**Donna A. Chen**

**Vitae**

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**PROFESSIONAL PREPARATION**

1. Postdoctoral Associate, Sandia National Laboratories, Livermore, CA 1997-1999

STM/AFM studies of metal island growth on oxide surfaces

2. Harvard University, Ph.D. in Physical Chemistry, 1997

Dissertation: "Characterization of Bimetallic Surfaces: Reactions of Alcohols and Thiols on Cobalt and Mixed Cobalt-Oxygen Overlayers on Mo(110)"

3. Harvard University, M.A. in Chemistry, 1994, GPA 3.9/4.0

4. Rochester Institute of Technology, B.S. in Chemistry, 1992, GPA 4.0/4.0

**APPOINTMENTS**

1. Professor of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, 2012-present

2. Associate Professor of Chemistry and Biochemistry, University of South Carolina, Columbia,

SC 2005-2011

3. Adjunct Professor in Chemical Engineering, University of South Carolina, Columbia, SC 2007-present

4. Assistant Professor of Chemistry and Biochemistry, University of South Carolina, Columbia, SC 1999-2005

5. Visiting Guest, Brookhaven National Laboratory, Upton, NY 2000-present

6. Visiting Scientist, Sandia National Laboratories, Livermore, CA, 1999-2000

7. Cooperative Education Research Student, Eastman Kodak Company, Rochester, NY, 1989- 1992

**AWARDS**

Carolina Trustees Professorship, 2020

Mungo Distinguished Professor of the Year Award for undergraduate teaching, 2019

Fellow of the AVS (American Vacuum Society), 2018

Fellow of the American Association for the Advancement of Science, 2018

Ada B. Thomas Faculty Advisor Award, 2018

South Carolina Chemist of the Year, awarded by the SC Section of ACS, 2017

USC Educational Foundation Research Award, 2016

International Precious Metals Institute Carol Tyler Award, 2012

Michael J. Mungo Undergraduate Teaching Award, 2010

South Carolina Governor's Young Researcher Award for Excellence in Science, 2008

NSF CAREER Award, 2002

Army Young Investigator Award, 2000

Union Carbide Innovation Recognition Award, 1997

ACS Senior Achievement Award, 1992; RIT Physical Chemistry Award, 1992; Nathaniel Rochester Society Scholarship, 1991-1992;

Rochester Institute of Technology Outstanding Scholar Award, 1991; RIT Organic Chemistry Award, 1991; RIT Kearse Award for Excellence in the Liberal Arts, 1991; RIT Senior Analytical Chemistry Award, 1990; RIT Olin Charitable Trust Fellowship, 1990; RIT Polymer Chemistry Award, 1989; RIT Freshman Chemistry Achievement Award, 1988

**Educational Activities**

The PI’s current research group consists of the following individuals:

Kamolrat Metavarayuth, Sumit Beniwal (postdoctoral associates)

Deependra Shakya, Sharfa Farzandh, Narayan Acharya (graduate students)

Previous group members

Postdoctoral associates: Dr. John Reddic (4/00-8/01), Dr. Yong-Cheol Kang (6/02-3/03), Dr. Kris Varazo (10/01-8/03), Dr. Shuguo Ma (6/03-3/05), Dr. Osman Ozturk (11/02-4/05), Dr. Joon Park (3/05-11/07); Dr. Xiaofeng Hu (4/06-10/07), Dr. Wei He (6/09-8/10), Dr. Kedar Manandhar (8/10- 3/11), Hui Yan (10/11-10/13)

Graduate students: Jing Zhou (1/00-5/04), W. Shane Ricker (11/00-8/01), Brian Long (1/00-9/02),

Frederick Parsons (1/02-8/04), Timothy Black (12/03-12/05), Patrick Purcell (11/05-05/06);

Jay Ratliff (12/03-05/09); Sean Conner (5/07-3/08), Brett Cagg (12/09-8/11), Mara Levine (11/10- 5/12), Samuel Tenney (6/07-5/12), Randima Galhenage (11/10-5/15), Audrey Duke (11/11-5/16), Kangmin Xie (11/11-12/16), Grant Seuser (11/13-8/18), Amy Brandt (11/14-08/19), Thathsara Maddumapatabandi (11/14-08/19)

Undergraduates: Manasi Sinha (8/00-5/02), Stephen Bennett (1/02-8/02), James Karlinsey (REU 6/00-8/00), Adam Cohen (REU 6/02-8/02), Jay Ratliff (REU, 6/02-8/02); Jamie Houseknecht (REU 6/04-8/04), Kate Perrine (8/03-7/05), Katie Pizzolato (1/03-5/04); Matthew Keidel (8/07-1/07), Christopher Roberts (8/08-8/09), Laura Golson (6/09-12/09), Corey Lucas (6/09-5/10), Brian Molesky (6/10-6/11), Nhat Nguyen (1/14-12/14), Tyler Hernandez (9/14-5/15), Lauren Hensley (9/16-5/17), Gregory King (1/18-5/18), Jonathan Chestnut (9/18-5/19), David Assad (1/19-5/19)

High School students: Sheena Lazenby, Amy Stout (6/00-8/00), Vamsi Gorrepati (6/18-12/19)

