

Nov 05, 2011

Suljo Linic

Department of Chemical Engineering, 3330 GG Brown Building, 2300 Hayward,
University of Michigan, Ann Arbor, MI 48109-2136,

Tel.: 734 647 7984, email: linic@umich.edu

Web: <http://www.engin.umich.edu/dept/cheme/people/linic.html>

Education:

West Chester University, PA, BS Physics (minors: Chemistry, Mathematics) 1998

University of Delaware, DE, Ph.D. Chemical Engineering 2003

Adviser: Prof. Mark A. Barteau

Thesis Title: From fundamental studies to rational catalyst design: a hybrid experimental/theoretical investigation of ethylene epoxidation

Fritz-Haber Institute der Max Planck Gesellschaft,
Berlin Theory Department, Postdoctoral fellow 2003-2004

Adviser: Prof. Dr. Matthias Scheffler

Appointments:

2010 - Associate Professor of Chemical Engineering, University
of Michigan, Ann Arbor.

2004 - 2010 Assistant Professor of Chemical Engineering, University of
Michigan, Ann Arbor

Awards

- **Nanoscale Science and Engineering Forum Young Investigator Award, 2011**, awarded annually by American Institute of Chemical Engineers recognizing outstanding interdisciplinary research in nanoscale science and engineering by an engineer or scientist in the early stages of their professional career (within 10 years of completion of highest degree).
- **ACS Unilever Award, 2009**, awarded annually by Colloids and Surface Science Division of ACS for significant contributions in colloidal and surface chemistry
- **Camille Dreyfus Teacher-Scholar Award, 2009**, awarded to ~10 mainly assistant or associate professors by the Dreyfus Foundation for research contributions to the field of chemical science. (May 2009)
- **DuPont Young Professor Award, 2008**, awarded to ~10 – 15 mainly assistant or associate professors worldwide across multiple disciplines by DuPont corporation. (May 2008)
- **NSF Career Award**, awarded Nov 2005 for the 2006-2011 period
- **1938E Award, 2010**, awarded annually by the College of Engineering at the University to Michigan to one junior faculty member for excellence in research, teaching, and service.
- **Chemical Engineering Departmental Award, 2007**, one award is awarded annually to a faculty member for excellence in research, teaching, and service

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- **Frontiers in Chemistry Invitee** (England, August 2008). Approximately 90 most promising early career “rising stars” in chemical sciences (30 from each country; US, Germany, and Great Britain) were identified by the American Chemical Society (ACS), the German Chemical Society (GDCh) and the Royal Society of Chemistry (RSC) to participate in the Symposium.
- **Max Planck postdoctoral fellowship, 2003-2004.**
Fellowship given by the German Max Planck Society
- **Young Scientist Prize from the Council of the International Association of Catalysis Societies, Paris, France, July 2004,** awarded by the Council of the International Association of Catalysis Societies, to the most promising young scientists (under age 35) for research accomplishments.
- **University of Delaware Competitive Fellowship Award, 2002,** awarded to the most accomplished graduate student at the University. Criteria are academic and thesis work.
- **Soros Foundation Fellowship 1995-1998**
- **Gordon Research Conference Fellowships 2002, 2003**
- **Department of Chemical Engineering Teaching Fellowship, 2002**
- **Robert L. Pigford Outstanding Teaching Assistant Award at the University of Delaware**

RESEARCH

Research Interests: Fundamental Heterogeneous Catalysis, Surface chemistry, Electronic structure calculations, Electro-chemical conversion, Photo-chemical conversion.

Research group

- Eranda Nikolla (graduated 05/2009) currently Assistant Professor at Wayne State University.
- Siris Laursen (graduated 09/2009, currently at Valencia (Spain) doing postdoctoral work with Prof. Dr. Avelino Corma)
- Neil Schweitzer (graduated 11/2010, currently at Argonne National Laboratory)
- Phillip Christopher (graduated 08/2011, currently Assistant Professor at University of California, Riverside)
- David Ingram (graduated 08/2011, currently R & D engineer at Conoco Phillips)
- Fifth year Ph.D. students: Hongliang Xin, Adam Holewinski
- Fourth year Ph.D. students: Matt Morabito, Andippan Marimuthu
- Third year Ph.D. students: Michelle Przybylek, Thomas Yeh
- Second year Ph.D. students: Timothy Van Cleve, Brittany Lancaster, Paul Hernley
- First year Ph.D. students: Ahn Ta, Timothy Noel
- Graduated with Masters Degree: Jeb Adams, Peter Larkowski, Katrina Rumsdell, and Bean Getosian (currently at UC Berkley working on Ph.D. with Prof. Alexis Bell)

Research Group Awards

- **Best poster award** (Michelle Przybylek, third year Ph.D. student), Blue-Green symposium, annual meeting of the University of Michigan and Michigan State chemical engineering departments, 2011.
- **NSF fellowship, First-year PhD student Brittany Lancaster**
- **Distinguished Dissertation Award, 2010**, (Eranda Nikolla), awarded by the University of Michigan Rackham Graduate School for the best PhD dissertation in a given year (~ University of Michigan awards ~800 PhD degrees in a given year).
- **College of Engineering Outstanding Ph.D. Student Research Award, 2010**, (Phil Christopher), awarded to one student in the College. The key criteria for the award selection were: Innovative research demonstrating a keen sense of creativity and inventiveness and the impact the research will have on society.
- **Best Poster Award** (Adam Holewiski, third year Ph.D. student), Catalysis and Reaction Engineering Division, 2010 AIChE meeting, Salt Lake City, UH The poster was selected among ~ 70 posters
- **Rackham Graduate Fellowship, 2010**, (Philip Christopher, fourth year Ph.D. student), Only ~60 fellowships were awarded for the entire University.
- **Best Poster Award** (Philip Christopher, Ph.D. student), Gordon Research Conference on Catalysis, 2010, New Hampshire. The poster was selected, along with 4 others, among >80 posters presented by Ph.D. students and postdoctoral fellows from leading international research groups
- **Best Poster Award** (David B. Ingram, Ph.D. student), Gordon Research Conference on Catalysis, 2010, New Hampshire. The poster was selected, along with 4 others, among >80 posters presented by Ph.D. students and postdoctoral fellows from leading international research groups
- **Best Student Presentation Award** (David Ingram, Ph.D. student), Michigan Catalysis Society Symposium, 2009. There were 8 Ph.D. student presenters from Michigan, Ohio, Indiana, and Ontario
- **Best Poster Award** (Philip Christopher, Ph.D. student), Gordon Research Conference on Catalysis, 2008, New Hampshire. The poster was selected, along with 3 others, among >80 posters presented by Ph.D. students and postdoctoral fellows from leading international research groups
- **Young Scientist Award** from the Council of the International Association of Catalysis Societies, (Eranda Nikolla, fourth year Ph.D. student), Korea, 07/2008
- **Sandia National Laboratory Fellowship** (Matthew Morabito, second year graduate student), 2009
- **Best Student Presentation Award** (Phillip Christopher, Ph.D. student), Michigan Catalysis Society Symposium, GM Company 2008.

There were 8 Ph.D. student presenters from Michigan, Ohio, Indiana, and Ontario.

