 6, 2014.
70. Y. Li, F. El Gabaly, R. B. Smith, T. R. Ferguson, J. N. Weker, W. E. Gent, N. C. Bartelt, J. D Sugar, K. R. Fenton, D. Kilcoyne, D. A. Cogswell, T. Tyliszczak, M. Z. Bazant, W. C. Chueh, "Ion Insertion Reactions in Batteries: Visualizing Heterogeneous Current Distribution in Phase-Separating Electrodes," XXIII International Materials Research Congress, Cancun, Aug 19, 2014.

35. D. N. Mueller, M. L. Machala, H. Bluhm, W. C. Chueh, "Redox Activity of Surface Oxygen Anions in Oxygen-Deficient Perovskite Oxide Mixed Conductors," Electrochemistry Workshop, Asilomar, CA, USA, Jul 8, 2014
34. Y. Li, J Nelson Weker, W. E. Gent, D. A. Cogswell, W. C. Chueh, "Operando Nanoscale Correlation Mapping of Lithiation in Porous Electrodes Containing Organic Liquid Electrolytes," Electrochemistry Workshop, Asilomar, CA, USA, Jul 9, 2014.
33. D. N. Mueller, M. L. Machala, H. Bluhm, W. C. Chueh, "Redox activity of surface lattice oxygen in Fe & Co based perovskites revealed by operando spectroscopy", European Materials Research Society Spring Meeting 2014, Lille, France, May 26, 2014
32. Y. Shi, Z. A. Feng, Y. Wen, M. F. Toney, W. C. Chueh. "Electrochemical activity of atomically flat ceria thin films of different orientations." Materials Research Society Spring Meeting, San Francisco, USA. Apr. 24, 2014.
31. X. Ye, J. Yang, M. Boloor, N. A. Melosh, W. C. Chueh. "Assessing the Optimal Temperature and Light Intensity for Water Splitting on Hematite Photoanodes."Materials Research Society Spring Meeting, San Francisco, USA. Apr. 23, 2014.
30. D. N. Mueller, M. L. Machala, H. Bluhm, W. C. Chueh. "Surfaces of Perovskite Oxides: Electronic Structure Probed In-Operando." Materials Research Society Spring Meeting, San Francisco, USA. Apr. 23, 2014.
29. Y. Li, J. N. Weker, F. El Gabaly, R. B. Smith, T. R. Ferguson, N. C. Bartelt, J. D Sugar, K. R. Fenton, T. Tyliszczak, D. Kilcoyne, D. A. Cogswell, M. Z. Bazant, W. C. Chueh. "Chemical Imaging of Inhomogeneous Intercalation in Phase-Separating Battery Electrodes.: Materials Research Society Spring Meeting, San Francisco, USA, Apr 23, 2014.
28. Z. A. Feng, M. Machala, X. Ye, Z.-X. Shen, W. C. Chueh. Atomic Level Insights on Elevated Temperature CO2 Reduction and CO Oxidation on Ceria Surface. Materials Research Society Spring Meeting, San Francisco , USA. Apr. 22, 2014.
27. M. L. Machala, D. N. Mueller, H. Bluhm, D. F. Ogletree, W. C. Chueh. "Precipitation and growth of secondary phases on electrochemically-active, perovskite-oxide surfaces." Materials Research Society Spring Meeting, San Francisco, USA. April 22, 2014.
26. Y. Li, F. El Gabaly, J.D. Sugar, T. Tyliszczak, A.L.D. Kilcoyne, W.C. Chueh. "Rate Dependence of the Actively Intercalating Particles in $LiFePO_4$." Electrochemical Society Meeting, San Francisco, USA, Oct. 30, 2013
25. D. N. Mueller, M. L. Machala, H. Bluhm, W. Chueh. Surface lattice oxygen is redox active in substituted lanthanum ferrite perovskites. Advanced Light Source User Meeting, Berkeley, USA. Oct. 7, 2013
24. Y. Li, F. El Gabaly, J.D. Sugar, T. Tyliszczak, W.C. Chueh. Multiple Particle Dynamics of Lithium Insertion Electrodes Revealed through Nanoscale Chemical Imaging. Advanced Light Source User Meeting, Berkeley, USA. Oct. 7, 2013
23. D. N. Mueller, M. L. Machala, H. Bluhm, W. Chueh. Surface lattice oxygen is redox active in substituted lanthanum ferrite perovskites. Solid State Electrochemistry Workshop, Heidelberg, Germany. Jul. 23, 2013.
22. D. N. Mueller, M. L. Machala, H. Bluhm, W. Chueh. Surface lattice oxygen is redox active in substituted lanthanum ferrite perovskites. WCU Seminar Series, Seoul National University, Seoul, Republic of Korea. Jun. 10, 2013.
21. D. N. Mueller, M. L. Machala, H. Bluhm, W. Chueh. Surface lattice oxygen is redox active in substituted lanthanum ferrite perovskites. 19th International Conference on Solid State Ionics, Kyoto, Japan. Jun. 4 2013.
20. X. Ye, J. Melas-Kyriazi, Z. A. Feng, N. A. Melosh, W. C. Chueh. Semiconductor/Mixed Ion & Electron Conductor Heterojunction for Elevated-temperature Water Splitting: Theoretical Analysis. The 19th International Conference on Solid State Ionics, Japan. Jun. 4, 2013.
19. Z. A. Feng, X. Ye, F. El Gabaly, Z.-X. Shen, W. C. Chueh. Surface Intermediates and Gradients Reveal H2O/H2 Electrochemical Reaction Pathway on Doped Ceria. The 19th International Conference on Solid State Ionics, Japan. Jun. 3, 2013.