Copenhaver Fellows (pregraduate summer students): Jie Qin (7/01-8/01), Gregory Love (6/00- 8/00), William Morris (5/02-7/02), Abigail Waldron (5/16-8/16)

**Synergistic Activities**

Science Advisory Committee for Center for Functional Nanomaterials at Brookhaven National Laboratory (2017-present); Program Chair of American Vacuum Society Surface Science Division Executive Board (2017-present); Advisory Board for Rochester Institute of Technology School of Chemistry and Materials Science (2017-present); Advisory Board for Integrated Mesoscale Architectures for Sustainable Catalysis Energy Frontier Research Center (2018-present); Editorial Advisory Board for *Journal of Physical Chemistry Letters* (2020-present); Co-organizer of the "Fundamental Discoveries in Heterogeneous Catalysis" Focus Topic for the American Vacuum Society (2016-2018); Member of International Advisory Committee for European Conference on Surface Science (2015-2017); Editorial Advisory Board for *Accounts of Chemical Research* (2014-2016); USC Chemistry Department Curriculum Committee (chair, 2010-present); Lecturer in South Carolina Citizens School of Nanotechnology (2000-2007); Mentor in USC's First-Year Scholars Program; Judge for USC Central South Carolina Science and Engineering Fair; Pilot Advisor for USC's Student Success Collaborative Project; Development and implementation of science modules for 5th grade students at Rosewood Elementary School