- **Walter J. Weber Jr. award in Environmental and Energy Sustainability**, 2007 (Eranda Nikolla, fourth year Ph.D. student),
- **Rackham Graduate Fellowship**, 2007, (Eranda Nikolla, fourth year Ph.D. student), Only ~60 fellowships were awarded for the entire University.
- **Best Poster Award** (Siris Laursen, third year Ph.D. student), Catalysis and Reaction Engineering Division, 2006 AIChE meeting, San Francisco, CA
The poster was selected among ~ 70 posters
- **Best Poster Award** (Eranda Nikolla, fourth year Ph.D. student), Gordon Research Conference on Catalysis, 2006, New Hampshire.
The poster was selected, along with 4 others, among >100 posters presented by Ph.D. students and postdoctoral fellows from leading international research groups
- **Best Student Presentation Award** (Eranda Nikolla, third year Ph.D. student), Michigan Catalysis Society Symposium, Dow Chemical 2006.
There were 7 Ph.D. student presenters from Michigan, Ohio, Indiana, and Ontario.
- **2nd place poster** (Eranda Nikolla, fourth year Ph.D. student), Blue-Green symposium, annual meeting of the University of Michigan and Michigan State chemical engineering departments, 2006.
- **Best Student Poster Presentation Award** (Hongliang Xin, second year Ph.D. student), Michigan Catalysis Society Symposium, Ford Co., 2007.

Peer-reviewed publications (in reverse chronological order)

(Corresponding authorship is denoted by *, undergraduate students are underlined, graduate students from my research group are underlined with two lines):

Published

1. S. Linic*, P. Christopher, D. B. Ingram, "Plasmonic-metal nanostructures for efficient conversion of solar to chemical energy", **Nature Materials**, **10**, 911, 2011.
2. H.Xin, A. Holewinski, S. Linic*, Predictive Structure-Reactivity Models for Rapid Screening of Pt-based Multimetallic Electrocatalysts for the Oxygen Reduction Reaction, **ACS Catalysis**, **2**, 12, 2012.
3. P. Christopher, H. Xin, S. Linic*, Visible light enhanced catalytic oxidation reactions on plasmonic silver nanostructures, **Nature Chemistry**, **3**, 467, 2011.
4. D. B. Ingram, P. Christopher, J. Bauer, S. Linic*, "Predictive model for the design of plasmonic metal/semiconductor composite photocatalysts", **ACS Catalysis**, **1**, 1441, 2011.
5. D. B. Ingram, S. Linic*, "Water splitting on composite plasmonic-metal/semiconductor photo-electrodes: Evidence for selective plasmon induced formation of charge carriers near the semiconductor surface", **Journal of the American Chemical Society**, **133**, 5202, 2011
6. N. Schweitzer, J. Schaidle, E. Obiefune, X. Pan*, S. Linic*, L. Thompson*, High Activity Carbide Supported Catalysts for Water Gas Shift, **Journal of the American Chemical Society**, **133**, 2378, 2011

7. S. Linic*, P. Christopher, “Overcoming limitation for the design of selective heterogeneous catalysts by manipulating shape and size of catalytic particles: Epoxidation reactions on silver (Ag)”, **ChemCatChem**, **2**, 1061, 2010.
8. H. Xin, S. Linic*, Exceptions to the d-band Model of Chemisorption on Metal Surfaces: the Dominant Role of Repulsion between Adsorbate States and Metal d-states, **J. Chem. Phys.**, **132**, 221101, 2010. (Selected to the 2010 Editors' Choice list, highlighting “notable JCP articles published in 2010 that present ground-breaking research”)
9. P. Christopher, D. B. Ingram, S. Linic, Enhancing photo-chemical activity of semiconductor nanoparticles with optically active Ag nano-structures: Photo-chemistry mediated by Ag surface plasmons, **J. Phys. Chem. C**, **114**, 9173, 2010.
10. H. Xin, N. Schweitzer, E. Nikolla, Suljo Linic*, Developing Relationships between the Local Chemical Reactivity of Alloy Catalysts and Physical Characteristics of Constituent Metal Elements, **J. Chem. Phys.**, **132**, 111101, 2010.
11. P. Christopher, S. Linic*, “Shape and size specific chemistry of Ag nanostructures in catalytic ethylene epoxidation”, **ChemCatChem**, 2010, **2**, 78–83 (listed as one of the three most accessed articles from the journal's first year in print).
12. N. Schweitzer, H. Xin, E. Nikolla, Suljo Linic*, “Establishing relationships between the geometric structure and chemical reactivity of alloy catalysts based on their measured electronic structure“, **Topic in Catalysis**, 2010, **53**, 348,
13. E. Nikolla, J. Schwank, S. Linic*, Improving the tolerance of Ni electro-catalysts to carbon-induced deactivation in direct electrochemical oxidation of hydrocarbons on SOFCs by alloying, **Journal of Electro-chemical Society**, **156**(11), B1312-B1316, 2009
14. D. Ingram, S. Linic*, "First-Principles Analysis of the Activity of Transition and Noble Metals in the Direct Utilization of Hydrocarbon Fuels at Solid Oxide Fuel Cell Operating Conditions", **Journal of Electrochemical Society**, **156**, B1457, 2009.
15. S. Laursen, S. Linic*, “Geometric and Electronic Characteristics of Active Sites on TiO₂-supported Au Nano-catalysts: Insights from First Principles”, **Physical Chemistry Chemical Physics**, **11**, 11006, 2009.
16. S. Laursen, S. Linic, “Strong chemical interactions between Au and off-stoichiometric defects on oxides as a possible source of chemical activity of nano-sized Au adsorbed on the oxide”, **Journal of Physical Chemistry C**, 2009, **113**, 6689–6693
17. E. Nikolla, J. Schwank, and S. Linic*, “Measuring and Relating the Electronic Structures of Nonmodel Supported Catalytic Materials to Their Performance, **Journal of the American Chemical Society**, 2009, **131** (7), pp 2747–2754
18. E. Nikolla, J. Schwank, and S. Linic*, “Comparative study of the kinetics of methane steam reforming on supported Ni and Sn/Ni alloy catalysts: the impact of the formation of Ni alloy on chemistry”, **Journal of Catalysis**, 2009, **263**, 220–227

19. J. Carlson, F. Henke, S. Linic*, M. Scheffler*:"Two-step mechanism for low temperature oxidation of vacancies in graphene", **Physical Review Letters**, 2009, 102, 166104.
20. P. Christopher, S. Linic*, "Engineering Selectivity in Heterogeneous Catalysis: Ag Nanowires as Selective Ethylene Epoxidation Catalysts", **Journal of the American Chemical Society**, 2008, 130, 34, 11264
21. E. Nikolla, J. Schwank, and S. Linic*, "Hydrocarbon steam reforming on Ni alloys at solid oxide fuel cell operating conditions", **Catalysis Today**, 2008, 136(3-4): 243-248
22. E. Nikolla, J. Schwank, S. Linic*, Promotion of the long-term stability of reforming Ni catalysts by surface alloying, **Journal of Catalysis**, 2007, 250(1), 85-93
23. J. Mukherjee, S. Linic*, "First principles investigations of electrochemical oxidation of hydrogen at solid oxide fuel cell operating conditions", **Journal of the Electrochemical Society**, 2007, 154(9), B919-B924
24. E. Nikolla, A. Holewinski, J. Schwank, S. Linic*; "Controlling Carbon Surface Chemistry by Alloying: Carbon Tolerant Reforming Catalyst", **Journal of the American Chemical Society**, 2006, 128(35); 11354-11355.
25. S. Laursen, S. Linic*, "Oxidation catalysis by oxide-supported Au nanostructures: The role of supports and the effect of external conditions" **Physical Review Letters**, 2006, 97 (2), 026101
26. S. Linic*, M.A. Barteau*, "On the Mechanism of Cs promotion in Ethylene Epoxidation on Ag", **Journal of the American Chemical Society**, 2004, 126, 8086.
27. S. Linic, H. Piao, K. Adib, M. A. Barteau, "Ethylene Epoxidation on Ag: Identification of the Crucial Surface Intermediate by Experimental and Theoretical Investigation of its Electronic Structure", **Angewandte Chemie International Edition**, 2004, 43, 2918.
28. S. Linic, J. Jankowiak, M.A. Barteau, "Selectivity driven design of bimetallic ethylene epoxidation catalysts from first principles", **Journal of Catalysis (Priority Communication)**, 2004, 224, 489.
29. S. Linic, M. A. Barteau, "Construction of a Reaction Coordinate and a Microkinetic Model for Ethylene Epoxidation on Silver from DFT Calculations and Surface Science Experiments", **Journal of Catalysis**, 2003, 214, 200.
30. S. Linic, M. A. Barteau, "Formation of a Stable Surface Oxametallacycle that Produces Ethylene Oxide", **Journal of the American Chemical Society**, 2002, 124, 310.
31. S. Linic, M. A. Barteau, "Control of Ethylene Epoxidation Selectivity by Surface Oxametallacycle", **Journal of the American Chemical Society**, 2003, 125, 4034.
32. S. Linic, J.W. Medlin, M.A. Barteau "Synthesis of Oxametallacycles from 2-iodoethanol on Ag(111) and the Structure Dependence of their Reactivity ", **Langmuir**, 2002, 18, 5197.