18. X. Ye, J. Melas-Kyriazi, Z. A. Feng, N. A. Melosh, W. C. Chueh. Semiconductor/Mixed Ion & Electron Conductor Heterojunction for Elevated-temperature Water Splitting: Theoretical Analysis. Materials Research Society Spring Meeting, USA. Apr. 3, 2013.
17. D. N. Mueller, M. L. Machala, F. El Gabaly, H. Bluhm, W. C. Chueh. Dynamic Surface Electronic Structure of Oxygen-ion Conducting Perovskite Oxides during Electrocatalysis. Materials Research Society Spring Meeting, USA. Apr. 3, 2013.
16. M. L. Machala, D. N. Mueller, F. El Gabaly, W. C. Chueh. Unraveling the correlation between surface non-stoichiometry and active phase for oxygen evolution in Ba-substituted $LaFeO_{3-\delta}$. Materials Research Society Spring Meeting, USA. Apr. 3, 2013.
15. Z. A. Feng, X. Ye, F. El Gabaly, K. F. McCarty, Z. X. Shen, W. C. Chueh. Direct Quantification of Surface Ionic, Electronic and Adsorbed Species on Ceria at Elevated Temperature. Materials Research Society Spring Meeting, USA. Apr. 3, 2013.
14. Y. Li, F. El Gabaly, J. D. Sugar, T. Tzliszczak, W. C. Chueh. Nanoscale Visualization of Phase Transformation in Many-particle $LiFePO_4$ Electrode. Materials Research Society Spring Meeting, USA. Apr. 2, 2013.
13. D. N. Mueller, W. C. Chueh. Perovskite-oxides as materials for energy conversions: From bulk to surface. University of California, Davis. Davis, CA, USA. Feb. 11, 2013.
12. X. Ye, J. Melas-Kyriazi, Z. A. Feng, N. A. Melosh, W. C. Chueh. Elevated-Temperature Photoelectrochemical Cell for Water Splitting. Materials Research Society Fall Meeting, Nov. 27, 2012.
11. Z. A. Feng, X. Ye, F. El Gabaly, K. F. McCarty, Z. X. Shen, W. C. Chueh. Ambient Pressure XPS Study of Electrochemical Double Layer on an Operating Ceria-Based Model Electrode. Nonstoichiometric Compounds V, Taormina, Italy. Sep. 27. 2012.
10. Solid State Ionics 18, Jul. 2011, Warsaw, Poland.
9. Materials Research Society Meeting, Apr. 2011, San Francisco, CA, USA.
8. Materials Research Society Meeting, Nov. 2010, Boston, MA, USA.
7. American Vacuum Society 56th Meeting, Nov. 2009, San Jose, CA, USA.
6. Solid State Ionics 17, Jun. 2009, Toronto, Canada.
5. 215th Electrochemical Society Annual Meeting, May 2009, San Francisco, CA, USA.
4. Presentation to the Chief of Naval Operations Strategic Studies Group, Nov. 2008, California Institute of Technology, Pasadena, CA, USA.
3. Material Science & Technology Conference, Oct. 2008, Pittsburgh, PA, USA.
2. 213th Electrochemical Society Annual Meeting, May 2008, Phoenix, AZ, USA.
1. Solid State Ionics 16, Jul. 2007, Shanghai, China.