**Publications**

***From Work at USC***

1. G. A. Leith, A. M. Rice, B. J. Yarbrough, A. A. Berseneva, R. T. Ly, C. N. Buck, A. J. Brandt, D. A. Chen, B. W. Lamm, M. Stefik, K. S. Stephenson, M. D. Smith, A. K. Vannucci, P. J. Pellechia, S. Garashchuk, N. B. Shustova,"A Dual Threat: Redox-Activity and Electronic Structures of Well-Defined Donor-Acceptor Fulleretic Covalent-Organic Materials," *Angewandte Chemie*, **2020,** *59*, 6000-6006.
2. D. M. Shakya, O. A. Ejegbavwo, T. Rajeshkumar, S. D. Senanayake, A. J. Brandt, S. Farzandh, N. Acharya, A. M. Ebrahim, A. I. Frenkel, N. Rui, G. L. Tate, J. R. Monnier, K. D. Vogiatzis, N. B. Shustova and D. A. Chen, "Metal Nodes in Bimetallic Metal-Organic Frameworks as Sites for Hydrogenation Reactions," *Angewante Chemie*, **2019**, *58*, 16533-16537.
3. A. J. Brandt, T. D. Maddumapatabandi, D. M. Shakya, K. Xie, G. S. Seuser, S. Farzandh and D. A. Chen, "Water-gas Shift Activity on Pt-Re Surfaces and the Role of the Support," **2019**, *Journal of Chemical Physics, 151,* 234714.
4. E. Barrow, G. S. Seuser, A. H. Hiroko, D. A. Chen, J. Lauterbach, and K. Asakura, "A New Interpretation of the √7x√7 R19.1 Degrees Structure for P Adsorbed on a Ni(111) Surface," *Science and Technology of Advanced Materials*, **2019**, 20, 379-387.
5. R. P. Galhenage, H. Yan, T. B. Rawal, D. Le, A. J. Brandt, T. D. Maddumapatabandi, N. Nguyen, T. S. Rahman, and D. A. Chen,"MoS2 Nanoclusters Grown on TiO2: Evidence for New Adsorption Sites at Edges and Sulfur Vacancies," *Journal of Physical Chemistry C,* **2019***,* 123, 7185-7201.
6. G. S. Seuser, R. Banerjee, K. Metavarayuth, A.J. Brandt, T.D. Maddumapatabandi, S. Karakalos, Y. Lin, J.R. Regalbuto, and D.A. Chen, "Understanding Uptake of Pt Precursors During Strong Electrostatic Adsorption on Single-Crystal Carbon Surfaces," *Topics in Catalysis*, **2018**, 61, 379-388.
7. R. Banerjee, D. A. Chen, S. Karakalos, M. C. Piedboef, N. Job, and J. R. Regalbuto, "Ambient Oxidation of Ultrasmall Platinum Nanoparticles on Microporous Carbon Catalyst Supports," *ACS Applied Nanomaterials,* **2018**, 1, 5876-5884.
8. A.M. Rice, E.A. Dolgopolova, B.J. Yarbrough, G.A. Leith, C.R. Martin, K.S. Stephenson, R.A. Heugh, A.J. Brandt, D.A. Chen, S.G. Karakalos, M.D. Smith, K.B. Hatzell, P.J. Pellechia, S. Garashchuk, N.B. Shustova, "Stack the Bowls: Tailoring the Electronic Structure of Corannulene-Integrated Crystalline Materials," *Angewandte Chemie*, " **2018**, 57, 11310-11315.
9. Duke, A. S.; Xie, K.; Brandt, A. J.; Maddumapatabandi, T. D.; C., A. S.; Heyden, A.; Monnier, J. R.; Chen, D. A. "Understanding Active Sites in the Water-Gas Shift Reaction for Pt-Re Catalysts on Titania," *ACS Catalysis*, **2017**, 7, 2597-2606.
10. E.A. Dolgopolova; A.J. Brandt; O.A. Ejegbavwo; A.S. Duke, T.D. Maddumapatabandi; R.P. Galhenage; B.W. Larson; O.G. Reid; S.C. Ammal; A. Heyden; M. Chandrashekhar; V. Stavila; D.A. Chen; N.B. Shustova."Electronic Properties of Bimetallic Metal-Organic Frameworks (MOFs): Tailoring the Density of Electronic States through MOF Modularity," *Journal of the American Chemical Society*, **2017,** 139, 5201-5209.
11. Duke, A. S.; Xie, K.; Monnier, J. R.; Chen, D. A. "Superior Long-Term Activity for a Pt-Re Alloy Compared to Pt in Methanol Oxidation Reactions," *Surface Science*, **2017**, 657, 35-43.
12. R. P. Galhenage, K. Xie, H. Yan, G. S. Seuser, and D. A. Chen, "Understanding the Growth, Chemical Activity, and Cluster-Support Interactions for Pt-Re Bimetallic Clusters on TiO2(110)," *Journal of Physical Chemistry C*, **2016**, 120, 10866-10878.
13. T. R. Garrick, W. Diao, J. M. Tengco, E. A. Stach, S. D. Senanayake, D. A. Chen, J. R. Monnier and J. W. Weidner, "The Effect of the Surface Composition of Ru-Pt Bimetallic Catalysts for Methanol Oxidation," *Electrochimica Acta*, **2016**, 195, 106-111.
14. A. S. Duke, E. A. Dolgopolova, R. P. Galhenage, S. C. Ammal, A. Heyden, M. D. Smith, D. A. Chen and N. B. Shustova, "Active Sites in Copper-based Metal-Organic Frameworks: Understand Substrate Dynamics, Redox Processes and Valence-Band Structure," *Journal of Physical Chemistry C,* **2015**, 119, 27457-27455.