33. M. Enever, S. Linic, K. Uffalussy, J.M. Vohs and M. A. Barteau, "Synthesis, Structure and Reactions of Stable Oxametallacycles from Styrene Oxide on Ag(111)", **Journal of Physical Chemistry B**, 2005, 109, 2227.

Invited book chapters and publications:

1. E. Nikolla, S. Linic*, "Rational Design of Heterogeneous Catalysts: From Molecular Insights to Novel Catalysts", Springer, in press
2. S. Linic*, M. A. Barteau*, "Heterogeneous Catalysis of Alkene Epoxidation," Chapter 14.11.6 in the *Handbook of Heterogeneous Catalysis, 2nd edition*, volume 7, G. Ertl, H. Knözinger, F. Schüth, J. Weitkamp (eds.), Wiley-VCH, 2008, pp. 3448-3464.

Government, university, or industrial reports (non-refereed)

3. E. Nikolla, S. Linic, "Hybrid Experimental/Theoretical Approach Development of a Carbon-Tolerant Alloy Catalyst," **DOE-NETL Annual review, 2006**
4. E. Nikolla, S. Linic, "Hybrid Experimental/Theoretical Approach Development of a Carbon-Tolerant Alloy Catalyst," **DOE-NETL Annual review, 2007**
5. E. Nikolla, S. Linic, "Hybrid Experimental/Theoretical Approach Development of a Carbon-Tolerant Alloy Catalyst," **DOE-NETL Annual review, 2008**
6. S. Linic was one of co-authors of the report by DOE-BES on Basic Research Needs: Catalysis for Energy, published by DOE-BES in 2008

Patents

1. **UM 4082: Highly Selective Catalysts for Epoxidation of Ethylene to Form Ethylene Oxide. US Patent No. 7,820,840**
2. **UM 4414: Nanostructures for Photo-Catalytic Applications. US Patent Application No. 12/800,294**
3. **UM 4719: Plasmon Driven Chemical Reaction. Provisional Patent Application No. 61/346,771**

Invited and Keynote Seminars (in reverse chronological order, keynote lectures are denoted)

1. Invited keynote at the 2011 NSF Nanoscale Science and Engineering Grantee Conference, Plasmonic nanostructures in photochemistry, DC, 11/2011
2. Wayne State University (Detroit, MI), Nano-scale solutions in catalysis and photo-catalysis, Department of Chemical Engineering, 11/2011.
3. Duke University (NC), Nano-scale solutions in catalysis and photo-catalysis, Department of Chemistry, 11/2011.
4. AIChE annual meeting, (Minneapolis, October, 2011): Award lecture for Nanoscience and Engineering Forum Young Investigator Award, "Design of energy efficient and environmentally friendly nanomaterials for catalysis and photo-catalytic solar fuel production"

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5. ACS Annual Meeting (Denver, CO), "Photo-catalysis on plasmonic metallic nanostructures and plasmonic nanostructure/semiconductor composites", August, 2011
6. ACS Annual Meeting (Denver, CO), "Improving carbon tolerance of Ni heterogeneous (electro)catalysts by alloying: catalysts design guided by first principles calculations", August, 2011
7. ACS Annual Meeting (Denver, CO), "Designing catalysts based on their spectroscopic fingerprints: relationships between measured local geometric and electronic structure of alloy catalysts and their chemical reactivity", August, 2011
8. CIP Network of Excellence in Computational Catalysis, (Copenhagen, Denmark) "Development of predictive structure-performance relationships for rational design of multi-component catalytic materials", May 2011.
9. Workshop on New Trends of Computational Chemistry in Industry Applications (Barcelona, Spain), "Development of predictive structure-performance relationships for rational design of multi-component catalytic materials", May, 2011.
10. Workshop on Materials Design in Chemical Compound Space, Institute for Pure and Applied Mathematics at UCLA (Los Angeles, CA), "Using electronic structure descriptors to identify new catalysts", May 2011
11. Ohio State University (Columbus, OH), Nano-scale solutions in catalysis and photo-catalysis, Department of Chemical Engineering, April 2011.
12. University of California (Santa Barbara), Department of Chemical Engineering, "Nano-scale solutions in catalysis and photo-catalysis: materials for efficient conversion of solar to chemical energy", March, 2011.
13. Stanford University, Department of Chemical Engineering, "Nano-scale solutions in catalysis and photo-catalysis: materials for efficient conversion of solar to chemical energy", February, 2011.
14. University of Alabama (Tuscaloosa, AL), Nano-scale solutions in catalysis and photo-catalysis, Department of Chemical Engineering, April 2011.
15. University of Washington (Seattle), Center for Nanotechnology, "Nano-scale solutions in catalysis and photo-catalysis: materials for efficient conversion of solar to chemical energy", January, 2011.
16. Washington University (St. Louis), Nano-scale solutions in catalysis and photo-catalysis, December 2010.
17. Symposium on Catalysis Science at the Dawn of the Twenty-First Century, Lyon (France) "Exploiting Nanotechnology for Heterogeneous Catalysis: Shaped Metallic Nanostructures as Selective Catalysts and for Characterization of Surface Chemical Reactions", November 2010.
18. Catalysis Society of New York (NYC), "Design of materials for energy conversion from first principles: metallic nanoparticles of targeted shapes as highly selective catalysts, photo-catalysts, and platforms for chemical characterization" October, 2010.