Patents

3. N. A. Melosh, W. C. Chueh, X. Ye. "Heterojunction Elevated-temperature Photoelectrochemical Cell." Patent application filed (2013).
2. A. Ambrosini, A. H. McDaniel, E. N. Coker, W. C. Chueh and J. Tong. "A Method and System for Solar Thermochemical H_2 and CO Production." Patent application filed (2013).
1. S. M. Haile & W. C. Chueh. "Thermochemical Synthesis of Fuels for Storing Thermal Energy." U.S. Patent No. 8,167,961 (2012).

Teaching

2. "Principles, Materials and Devices of Batteries" MATSCI 303, Stanford University. Newly developed course. Taught annually 2014 – present.

3. “Thermodynamic Evaluation of Green Energy Technologies" MATSCI 154, Stanford University. Newly developed course. Taught annually 2012 - present.

1. “Imperfections in Crystalline Solids” MATSCI 196/206, Stanford University. Newly developed course. Taught annually 2012 - present

Services

Journal Reviewer

Nature Materials, Nature Nanotechnology, Nature Chemistry, Nature Communications, Nano Letters, Journal of the American Chemical Society, Chemical Reviews, Energy & Environmental Science, Chemistry of Materials, Physical Chemistry Chemical Physics, Journal of Materials Chemistry, Solid State Ionics, Energy & Fuels, Journal of Solar Energy Engineering, Journal of Electrochemical Society

Proposal Reviewer

National Science Foundation, Department of Energy Office of Basic Energy Science

Conference & Symposium Organizer

8. 20th International Conference on Solid State Ionics, Jun. 2015, Keystone, USA.
7. Materials Research Society “Insights for Energy Materials Using Novel In Situ Characterization” Symposium, Apr. 2015, San Francisco, USA.
6. Stanford Synchrotron Radiation Lightsource Users Meeting “In Situ Studies of Inorganic Transition-Metal Complexes” Symposium, Oct. 2014, Menlo Park, USA.
5. Electrochemistry Workshop at Asilomar, Jul. 2014, Monterey, USA.
4. Solid State Electrochemistry Workshop, Jul. 2013, Heidelberg, Germany.
3. Materials Research Society “Electrochemical Interface” Symposium, Apr. 2013, San Francisco, USA.
2. Solid State Electrochemistry Workshop at the University of Heidelberg, Jul. 2012, Heidelberg, Germany.
1. Solid State Electrochemistry Workshop at the University of Heidelberg, Jul. 2010, Heidelberg, Germany.

Facilities Committee

1. Member, Advanced Light Source Users Executive Committee (2015-2017).

Government Agency Workshops

2. Solid Oxide Fuel Cell Promise, Progress, and Priorities Workshop, Jul. 11-12, 2013, Alexandria, USA.
1. Solar Beyond Grid Parity ARPA-E Workshop, Apr. 10-11, 2013, Boulder, USA.