15. A. S. Duke, R. P. Galhenage, S. A. Tenney, S. C. Ammal, A. Heyden, P. Sutter and D. A. Chen, "*In Situ* Ambient Pressure X-ray Photoelectron Spectroscopy Studies of Methanol Oxidation on Pt(111) and Pt-Re Alloys," *Journal of Physical Chemistry C,* **2015***,* 119, 3082-23093*.*
16. R. P. Galhenage, K. Xie, W. Diao, J. M. Tengco, G. Seuser, J. R. Monnier and D. A. Chen, "Pt-Ru Bimetallic Clusters on HOPG: A Comparison of Vapor Deposition and Electroless Deposition," *Physical Chemistry Chemical Physics*, **2015**, 17, 28354-28363.
17. A. S. Duke, Randima P. Galhenage, S. A. Tenney, P. Sutter and D. A. Chen, "In Situ Studies of Carbon Monoxide Oxidation on Platinum and Platinum-Rhenium Alloy Surfaces," *Journal of Physical Chemistry C,* **2015,** 119, 381-391.
18. R. P. Galhenage, H. Yan, O. Ozturk, A. S. Ahsen, and D. A. Chen, "Understanding the Growth and Chemical Activity of Co-Pt Bimetallic Clusters on TiO2(110): CO Adsorption and Methanol Reaction" *Journal of Physical Chemistry C,* **2014**, 118, 17773-17786.
19. S. A. Tenney, S. I. Shah, H. Yan, B. A. Cagg, M. S. Levine, T. S. Rahman and D. A. Chen, "Methanol Reaction on Pt-Au Clusters on TiO2(110): Methoxy-induced Diffusion of Pt" *Journal of Physical Chemistry C* **2013**, 117, 26998-27006.
20. R. P. Galhenage, H. Yan, S. A. Tenney, N. Park, G. Henkelman, P. Albrecht, D. R. Mullins, and D.A. Chen, "Understanding the Nucleation and Growth of Metals on TiO2: Co Compared to Au, Ni and Pt," *Journal of Physical Chemistry C,* **2013**, 117, 7191-7201.
21. S. A. Tenney, K. Xie, J. R. Monnier, A. Rodriguez, R. P. Galhenage, A. S. Duke, D. A. Chen, "Novel Recirculating Loop Reactor for Studies on Model Catalysts: CO Oxidation on Pt/TiO2(110)," *Review of Scientific Instruments,* **2013**, 84, 104101-1-8.
22. R. P. Galhenage, S. C. Ammal, H. Yan, A. S. Duke, S. A. Tenney, A. Heyden and D. A. Chen, "Nucleation, Growth and Adsorbate-Induced Changes in Composition for Co-Au Bimetallic Clusters on TiO2," *Journal of Physical Chemistry C*, **2012**, 116, 24616-24629.
23. S. A. Tenney, B. A. Cagg, M. S. Levine, W. He, K. Manandhar and D. A. Chen, "Methanol Oxidation on TiO2-Supported Au Clusters: Evidence for Reaction at Interfacial Sites" *Surface Science*, **2012**, 606, 1233-1243.
24. S. A Tenney, W. He, C. C. Roberts, J. S. Ratliff, S. I. Shah, G. S. Shafai, V. Turkowski, T. S. Rahman and D. A. Chen, "CO-induced Diffusion of Ni Atoms to the Surface of Ni-Au Clusters on TiO2(110)," *Journal of Physical Chemistry C,* **2011**, 115, 11112-11123.
25. S. A. Tenney, J. S. Ratliff, W. He, D. R. Mullins, and D. A. Chen, "Characterization of Au-Pt and Au-Ni Clusters on TiO2(110)," *Topics in Catalysis*, **2011**, 54, 42-55.
26. S. A. Tenney, J. S. Ratliff, C. R. Roberts, W. He, S. C. Ammal, A. Heyden and D. A. Chen, "Adsorbate-Induced Changes in the Surface Composition of Bimetallic Clusters: Au-Pt on TiO2(110)," *Journal of Physical Chemistry C,* **2010**,114, 21652-21663.
27. D. A. Chen, J. S. Ratliff, X. Hu, W. O. Gordon, S. D. Senanayake and D. R. Mullins,"Dimethyl Methylphosphonate Chemistry on Fully Oxidized and Partially Reduced Ceria Thin Films" *Surface Science* **2010**, 604 (5-6), 574-587.
28. Y. Gu, G. Wu, X. Hu, D. A. Chen, T. Hansen, H. C. zur Loye, H. J. Ploehn "PAMAM-stablized Pt-Ru Nanoparticles for Methanol Electro-oxidation," *Journal of Power Sources*, **2010**, 195, 425-434.
29. J .S. Ratliff, S. A. Tenney, X. Hu, S. F. Conner, S. Ma, and D. A. Chen, "Decomposition of Dimethyl Methylphosphonate on Pt, Au and Au-Pt Clusters Supported on TiO2(110)," *Langmuir*, **2009**, 25 (1) 216-225.
30. J. B. Park, S. F. Conner, and D. A. Chen, "Bimetallic Pt-Au Clusters on TiO2(110): Growth, Surface Composition and Metal-Support Interactions" *Journal of Physical Chemistry C,* **2008**, 112, 5490-5500.
31. O. Ozturk, J. B. Park, T. J. Black, J. A. Rodriguez, J. Hrbek, D. A. Chen, "Methanethiol Chemistry on TiO2-supported Ni Clusters," *Surface Science*, **2008**, 602, 3077-3088.
32. O. Ozturk, J. B. Park, S. Ma, J. Ratliff, J. Zhou, D. R. Mullins, and D. A. Chen, "Probing the Interactions of Pt, Rh and Bimetallic Pt-Rh Clusters with the TiO2(110) Support" *Surface Science,* **2007,** 601, 3099-3113.