19. University of Toledo, Department of Chemical Engineering, “Nano-scale solutions in catalysis and photo-catalysis: materials for efficient conversion of solar to chemical energy”, October, 2010.
20. Penn State University, Department of Chemical Engineering, “Nano-scale solutions in catalysis and photo-catalysis: materials for efficient conversion of solar to chemical energy”, September, 2010.
21. ACS Annual Meeting, “Enhancing Photo-chemical activity of semiconductor nanoparticles with optically active metallic nano-structures: Photo-chemistry mediated by surface plasmons”, Boston, MA, scheduled August 2010
22. University of Delaware, Department of Chemical Engineering, “Design of materials for energy conversion from first principles: metallic nanoparticles of targeted shapes as highly selective catalysts, photo-catalysts, and platforms for chemical characterization”, scheduled May 2010.
23. ACS annual meeting, “Well defined, highly uniform, targeted nano-structures as highly selective heterogeneous catalysts, photo-catalysts and characterization tools”, Symposium organized in honor of the recipient of the 2010 Ipatieff Prize , ACS meeting, San Francisco, scheduled March 2010
24. Massachusetts Institute of Technology, Department of Chemical Engineering, “Design of materials for energy conversion from first principles: metallic nanoparticles of targeted shapes as highly selective catalysis and photo-catalysts”, scheduled March 2010
25. Technical University of Denmark, Physics Department, “Design of materials for energy conversion from first principles: metallic nanoparticles of targeted shapes as highly selective catalysis and photo-catalysts”, Lyngby (Denmark) January 2010.
26. Keynote, Annual AVS meetings, “Catalysis on supported metal nano-clusters”, organized by Donna Chen, San Jose, CA, November, 2009
27. University of Wisconsin, Department of Chemical and Biological Engineering, “Molecular approaches to heterogeneous catalysis”, November, 2009
28. Philadelphia Catalysis Society Annual Symposium, “Targeted metallic nanostructures as heterogeneous catalysis, electro-catalysts, and platforms for chemical characterization”, Newark, DE, May 2009
29. Keynote, ACS Unilever Award Lecture, “Well defined, highly uniform, targeted nano-structures as highly selective heterogeneous catalysts, photo-catalysts and characterization tools”, ACS Colloids and Surface Science Meeting, New York, NY, June, 2009.
30. ACS Colloids and Surface Science Meeting, “Measuring the electronic structure of metal alloys and relating it to their performance”, New York, NY, June 2009.
31. ACS Symposium entitled “The Convergence between Theory and Experiment in Surface Chemistry and Heterogeneous Catalysis” organized by John Yates in honor of Jens Norskov (the recipient of the 2009 Gabor Somorjai award for

- creative research in catalysis) , “Measuring the electronic structure of metal alloys and relating it to their performance”, ACS meeting, Salt Lake City, April 2009
32. Lindsay lectureship at the Department of Chemical Engineering at Texas A&M University, "Design of heterogeneous (Electro)catalysts guided by molecular insights", College Station, November 2008.
 33. Gordon Research Conference on Catalysis, "Design of heterogeneous (Electro)catalysts guided by molecular insights", NH, June, 2008
 34. Hydrocarbon Selective Oxidation and Syngas Conversion Catalysis Conference, "Design of heterogeneous (Electro)catalysts guided by molecular insights", Xiamen, China, July, 2008.
 35. International Symposium on Creation and Control of Advanced Selective Catalysis Celebrating the 50th Anniversary of Catalysis Society of Japan "(Electro)catalyst design guided by molecular insights: controlling carbon poisoning of Ni (electro)catalysts by alloying", Kyoto, Japan, July 2008,.
 36. Transatlantic Frontiers in Chemistry Symposium, “Catalysis at nano length scales”, England, August 2008.
 37. DOE NETL symposium “Hybrid theoretical/experimental studies aimed at the development of carbon- and sulfur-tolerant reforming catalysts”, Pittsburgh, PA, April, 2008.
 38. University of Colorado, "Design of heterogeneous (Electro)catalysts guided by molecular insights", Boulder, January 2008.
 39. Colorado School of Mines, "Design of heterogeneous (Electro)catalysts guided by molecular insights", Golden, January 2008.
 40. ACS annual meeting, Controlling carbon chemistry on Ni surfaces by alloying: First principles approaches toward carbon-tolerant alloy catalysts and electrocatalysts”, New Orleans, April 2008
 41. The City College of New York, Department of Chemical Engineering "Design of heterogeneous (Electro)catalysts guided by molecular insights”, New York City, February 2008.
 42. Keynote, ACS Colloids and Surface Science: “Surface chemistry of carbon on Ni and Ni-alloys: carbon-tolerant hydrocarbon reforming catalysts from molecular insights”, Newark, DE, June 2007.
 43. “Selectivity in Heterogeneous Ethylene Epoxidation on Ag: From Fundamental Studies to Rational Catalyst Design”, Ψ_K network of excellence (Jens K. Norskov, Matthias Scheffler, Juergen Hafner, Meeting title: “Novel materials from First Principles”), June, 2004, Copenhagen, Denmark.
 44. ACS Colloids and Surface Science Meeting, “Heterogeneous catalysis by gold: DFT and ab initio thermodynamic investigations of Au oxidation state and the role of oxide supports”, Boulder, CO, June 2006.

45. ACS annual meeting, “Controlling carbon chemistry on Ni surfaces by the surface alloying: An ab-initio approach towards carbon-tolerant alloy catalysts for chemical energy conversion”, Boston, August, 2007
46. Purdue University, “Ab-initio approach to heterogeneous catalysis“, Purdue University, Indiana, October, 2005
47. Ford Motor Company, “First principles approaches to hydrogen economy and sustainability”, Dearborn, Michigan; October 2004.
48. Michigan Catalysis Society Annual Symposium, “From surface chemistry to novel heterogeneous catalysts”, Ann Arbor, Michigan, April 2005.
49. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Department of Chemical Engineering, Case Western Reserve University, Cleveland, OH, 2003
50. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Department of Chemical Engineering, University of California Los Angeles, Los Angeles, CA, 2003
51. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Department of Chemical Engineering, University of Michigan, Chemistry Department Ann Arbor, MI, 2004
52. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Michigan Catalyst Society, Livonia, MI, 2004
53. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Delphi Automotive Company, Flint, MI, 2005
54. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Max Planck Society Meeting, Straslund, Germany, 2004
55. Ethylene epoxidation on Au: First-principles design of more selective catalysts, International Fritz-Haber Conference, Munich, Germany, 2004
56. Ethylene epoxidation on Au: First-principles design of more selective catalysts, Fritz Haber Institute, Berlin, Germany, 2003

Recent Conference Presentations (2004-present), presenter is underlined

1. Hongliang Xin, Suljo Linic “Understanding of environment-dependent mechanisms of alkali promotion in heterogeneous catalysis using first-principles based Monte Carlo simulation”, AIChE annual meeting, Minneapolis, October, 2011
2. Hongliang Xin, Phillip Christopher, Suljo Linic “Energetic electron induced chemical reactions on metal surfaces: first-principles based electron scattering model”, AIChE annual meeting, Minneapolis, October, 2011
3. Marimuthu Andiappan, Phillip Christopher, Suljo Linic “Surface plasmon-enhanced selective molecular sensing using unique silver nanoaggregates”, AIChE annual meeting, Minneapolis, October, 2011

4. David B. Ingram, Suljo Linic “Composite plasmonic metal/semiconductor photoelectrodes for overall water splitting”, AIChE annual meeting, Minneapolis, October, 2011
5. Phillip Christopher, Hongliang Xin, Suljo Linic “Plasmonic nanostructures as platforms for efficient coupling of visible light and thermal energy to drive chemical transformations”, AIChE annual meeting, Minneapolis, October, 2011
6. Adam Holewinski, Suljo Linic “Pt-free electrocatalysts for efficient oxygen reduction in alkaline fuel cells: experimental and computational insights”, AIChE annual meeting, Minneapolis, October, 2011
7. Hongliang Xin, Suljo Linic “Development of predictive models for screening multimetallic electrocatalysts”, AIChE annual meeting, Minneapolis, October, 2011
8. Phillip Christopher, Suljo Linic “Shape- and size-specific chemistry of Ag nanostructures in catalytic ethylene epoxidation”, AIChE annual meeting, Minneapolis, October, 2011
9. Marimuthu Andiappan, Jianwen Zhang, Suljo Linic “Visible light enhanced selective propylene epoxidation over copper based catalyst”, AIChE annual meeting, Minneapolis, October, 2011
10. Hongliang Xin, Suljo Linic, “Exceptions to the d-Band Model of Chemisorption On Metal Surfaces: The Role of Repulsion Between Adsorbate States and Metal d-States”, 22nd NACS Meeting, June 7, 2011, Detroit, MI
11. Adam Holowinski, Suljo Linic, “Oxygen Reduction On Metals in Acidic and Basic Media: Insights toward design of Pt-free electrocatalysts”, 22nd NACS Meeting, June 7, 2011, Detroit, MI
12. Phillip Christopher, Hongliang Xin, Suljo Linic, “Multiple Stimuli Driven Catalysis: Catalytic Processes at Lower Temperatures Driven by Solar and Thermal Energy”, 22nd National Annual Meeting of the North American Catalysis Society, Detroit, Michigan, June 2011.
13. David B. Ingram, Suljo Linic, "Novel Composite Photocatalysts for Visible Light Water Splitting", 22nd biannual North American Meeting of the North American Catalysis Society, Detroit, MI, June 2011.
14. E. Nikolla, S. Linic, Improving carbon tolerance of Ni electro(catalysts) by alloying, ACS Annual Meeting, Anaheim, CA, 03/2011.
15. D. Ingram, S. Linic, Visible light semiconductor photocatalysis enhanced by Ag nanoparticle plasmon resonance, ACS Annual Meeting, Anaheim, CA, 03/2011.
16. P. Christopher, S. Linic, Optically active metallic nanostructures as platforms for efficient coupling of thermal and photonic stimuli for energy efficient chemical conversion, ACS Annual Meeting, Anaheim, CA, 03/2011.
17. Hongliang Xin, Suljo Linic, “Exceptions to the *d*-Band Model of Chemisorption On Metal Surfaces: The Dominant Role of Repulsion Between Adsorbate States and Metal *d*-States”, Annual Aiche meeting, 11/2010, Salt Lake City, UT
18. Hongliang Xin, Suljo Linic, “Developing Relationships Between the Local Geometric Structure and Chemical Reactivity of Alloy Catalysts Based On Their Measured Electronic Structure”, Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT

19. Hongliang Xin, Suljo Linic, "First-Principles Investigation of the Environment-Dependent Mechanisms of Alkali Promotion in Heterogeneous Catalysis", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
20. Phillip Christopher, Suljo Linic, "Size and shape specific chemistry of uniform, well-defined Ag nanoparticles of different shapes in catalytic ethylene epoxidation", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
21. Phillip Christopher, Suljo Linic, "Optically active metallic nano-structures for efficient coupling of thermal and photonic stimuli for energy efficient chemical conversion", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
22. Phillip Christopher, David B. Ingram, Suljo Linic, "Exploiting recent advancement in the field of nanotechnology in heterogeneous catalysis: shaped metallic nanostructures as selective catalysts, photo-catalysts and platform for the characterization of surface chemical reactions", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
23. David B. Ingram, Phillip Christopher, Suljo Linic, "Visible light semiconductor photocatalysis enhanced by Ag nanoparticle plasmon resonance", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
24. Adam Holewinski, Suljo Linic, "Comparative Studies of Oxygen Reduction On Metals in Acidic and Basic Media: Experimental and Computational Insights", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
25. Siris Laursen, Suljo Linic, "The Support Effect in Heterogeneous Catalysis by Oxide Supported Gold (Au): A Combined Experimental and Theoretical Investigation", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
26. Neil M. Schweitzer, Joshua Schaidle, Suljo Linic and Levi Thompson, "Strong Interactions Between Molybdenum Carbide and Metal Catalysts: The Source of Enhanced Dispersion and Catalytic Activity", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
27. Eranda Nikolla, Suljo Linic, "Improving Carbon-Tolerance of Ni Reforming Catalysts and Electro-Catalysts by Surface Alloying and the Impact of Alloying On the Surface Chemistry", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
28. Hongliang Xin, Suljo Linic, "First-Principles Investigation of Alkali Promotion Mechanism in Oxidation Reactions Over Ag(111) Surfaces", Annual Aiche meeting, scheduled 11/2009, Nashville, TN
29. Phillip Christopher, Suljo Linic, "Targeted, Well-Defined, and Uniform Ag Nanostructures as Highly Selective Olefin Epoxidation Catalysts" Annual Aiche meeting, scheduled 11/2009, Nashville, TN
30. Siris Laursen, Suljo Linic, "Investigation of the Catalytically Active Site in Oxidation Catalysis by Gold: Insights From First Principles", Annual Aiche meeting, scheduled 11/2009, Nashville, TN
31. Eranda Nikolla, Johannes Schwank, Suljo Linic, "Improving Long-Term Stability of Reforming Catalysts and Electro-Catalysts: From First Principles Studies to Novel Alloy Catalysts", Annual Aiche meeting, scheduled 11/2009, Nashville, TN
32. David B. Ingram, Adam Holewinski, Suljo Linic, "First-Principles Analysis of the Activity of Transition and Noble Metals in the Direct Utilization of Hydrocarbon

- Fuels at Solid Oxide Fuel Cell Operating Conditions”, Annual Aiche meeting, scheduled 11/2009, Nashville, TN
33. Phillip Christopher, David Ingram, Suljo Linic, “Exploiting the Optical Properties of Well-Defined Nano-Structures for Photo-Catalytic Applications”, Annual Aiche meeting, scheduled 11/2009, Nashville, TN
 34. Suljo Linic, Hongliang Xin, Neil Schweitzer, Eranda Nikolla, “Measuring and Relating the Electronic Structure of Alloys to Their Chemical and Catalytic Performance”, Annual Aiche meeting, scheduled 11/2009, Nashville, TN
 35. Neil M. Schweitzer, Suljo Linic, Levi Thompson, “An Investigation of the Nature of Active Sites On Pt/Mo₂C Water-Gas Shift Catalysts”, Annual Aiche meeting, scheduled 11/2009, Nashville, TN
 36. Siris Laursen, Suljo Linic “The Effect of the Gold–Oxide Interface on the Catalytic Chemistry of Au”, 21st National Annual Meeting of the North American Catalysis Society, San Francisco (CA), June, 2009.
 37. Phillip Christopher, Suljo Linic "The effect of Ag particle shape and surface structure on ethylene epoxidation selectivity", 21st National Annual Meeting of the North American Catalysis Society, San Francisco (CA), June, 2009.
 38. Hongliang Xin, Suljo Linic, “Adsorbate-adsorbate Interactions on Metal Surfaces: First-Principles Studies of Alkali Promotion in Chemical Reactions over Ag(111)”, 21st National Annual Meeting of the North American Catalysis Society, San Francisco (CA), June, 2009.
 39. Eranda Nikolla, Neil Schweitzer, Hongliang Xin, Suljo Linic, “Measuring the electronic structure of metal alloys and relating it to their performance”, 21st National Annual Meeting of the North American Catalysis Society, San Francisco (CA), June, 2009.
 40. David Ingram, Suljo Linic, "Exploiting the optical properties of well-defined nano-structures for photo-catalytic applications", Michigan Catalysis Society Annual Symposium, May 12, 2009 University of Michigan, Ann Arbor
 41. Phillip Christopher, Suljo Linic, “Well-defined metallic nano-structures as highly selective heterogeneous catalysts”, ACS meeting, Salt Lake City, April 2009
 42. David Ingram, Suljo Linic, "First Principles Studies of Electrochemical Reactions at Solid Oxide Fuel Cell (SOFC) Electrodes", AIChE National Conference, November 18, 2008 Philadelphia, Pennsylvania
 43. Siris Laursen and Suljo Linic, "Relating the Electronic Structure of the Oxide Support to the Chemical Activity of Au/oxide Catalysts: A First Principles Study", American Institute of Chemical Engineers, Philadelphia, Pennsylvania, USA, Nov, 2008.
 44. Neil M. Schweitzer, Suljo Linic, Levi Thompson, “Platinum Supported on Molybdenum Carbide for the Water-Gas Shift Reaction, a Theoretical and Experimental Study”, American Institute of Chemical Engineers Annual Meeting, Philadelphia, Pennsylvania, November 2008
 45. Eranda Nikolla, Suljo Linic, Predicting Catalytic Activity from Measured Electronic Structure of Supported Catalytic Materials: Supported Ni Versus Ni Alloys, AIChE Annual Meeting, Philadelphia, PA, Nov 2008