33. J. B. Park, J. S. Ratliff, S. Ma and D. A. Chen, "Understanding the Reactivity of Oxide-supported Bimetallic Clusters: Reaction of NO with CO on TiO2(110)-supported Pt-Rh Clusters" *Journal of Physical Chemistry C*, **2007**, 111 (5), 2165-2176.
34. J. B. Park, J. S. Ratliff, S. Ma, and D. A. Chen, “In Situ Scanning Tunneling Microscopy Studies of Bimetallic Cluster Growth: Pt-Rh on TiO2(110)” *Surface Science,* **2006**, 600, 2913-2923.
35. N. P. Subramanian, S. P. Kumaraguru, H. Colon-Mercado H, H. Kim, B. N. Popov, T. Black, and D. A. Chen, "[Studies on Co-based Catalysts Supported on Modified Carbon Substrates for PEMFC Cathodes](http://apps.isiknowledge.com:80/WoS/CIW.cgi?SID=F24662kf5C9GnDC1dD1&Func=Abstract&doc=1/5)," *Journal of Power Sources*, **2006**, 157, 56-63.
36. O. Ozturk, T. J. Black, K. Perrine, K. Pizzolato, C. T. Williams, F.W. Parsons, J. S. Ratliff, J. Gao, C. J. Murphy, H. Xie, H. J. Ploehn and D. A. Chen, “Thermal Decomposition of Generation-4 Polyamidoamine Dendrimer Films: Decomposition Catalyzed by Dendrimer-Encapsulated Pt Particles,” *Langmuir,* **2005**, 21 (9), 3998-4006.
37. P. E. Colavita, P. G. Miney, L. Taylor, R. Priore, D. L. Pearson, J. Ratliff, O. Ozturk, D. A. Chen and M. L. Myrick, "[Effects of Metal Coating on Self-assembled Monolayers on Gold. 2. Copper on an Oligo(phenylene-ethynylene) Monolayer](http://apps.isiknowledge.com:80/WoS/CIW.cgi?SID=F24662kf5C9GnDC1dD1&Func=Abstract&doc=1/6)," **2005**, *Langmuir,* 21 12268-12277.
38. S. Ma, J. Zhou, Y. C. Kang, J. E. Reddic and D. A. Chen, “Dimethyl Methylphosphonate Decomposition on Cu Surfaces: Supported Cu Nanoclusters and Films on TiO2(110),” *Langmuir,* **2004**, 20, 9686-9694.
39. K. Varazo, F. W. Parsons, S. Ma and D. A. Chen, “Methanol Chemistry on Cu and Oxygen-covered Cu Nanoclusters Supported on TiO2(110),” *Journal of Physical Chemistry B*, **2004**, 108, 18274-18283.
40. A. Illingworth, J. Zhou, O. Ozturk, and D. A. Chen, “Design of a Heating-Cooling Stage for STM and TPD Experiments,” *Journal of Vacuum Science Technology B,* **2004**, 22, 2552-2554.
41. J. Zhou, S. Ma, Y. C. Kang and D. A. Chen, “Dimethyl Methylphosphonate Decomposition on Titania-Supported Ni Clusters and Films: A Comparison of Chemical Activity on Different Ni Surfaces,” *Journal of Physical Chemistry B*, **2004**, 108, 11633-11644.
42. J. Zhou, Y. C. Kang and D. A. Chen, “Adsorbate-induced Dissociation of Metal Clusters: TiO2(110)-supported Cu and Ni Clusters Exposed to Oxygen Gas,” *Surface Science*, **2004**,562, 113-127.
43. J. Zhou, Y. C. Kang, and D. A. Chen, “Oxygen-induced Dissociation of Cu Islands on TiO2(110),” *Journal of Physical Chemistry B,* **2003**, 107, 6664-6667.
44. J. Zhou, Y. C. Kang and D. A. Chen, “Controlling Island Size Distributions: A Comparison of Nickel and Copper Growth on TiO2(110),” *Surface Science,* **2003**, 537, L429-L434.
45. J. Zhou and D. A. Chen, “Controlling Size Distributions of Copper Islands Grown on TiO2(110)-(1x2),” *Surface Science*, **2003**, 527, 183-187.
46. J. Zhou, K. Varazo, J. E. Reddic, M. L. Myrick and D. A. Chen, “Decomposition of Dimethyl Methylphosphonate on TiO2(110): Principal Component Analysis Applied to X-Ray Photoelectron Spectroscopy,” *Analytica Chimica Acta,* **2003**, 496, 289-300.
47. G. Liu, J. A. Rodriguez, J. Hrbek, B. T. Long, and D. A. Chen, “Interaction of Thiophene with Stoichiometric and Reduced Rutile TiO2(110) Surfaces: Role of Ti+3 Sites in Desulfurization Activity,” *Journal of. Molecular Catalysis A,* **2003**, 202, 215-227.
48. J. Zhou, J. E. Reddic, M. Sinha, W. S. Ricker, J. Karlinsey, J. W. Yang and M. A. Khan, and D. A. Chen, “Surface Morphologies of MOCVD-grown GaN Films on Sapphire Studied by Scanning Tunneling Microscopy,” *Applied Surface Science*, **2002**, 202, 131.
49. P.E. Colavita, M. S. Doescher, A. Molliet, U. Evans, J. E. Reddic, J. Zhou, D. A. Chen, P. G. Miney, and M. L. Myrick, “Effects of Metal Coating on Self-Assembled Monolayers on Gold. 1. Copper on Dodecanethiol and Octadecanethiol,” *Langmuir*, **2002**, 18, 8503-8509.
50. J. E. Reddic, J. Zhou, and D. A. Chen, “Scanning Tunneling Microscopy Studies of the Growth of Cu Clusters on a Reconstructed TiO2(110)-(1x2) Surface,” *Surface Science*, **2001**, 494, L767.