46. Eranda Nikolla, Suljo Linic, Improving Long-Term Stability of SOFC Anodes: First Principles Approaches toward Carbon-Tolerant Alloy Electrocatalysts, AIChE Annual Meeting, Philadelphia, PA, Nov 2008
47. Hongliang Xin, Suljo Linic, "Adsorbate-Adsorbate Interactions In Heterogeneous Catalysis: First Principle DFT and Statistical Mechanics Studies of Impact of Alkalis on Oxidation Reactions", AIChE Annual Meeting, Philadelphia, PA, United States, Nov., 2008.
48. David Ingram, Suljo Linic, "First Principles Studies of Electrochemical Reactions at Solid Oxide Fuel Cell (SOFC) Electrodes", American Institute of Chemical Engineers Annual Meeting, Philadelphia, Pennsylvania, November, 2008
49. Phillip Christopher, Suljo Linic. "Engineering Selectivity In Heterogeneous Catalysis: The Impact of Ag Surface Structure on Ethylene Epoxidation Selectivity", AIChE Annual Meeting, Philadelphia, PA, November, 2008.
50. David Ingram, Suljo Linic, "Electrochemistry from first principles: Studies of electrochemical oxidation reactions at solid oxide fuel cells (SOFCs)", International Congress on Catalysis, Seoul, Korea, July, 2008.
51. Eranda Nikolla, Johannes Schwank, Suljo Linic, "Carbon-tolerant reforming alloy catalysts, ACS annual meeting, New Orleans, April 2008.
52. Siris Laursen, Suljo Linic, "Surface chemistry of gold nanostructures deposited on oxides: Oxide-specific O₂ interactions with supported gold and the oxidation state of gold", ACS annual meeting, New Orleans, April 2008
53. Eranda Nikolla, Johannes Schwank, Suljo Linic, "Carbon-tolerant reforming alloy catalysts, ACS annual meeting, New Orleans, April 2008.
54. Phillip Christopher, Suljo Linic, "Engineering Selectivity In Heterogeneous Catalysis: The Impact of Ag Surface Structure on Ethylene Epoxidation Selectivity", MCS Annual Symposium, May, 2008.
55. Siris Laursen, Suljo Linic "Catalysis at nano-scales: impact of oxide support and external conditions on Au/oxide model systems", AIChE annual meeting, Salt Lake City, November, 2007
56. Eranda Nikolla, Suljo Linic, "From molecular studies to novel carbon-tolerant hydrocarbon reforming alloy catalysts, AIChE annual meeting, Salt Lake City, November, 2007
57. Joydeep Mukherjee, David Ingram, Suljo Linic, "First Principles Studies of Electrochemical Reactions at Solid Oxide Fuel Cell (SoFc) Anodes", AIChE annual meeting, Salt Lake City, November, 2007
58. Hongliang Xin and Suljo Linic; "Adsorbate-adsorbate Interactions on Surfaces: First Principles Studies of Alkali Promotion in Chemical Reaction on Surfaces, AIChE annual meeting, Salt Lake City, November, 2007
59. Eranda Nikolla, Suljo Linic, "Rational design of heterogeneous catalysts, AIChE annual meeting, Salt Lake City, November, 2007
60. Eranda Nikolla, Suljo Linic, "From molecular studies to novel carbon-tolerant hydrocarbon reforming alloy catalysts, ACS annual meeting, Boston, August, 2007
61. Joydeep Mukherjee, Suljo Linic, "First Principles Studies of Electrochemical Reactions at Solid Oxide Fuel Cell (SoFc) Anodes", ACS annual meeting, Boston, August, 2007.

62. Siris Laursen and Suljo Linic “Catalysis at nano-scales: impact of oxide support and external conditions on Au/oxide model systems”, ACS annual meeting, Boston, August, 2007.
63. Eranda Nikolla, Suljo Linic, “Controlling carbon surface chemistry on Ni by alloying: Carbon-tolerant hydrocarbon reforming alloy catalysts, ACS annual meeting, Chicago, March, 2007, ACS annual meeting, Chicago, March, 2007
64. Siris Laursen, Suljo Linic, “Surface chemistry of gold nano-structures deposited on oxides: oxide-specific O₂ interactions with supported gold” Michigan Catalysis Society Symposium, Ford CO, May, 2007
65. Siris Laursen, Suljo Linic, “Catalysis at nano-scales: impact of oxide support and external conditions on Au/oxide model systems”, ACS annual meeting, Chicago, March, 2007
66. Joydeep Mukherjee, Suljo Linic, “First Principles Studies of Electrochemical Reactions at Solid Oxide Fuel Cell (Sofc) Anodes”, AIChE Annual Meeting, San Francisco (CA), November, 2006
67. Jeb Adams, Suljo Linic, “Alkali-Promotion in Heterogeneous Catalysis: Dft Studies of the Pressure- and Temperature-Dependant Impact of Alkalis on Oxidation Reactions”, AIChE Annual Meeting, San Francisco (CA), November, 2006
68. Eranda Nikolla, Suljo Linic, “Hybrid theoretical/experimental studies aimed at the development of carbon- and sulfur-tolerant reforming catalysts”, DOE NETL symposium, Philadelphia, PA, September 2006.
69. Joydeep Mukherjee, Suljo Linic, “Pd-based membranes for hydrogen separation: from atomistic understanding to rational design” DOE NETL workshop”, Pittsburgh, PA, May 2006.
70. Eranda Nikolla, Johannes Schwank, Suljo Linic, “Hybrid theoretical/experimental studies aimed at the development of carbon-tolerant reforming catalysts, ACS Colloids and Surface Science Meeting”, Boulder, CO, June 2006.
71. Eranda Nikolla, Johannes Schwank, Suljo Linic, “Hybrid Theoretical/Experimental Studies Aimed at the Development of Carbon-Tolerant Reforming Alloy Catalysts”, AIChE Annual Meeting, San Francisco (CA), November, 2006.
72. Eranda Nikolla, Johannes Schwank, Suljo Linic, “Molecular Insight into Carbon Poisoning of Ni Surfaces: Dft-Guided Formulation of Carbon-Tolerant Steam Reforming Catalysts”, AIChE Annual Meeting, San Francisco (CA), November, 2006.
73. Siris Laursen, Suljo Linic, “Heterogeneous Catalysis by Gold: Oxide-Specific O₂ Interactions with Supported Gold”, AIChE Annual Meeting, San Francisco (CA), November, 2006.
74. Joydeep Mukherjee, Suljo Linic, “First Principles and Kinetic Monte Carlo Investigations of Pd-Based Metallic Membranes for Hydrogen Separation”, AIChE Annual Meeting, San Francisco (CA), November, 2006.
75. S. Laursen, P. Larkowski, S. Linic, “Heterogeneous catalysis by Au: DFT investigations of O₂ interactions with oxide supported Au materials”, AIChE Annual Meeting, Cincinnati (OH), November, 2005