***Prior to Joining USC***

1. D. A. Chen, M. C. Bartelt, R. Q. Hwang, and K. F. McCarty, "Self-limiting Growth of Cu Islands on TiO2(110)," *Surface Science,* **2000**, 450, 78.
2. D. A. Chen, S. Seutter, M. C. Bartelt, and K. F. McCarty, "Small, Uniform and Thermally Stable Ag Particles on TiO2(110)-(1x1)," *Surface Science*, 464, **2000**, L708.
3. C. M. Friend, K. T. Queeney, and D. A. Chen, "Structure and Reactivity of Thin-film Oxides and Metals," *Applied Surface Science*, **1999**, 142, 99.
4. D. A. Chen and C. M. Friend, “Desulfurization of Benzenethiol on Co-Mo(110) Phases,” *Surface Science*, **1998**, 395, L221.
5. D. A. Chen and C. M. Friend, "Modifying Selectivity of Thin Films by Intervening Non-metallic Layers: Reactions of Ethanol-d6 on Supported Co Films," *Surface Science*, **1998**, 412/413, 364.
6. D. A. Chen and C. M. Friend, "Controlling Deoxygenation Selectivity by Surface Modification: Reactions of Ethanol on Oxygen-covered and Sulfur-covered Mo(110)," *Journal of the American Chemical Society*, **1998**, 120, 5017.
7. D. A. Chen and C. M. Friend,"Changing Reactivity of a Bimetallic Surface via Oxidation: Reactions of Methanol on Oxygen-covered Co Thin Films," *Journal of Physical Chemistry B*, **1998**, 102, 106.
8. D. A. Chen and C. M. Friend, "Selective and Nonselective Dehydrogenation in Primary Alcohols: Reactions of Ethanol and 1-Propanol on Co-covered Mo(110)," *Langmuir*, **1998**, 14, 1451.
9. D. A. Chen and C. M. Friend, ”Competition Between C-O Bond Scission and Retention in Methanol Reaction of Co-covered Mo(110)," *Journal of Physical Chemistry B*, **1997**, 101, 5712.
10. D. A. Chen and C. M. Friend, “Adsorbate-Induced Structural Changes in Metal Thin Films: Cobalt-Oxygen and Cobalt-Sulfur Overlayers on Mo(110),” *Surface Science,* **1997**, 371, 131.
11. K. T. Queeney, D. A. Chen, and C. M. Friend, "Probing the Role of Oxygen Coordination in Hydrocarbon Oxidation: Methyl Radical Addition to Oxygen on Mo(110)," *Journal of the American Chemical Society*, **1997**, 119, 6945.
12. C. M. Friend and D. A. Chen, "Fundamental Studies of Hydrodesulfurization by Metal Surfaces," *Polyhedron*, **1997**, 16, 3165.
13. D. A. Chen, C. M. Friend and H. Xu, “Reactions of Methanethiol on Cobalt-covered Mo(110),” *Langmuir,* **1996**, 12, 1528.
14. D. A. Chen and C. M. Friend, “Alcohol Chemistry as a Probe of Mixed Metal Phases: Reactions of 2-Propanol on Cobalt-covered Mo(110),” *Journal of Physical Chemistry,* **1996**, 100, 17640.
15. D. S. Weiss and D. A. Chen, “Photofatigue of Organic Photoreceptors with Triarylamine-based Charge Transport Layers,” *Journal of Imaging Science and Technology*, **1995**, 39, 425.
16. D. Chen, K. Gillman, P. Feng and T. C. Morrill, “Additions of Borane Promoted by Wilkinson’s Catalyst,“ *Main Group Metal Chemistry*, **1994,** 17, 413.