76. J. Adams, S. Linic, "Alkali-Promotion in Heterogeneous Catalysis: DFT Study of the Impact of Alkalis on a Number of Elementary Dissociation Surface Reactions", AIChE Annual Meeting, Cincinnati (OH), November, 2005
77. E. Nikolla, J. Schwank, S. Linic, "First-principles design of carbon-tolerant reforming catalysis", AIChE Annual Meeting, Cincinnati (OH), November, 2005
78. S. Linic, M.A. Barteau, "Ethylene epoxidation on Ag: From fundamental studies to novel catalyst formulation", 13th Congress on Catalysis, Paris, France, July 2004.
79. S. Linic, M. Barteau, Cs Additives in Heterogeneous Catalyst: Proposed Mechanism of Cs-Promotion in Ethylene Epoxidation on Silver, North American Catalysis Society Meeting, Philadelphia (PA), May 2005
80. S. Linic, J. Carlson, M. Scheffler, "Carbon Nano-Materials as Efficient Heterogeneous Catalysts: Fundamental Studies of the Mechanism of Oxidative Dehydrogenation of Ethyl Benzene", AIChE Annual Meeting, Austin (TX), November 2004
81. S. Linic, M. Barteau, "Bimetallic catalysts for ethylene epoxidation designed from first principles", AIChE Annual Meeting, Austin (TX), November 2004
82. S. Linic, M. Barteau, , "Bimetallic catalysts for ethylene epoxidation designed from first principles", Annual ACS Meeting, San Diego (CA), March 2005

Posters

1. Marimuthu Andiappan, Jianwen Zhang, Suljo Linic "Copper based plasmonic catalyst for efficient and selective epoxidation of propene", AIChE annual meeting, Minneapolis, October, 2011
2. Michelle Przybylek, Suljo Linic, "Hematite Films for Photo-catalytic Hydrogen Production: Using Plasmonic Nanoparticles to Enhance Water Splitting Activity", 22nd NACS Meeting, June 7, 2011, Detroit, MI
3. Phillip Christopher, Suljo Linic, "Combining molecular level insights with advanced synthesis strategies to design (photo)catalytic materials: Efficient chemical processing utilizing thermal and solar stimuli", Annual Aiche meeting "Meet the faculty candidate session", scheduled 11/2010, Salt Lake City, UT
4. David B. Ingram and Suljo Linic, "Rational Design of Photo-(Electro-)Catalysts: A Combined Theoretical/Experimental Route to Solar Fuels", Annual Aiche meeting "Meet the faculty candidate session", scheduled 11/2010, Salt Lake City, UT
5. Adam Holewinski, Suljo Linic, "Experimental and Computational Studies of Oxygen Reduction On Platinum and Silver Catalysts in Acidic and Basic Media", Annual Aiche meeting, scheduled 11/2010, Salt Lake City, UT
6. Nikolla E., Schwank J., Linic. S, "Improving long-term stability of SOFC anodes: First Principles approaches toward carbon-tolerant electrocatalysts", North American Catalysis Society (NACS) Annual Meeting, San Francisco CA, 2009
7. Phillip Christopher, Suljo Linic. "Targeted Ag Nano-Structures as Highly Selective Partial Oxidation Catalysts", AIChE Annual Meeting, Philadelphia, PA, November, 2008
8. David Ingram, Suljo Linic, "Electrochemistry from First Principles: Studies of Electrochemical Transformations at Model Solid Oxide Fuel Cell (SOFC)

- Anodes", American Institute of Chemical Engineers Annual Meeting, Philadelphia, Pennsylvania, November, 2008.
9. Hongliang Xin, Suljo Linic, "Adsorbate-adsorbate Interactions on Metal Surfaces: First Principles Studies of Alkali Promotion in Chemical Reactions over Ag(111)", AIChE Annual Meeting, Philadelphia, PA, United States, Nov., 2008.
 10. Eranda Nikolla, Johannes Schwank, Suljo Linic, "Carbon-tolerant reforming alloy catalysts, International Congress on Catalysis, Seoul, Korea, July, 2008.
 11. David Ingram, Suljo Linic, "Electrochemistry from First Principles: Studies of Electrochemical Transformations at Model Solid Oxide Fuel Cell (SOFC) Anodes", Annual MCS meeting, May, 2008.
 12. Joydeep Mukherjee, Suljo Linic; "First Principles Studies of the Electrochemistry of Model Solid Oxide Fuel Cells (SOFC) Electrodes", poster, Michigan Catalysis Society Meeting, Ford CO, May, 2007
 13. Hongliang Xin and Suljo Linic; "Adsorbate-adsorbate Interactions on Surfaces: First Principles Studies of Alkali Promotion in Chemical Reaction on Surfaces Michigan Catalysis Society Meeting, Ford CO, May, 2007, poster (first place award)
 14. Hongliang Xin and Suljo Linic; "Adsorbate-adsorbate Interactions on Surfaces: First Principles Studies of Alkali Promotion in Chemical Reaction on Surfaces AIChE annual meeting, Salt Lake City, November, 2007
 15. Siris Laursen, Suljo Linic, "Heterogeneous Catalysis by Gold: Oxide-Specific O₂ Interactions with Supported Gold", AIChE Annual Meeting, San Francisco (CA), November, 2006. (first place award)

TEACHING

Courses taught in last 5 years (course number, term, enrollment, and the evaluations by students for Q1 and Q2 are listed, Note: question Q1 was "Overall, this was an excellent course", and question Q2 was "Overall, this is an excellent instructor", the evaluation scale was from 1 (strongly disagree) to 5 (strongly agree))

Course #	Course title	Teaching Role	Term	Enrollment/ Responses to Q1 and Q2	Q1	Q2
<i>ChE344</i>	<i>Chemical Reaction Engineering</i>	<i>Sole instructor</i>	<i>Winter 10 (current semester)</i>			
<i>ChE341</i>	<i>Fluid Mechanics</i>	<i>Sole instructor</i>	<i>Winter 05</i>	<i>91/85</i>	<i>4.40</i>	<i>4.56</i>
<i>ChE341</i>	<i>Fluid Mechanics</i>	<i>Sole instructor</i>	<i>Winter 06</i>	<i>124/115</i>	<i>4.62</i>	<i>4.76</i>
<i>ChE341</i>	<i>Fluid Mechanics</i>	<i>Sole</i>	<i>Winter</i>	<i>145/127</i>	<i>4.50</i>	<i>4.73</i>

		<i>instructor</i>	<i>07</i>			
<i>ChE344</i>	<i>Chemical Reaction Engineering</i>	<i>Sole instructor</i>	<i>Winter 09</i>	<i>129/33*</i>	<i>4.00</i>	<i>4.11</i>
<i>ChE696/496</i>	<i>Special Topics: Molecular foundation for heterogeneous catalysts and electro-catalysis</i>	<i>Sole instructor</i>	<i>Winter 08</i>	<i>19/16</i>	<i>4.70</i>	<i>4.70</i>
<i>ChE696/496</i>	<i>Special Topics: Ab-initio electronic structure calculations in engineering</i>	<i>Sole instructor</i>	<i>Fall 05</i>	<i>17/16</i>	<i>4.80</i>	<i>4.80</i>
<i>Che528</i>	<i>Graduate Reaction Engineering</i>	<i>Sole instructor</i>	<i>Fall 06</i>	<i>27/25</i>	<i>4.61</i>	<i>4.54</i>
<i>Che528</i>	<i>Graduate Reaction Engineering (also contained distance learning component)**</i>	<i>Sole instructor</i>	<i>Fall 07</i>	<i>24/22</i>	<i>3.83</i>	<i>3.88</i>
<i>Che528</i>	<i>Graduate Reaction Engineering</i>	<i>Sole instructor</i>	<i>Fall 08</i>	<i>19/14</i>	<i>4.50</i>	<i>4.50</i>

Graduate Elective Courses Developed

CHE 496/696 “Molecular foundation for heterogeneous catalysis and electro-catalysis”

The course addressed numerous topics including:

- 1) Chemical bonding on metal surfaces
- 2) Various experimental tools that are used to study chemical transformations on surfaces at molecular level.
- 3) Various theoretical tools used to study chemical interactions on surfaces.