### Presentations (since joining USC)

#### Invited Presentations at Professional Meetings

1. American Vacuum Society Meeting, Columbis, OH, "*Understanding Metal-Metal and Metal-Support Interactions in Bimetallic Catalysts,"* October 23, 2019.
2. American Chemical Society Meeting, San Diego, CA, *"Metal Nodes in Bimetallic Metal-Organic Frameworks as Active Sites for Catalytic Gas-Phase Hydrogenation,"* August 6, 2019.
3. North American Catalysis Society Meeting, Chicago, IL, "Designing New Heterogeneous Catalysts Through Metal-Metal Interactions," June 27, 2019.
4. Physical Electronics Conference, Orlando, FL, "Designing New Heterogeneous Catalysts Through Metal-Metal Interactions", June 3, 2019.
5. American Chemical Society Meeting, Orlando, FL, *"Metal Nodes in Bimetallic Metal-Organic Frameworks as Isolated Sites for Hydrogenation Reactions,"* April 2, 2019.
6. Southeastern Regional Meeting of the American Chemical Society, Augusta, GA, *"Designing New Heterogeneous Catalysts Through Bimetallic Interactions,"* November 2, 2018.
7. Mesilla Chemistry Workshop""Interplay between Theory and Experiment in Nanocatalysis," Mesilla, NM, *"Understanding the Activity of Pt-Re Bimetallic Surfaces as Models for Heterogeneous Catalysis,"* February 4, 2018.
8. Southeastern Regional Meeting of the American Chemical Society, Charlotte, NC, *"Designing New Heterogeneous Catalysts Through Bimetallic Interactions,"* November 10, 2017.
9. American Chemical Society Meeting, San Francisco CA, "*Understanding the Activity of Pt-Re Bimetallic Surfaces,*" April 2, 2017.
10. American Chemical Society Meeting, San Diego, CA, *"Understanding the Activity in Pt-Re Bimetallic Systems,*" March 14, 2016.
11. American Chemical Society Meeting, Philadelphia, PA, *"Probing the Activity of Oxide-Supported Pt-Re Bimetallic Clusters for the Water Gas Shift and Methanol Oxidation Reactions,"* August 22, 2016.
12. American Vacuum Society Meeting, San Jose, CA, *"Understanding Chemical Activity in Pt-Re Bimetallic Systems,"* October 21, 2015.
13. NSLS-II and CFN Joint User's Meeting: Surface Sensitive In-Situ Methods for Catalysis Workshop, Brookhaven National Laboratory, Upton, NY, *"Understanding Oxidation Reactions on Pt-Re Surfaces: NAP-XPS and Reactor Studies,"* May 18, 2015.
14. Gordon Research Conference: Catalysis, New London, NH, "*Understanding the Activity of Bimetallic Surfaces: Bridging the Pressure Gap Between UHV and Ambient Pressure Studies,*" June 25, 2014.
15. American Chemical Society Meeting, New Orleans, LA, "*Characterization and Chemical Activity of Bimetallic Clusters on TiO2(110): Ni-Au, Co-Au, Pt-Au and Pt-Co,*" April 9, 2013.
16. American Vacuum Society Meeting, Tampa, FL, "*Characterization and Chemistry Chemical Activity Bimetallic Clusters on TiO2(110): Au-Co, Au-Ni and Au-Pt,*" October 31, 2012.
17. American Chemical Society Meeting, San Diego, CA, "*Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110),*" March 25, 2012.
18. Eastern Analytical Society Meeting, Somerset, NJ, "*Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110): Au-Ni and Au-Pt,*" November 14, 2011.
19. American Chemical Society Meeting, Local Chapter, Columbia, SC, *"Chemistry on Metal Nanoclusters as Models for Heterogeneous Catalysts,"* March 23, 2011.
20. Midwest American Chemical Society Regional Meeting, Wichita, KS, "*Characterization and Chemistry of Oxide-supported Bimetallic Clusters,*" October 29, 2010.
21. European Conference on Surface Science Meeting, Groningen, Netherlands, "*Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110): Au-Ni and Au-Pt,*" September 1, 2010.
22. San Luis V Symposium Summer School, Sao Pedro, Brazil, "*Scanning Tunneling Microscopy (STM): Introduction and Applications for Characterizing Model Catalyst Surfaces,*" April 12, 2010.
23. San Luis V Symposium, Sao Pedro, Brazil, "*Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110),*" April 11, 2010.
24. American Chemical Society Meeting, San Francisco, CA, "*Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110)*," March 24, 2010.
25. Florida AVS Meeting/Vibrations at Surfaces (VAS 13) Meeting, Orlando, FL, *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110),"* March 10, 2010.
26. Southeastern Catalysis Society, Asheville, NC, "*Absorbate-induced Changes in the Surface Composition of Bimetallic Clusters: Au-Pt on TiO2(110),*" September 28, 2009.
27. Army Research Office: Dynamics and Chemistry of Surfaces and Interfaces, Basic Research Workshop, Savannah, GA, *"Decomposition of Dimethyl Methylphosphonate on Ceria Thin Films,*" June 23, 2009.
28. Gordon Research Conference: Reactions at Surfaces, Ventura CA, "*Understanding Surface Chemistry on Au-based Bimetallic Nanoclusters: Pt-Au and Ni-Au on TiO2(110),*" February 11, 2009.
29. Revolutionary Approaches to Hazard Mitigation Conference, Edinburgh, Scotland, "*Decomposition of Dimethyl Methylphosphonate on Metal Oxides and Platinum Nanoparticles,"* July 30, 2008 (poster, by invitation only).
30. Army Research Office Organic and Inorganic Chemistry Workshop, Boston MA, "*Dimethyl Methylphosphonate Decomposition on Metal Oxides and Supported Metal Clusters*," March 19, 2008.
31. Computational Materials Science Meeting on Multiscale Modeling of the Formation and Stability of Surface-based Nanostructures, Ames, IA, *"Studies of Bimetallic Clusters on Oxide Surfaces: Au-Pt on TiO2(110),*" October 5, 2007.
32. Rochester Institute of Technology Undergraduate Research Symposium (Keynote Speaker), Rochester, NY, *"Understanding Surface Chemistry on Metal Clusters,"* August 10, 2007.
33. American Chemical Society Meeting, Chicago, IL, "*Studies of Bimetallic Clusters on Oxide Surfaces: Au-Pt on TiO2(110),*" March 25, 2007.
34. American Chemical Society Meeting, San Francisco, CA, *"Growth and Characterization of Bimetallic Oxide-Supported Clusters,*" September 2006.
35. Gordon Conference, Chemical Reactions at Surfaces, Ventura, CA “*Metal Oxide Particles on TiO2(110): Growth and Chemical Activity*,” February 14, 2005.
36. Center for Functional Nanomaterials Users Meeting (Keynote speaker), Upton, NY (Brookhaven National Laboratory) “*Decomposition of Dimethyl Methylphosphonate on TiO2-Supported Copper and Nickel Nanoclusters,*” May 20, 2004.
37. Young Chemists Workshop on Nanoscience organized by the Chairmen of European Research Councils' Chemistry Committee (CERC3) Gothenburg, Sweden “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,”* April 10, 2003.
38. American Vacuum Society Meeting, Florida Chapter, Orlando, FL, *“Growth and Reactivity of Metal Particles on Oxides: Cu and Ni Islands on TiO2(110),”* March 17, 2003.
39. American Chemical Society Meeting, Orlando, FL, *“Metal island growth on oxide surfaces: STM Studies of Copper Islands on TiO2(110),”* April 8, 2002.
40. Sorbents and Filtration Workshop Sponsored by the Army Research Office, Nashville, TN, “*Reactivity of Dimethyl Methylphosphonate on Cu Nanoparticles supported on TiO2(110)-(1x2),*” April 17, 2001.