The material was discussed through a number of examples addressing contemporary issues related to the fields of energy and environment. These examples focused on the chemistry of fuel cells, chemistry of alloys, chemistry on nano-sized catalytic materials, characterization of these materials, relationships between the electronic structure of a material and its (electro)catalytic activity, etc.

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We also discussed strategies that can be utilized to employ molecular insights to identify optimal electro(catalysts) for different electro(chemical) processes. For example, we developed a molecular foundation for a number of important phenomena including Sabatier's principle, Bronsted-Evans-Polanyi (BEP) relationships, volcano curves, and many others.

CHE 496/696 course: "Ab initio Electronic Structure Calculations in Engineering"

This course described various methods of solving the governing equation of quantum mechanics (Schrodinger equation) with a particular emphasis on Density Functional Theory (DFT). Furthermore it was illustrated how to utilize the electronic structure calculations to develop atomistic insights into elementary processes which govern the performance of heterogeneous catalysts, fuel cell electrodes, chemical sensors, etc. We also discussed different methodologies that allow us to use the atomistic insights obtained in the DFT calculations to draw conclusions about macroscopic observables such as catalytic activity and selectivity.

CHE 696/ESE505: Energy Conversion Systems (Fall 2011)

The course focused on discussing electrochemical energy conversion systems. We emphasized fundamental framework for the analysis and development of energy conversion systems

Undergraduate Students Supervised in Research Projects

- 1) Michael Mass, 4th year
- 2) Caitlin Cramer, 2nd year
- 3) Jonathan Bauer, 3rd and 4th year
- 4) Eric Ruddy, 4th year
- 5) Preeta Maitra, 1st, 2nd, and 3rd year
- 6) Kevin Kasunic, 2nd year student
- 7) Adam Holewinski, 3 and 4th year
- 8) Matthew Morabito, 3 and 4th year
- 9) Teresa Misiti, 3 and 4th year
- 10) Suhendra Lie, 3rd year

SERVICE

External Professional Activities (in reverse chronological order)

1. Member of the committee to select new editor-in-chief for the AICHE journal, 2010-2011
2. Coordinator for the Kokes Student Travel Award for North American Catalysis Society meeting in Detroit (06/2011), Obtained funding for the award from NSF and DOE, selected awardees among 204 applicants, and coordinated the process.
3. Editorial Advisory Board for ACS Catalysis, 2010 -
4. Editorial Advisory Board for AICHE journal, 2010 -
5. Elected board member for AICHe Divison 20 (Catalysis and Reaction Engineering)
6. On-site reviewer for the surface science, nanoscience, and catalysis programs at Pacific Northwest National Laboratory (PNNL), March, 2009

7. Invited member of the DOE task team charged to develop long-term plan for the basic energy research (August 2007). Along with four other faculty members drafted a document describing the grand challenges in the basic energy research.
8. Programming Chair, AIChE Division 20c, 2007-2008
9. Programming Vice-Chair, AIChE Division 20c, 2006-2007
10. Chair, Michigan Catalysis Society, 2009-2010
11. President, Michigan Catalysis Society, 2008-2009
12. Vice-president, Michigan Catalysis Society, 2007-2008
13. Treasurer, Michigan Catalysis Society, 2006-2007
14. National Meetings Sessions (chair and co-chair)
 - Electro- and Photo-catalysis (2 session), Aiche Annual Meeting, Minneapolis (MN) 11/2010
 - Computational Catalysis (2 sessions), Aiche Annual Meeting, Salt Lake City (UH) 11/2010
 - Rational Catalyst Design (2 session), Aiche Annual Meeting, Salt Lake City (UH) 11/2010
 - Electro-catalysis, Aiche Annual Meeting, Salt Lake City (UH) 11/2010
 - Fundamental Catalysis, 21st National Annual Meeting: North American Catalysis Society, San Francisco, CA, 06/2009.
 - Computational Catalysis (2 sessions), Aiche Annual Meeting, Nashville (PA) 11/2009
 - Rational Catalyst Design (2 session), Aiche Annual Meeting, Nashville (PA) 11/2009
 - Electrocatalysis, Aiche Annual Meeting, Nashville (PA) 11/2009
 - Fundamental Catalysis, 21st National Annual Meeting: North American Catalysis Society, San Francisco, CA, 06/2009.
 - Computational Catalysis (2 sessions), Aiche Annual Meeting, Philadelphia (PA) 11/2008
 - Computational Catalysis (organizer of the entire symposium (4 different sessions) on the topic), ACS annual meeting, New Orleans, LA, 04/2008
 - Computational Catalysis (2 session), Aiche Annual Meeting, Salt Lake City (Utah) 11/2007
 - Fundamentals of Electro-catalysis, Aiche Annual Meeting, Salt Lake City (Utah) 11/2007
 - Computational Catalysis (2 session), Aiche Annual Meeting, San Francisco (CA) 11/2006
 - Catalyst Deactivation, Aiche Annual Meeting, Salt Lake City (Utah) 2007
 - Fundamentals of Surface Reactivity from Ab Initio Modeling, Aiche Annual Meeting, Cincinnati (OH) 11/2005
 - Rational Catalyst Design, Aiche Annual Meeting, Cincinnati (OH) 11/2005
 - Catalyst Poisoning, Aiche Annual Meeting, Cincinnati (OH) 11/2005
15. Regular reviewer for Nature Materials, Journal of the American Chemical Society, Physical Review Letters, Surface Science, Journal of Physical Chemistry B and C, Journal of Catalysis, Physical Review B, Angewandte Chemie, and many others.

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16. Regular proposal reviewer for NSF, ACS-PRF, Army, ONR, and DOE.
17. Member of proposal review panels for:
 - i. NSF-CTS, 2008, ~30 large proposals reviewed
 - ii. NSF-CTS, 2006, ~30 large proposals reviewed
 - iii. DOE-BES, 2006, ~20 large proposals reviewed
 - iv. NSF-Career-Chemistry, ~ 12 proposals
18. Memberships: American Institute of Chemical Engineers (AIChE), American Chemical Society (ACS), North American catalysis Society, Tau Beta Pi National Engineering Honor Society, Phi Eta Sigma National Honor Society

Professional Activities (internal):

1. Director of Energy Systems Engineering Program. This is a masters program by the College of Engineering, currently advises over 200 students enrolled in the program.
2. CHEAC member (Executive committee in the department of Chemical Engineering), 2010-
3. Member of the University search committee to identify potential hires in the field of energy
4. Member of Graduate Program Committee, 2005-
Handling the graduate program, Developed Teaching Fellowship Program
5. Chair and co-chair of Graduate Student Recruiting Committee, 2005-
 - a. Review applications for graduate program, make admission decisions.
 - b. Planned and organized events for the graduate student recruiting weekend, 2006- .
6. Member of the Faculty Search Committee, 2007-2008 and 2008-2009
7. Faculty Advisor to the Undergraduate Aiche Chapter, 2004-2009
8. Member of the committee designed to identify strategic directions for the department , 2007
9. Member the College Faculty Search Committee in the area of distributed power, 2007-2008.
10. Member the College Battery Task Team that has been established by the Dean to define the direction that the College should follow in expanding its research efforts in the field of energy storage and delivery, 2006-2007.
11. Member of College nominating Committee for 2009