#### Contributed Presentations

1. American Chemical Society Meeting, Orlando, FL, "Growth and Activity Studies of Titania-Supported Pt-Sn Model Catalysts for Selective Hydrogenation Reactions," April 2, 2019.
2. American Chemical Society Meeting, Orlando, FL, "Enhanced Hydrogenation Activity for Palladium Catalysts Supported on Carbon," April 2, 2019.
3. American Chemical Society Meeting, Orlando, FL, "Growth and Characterization of Bimetallic Metal-Organic Framework Films," April 1, 2019.
4. American Vacuum Society Meeting, Long Beach, CA, "Understanding the Growth and Activity of Titania-Supported MoS2 Clusters," October 23, 2018.
5. American Vacuum Society Meeting, Tampa FL, *"Understanding the Growth and Chemical Activity of Pt-Re Clusters on HOPG and Titania Surfaces,"* November 1, 2017.
6. American Vacuum Society Meeting, Tampa FL, *"Understanding the Growth and Chemical Activity of Pt-Re Clusters on HOPG and Titania Surfaces,"* November 1, 2017.
7. American Vacuum Society Meeting, Nashville, TN, "*Understanding the Activity of Pt-Re Bimetallic Clusters on Titania and Pt-Re Alloy Surfaces in the Water Gas Shift Reaction,"* November 9, 2016.
8. Southeastern Catalysis Society Meeting, Asheville, NC, *"Strong Electrostatic Adsorption of Platinum Precursors on a Model Carbon Support,"* September 18, 2016.
9. Southeastern Catalysis Society Meeting, Asheville, NC, *"Understanding the Activity of Pt-Re Bimetallic Clusters on Titania and Pt-Re Alloy Surfaces in the Water Gas Shift Reaction,"* September 18, 2016.
10. Southeastern American Chemical Society Meeting, Columbia, SC, *"Strong Electrostatic Adsorption of Platinum Precursors on a Model Carbon Support,"* October 25, 2016.
11. Southeastern American Chemical Society Meeting, Columbia, SC, *"Understanding Methanol Oxidation on Pt and Pt-Re Bimetallic Surfaces,"* October 25, 2016.
12. Southeastern American Chemical Society Meeting, Columbia, SC, *"Understanding the Activity of Pt-Re Bimetallic Clusters on Titania and Pt-Re Alloy Surfaces in the Water Gas Shift Reaction,"* October 25, 2016.
13. Southeastern American Chemical Society Meeting, Columbia, SC, *"Bimetallic MOFs: Control of Material Electronic Properties,"* October 25, 2016.
14. American Vacuum Society Meeting, San Jose, CA, *"Characterization of Pt-Re Bimetallic Clusters on TiO2(110),"* October 20, 2015.
15. Gordon Research Conference on Noble Metal Nanoparticles, South Hadley, MA, "*Ambient Pressure XPS and Reactor Studies on Model Pt-Re Bimetallic Systems for Methanol Oxidation,"* June 21, 2016.
16. Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA, *"Ambient Pressure XPS and Reactor Studies on Model Pt-Re Bimetallic Systems for Methanol Oxidation,"* February 10, 2015.
17. American Vacuum Society Meeting, Baltimore, MD, "*Methanol Oxidation of Pt-Re Surfaces: Ambient Pressure XPS and Reactor Studies,*" November 27, 2014.
18. American Vacuum Society Meeting, Baltimore, MD, *"Understanding the Growth and Activity of Monometallic and Bimetallic Clusters on TiO2(110),"* November 28, 2014.
19. Southeastern Catalysis Society Meeting, Asheville, NC, "*Understanding Methanol Oxidation on Pt and Pt-Re Bimetallic Surfaces,*" September 14, 2014.
20. Gordon Research Conference: Catalysis, New London, NH, "*Characterization and Chemical Activity of Pt-Ru Clusters on HOPG: Vapor Deposition and Electroless Deposition,*" June 24, 2014.
21. American Vacuum Society Meeting, Long Beach, CA, "*Characterization and Chemical Activity of Co-Pt Bimetallic Clusters on TiO2(110),*" October 29, 2013.
22. American Vacuum Society Meeting, Long Beach, CA, "*Characterization and Chemical Activity of Pt-Ru Clusters on HOPG: Vapor-Deposition and Electroless Deposition,*" October 29, 2013.
23. American Vacuum Society Meeting, Long Beach, CA, "Characterization of Bimetallic Co-Pt Clusters and Surface Composition Effect on Catalyst Performance for Proton Exchange Membranes," October 29, 2013.
24. Gordon Research Conference on Catalysis, New London, NH, *"Characterization and Chemistry of Au-based Bimetallic Clusters on Titania,"* June 28, 2012.
25. American Vacuum Society Meeting, Nashville, TN, *"Understanding the Enhanced Activity for Methanol Reaction on TiO2-supported Au Clusters,"* November 1, 2011.
26. American Vacuum Society Meeting, Nashville, TN, *"Characterization of Chemical Activity of Pt-Au and Ni-Au Bimetallic Clusters on TiO2(110),"* November 1, 2011.
27. Department of Energy Contractors Meeting, Annapolis, MD, *"Controlling Structural and Electronic Dynamics of Catalytic Processes Through Tailored Nanostructures,"* October 2, 2011.
28. National Science Foundation Catalytic Chemistry Workshop, Denver, CO, *"Probing Chemistry on Model Bimetallic Cluster Surfaces: Au-based Bimetallics on Titania,"* August 26, 2011.
29. Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA, *"Characterization and Chemistry of Ni-Au and Pt-Au Clusters on TiO2(110),"* February 9, 2011.
30. American Vacuum Society Meeting, Albuquerque NM, *"Characterization and Chemical Activity of Supported Ni-Au and Pt-Au Bimetallic Clusters: Reactions of Methanol,"* October 19, 2010.
31. American Vacuum Society Meeting, San Jose, CA, "*Growth, Composition and Surface Chemistry of Ni-Au Clusters on TiO2(110)*," November 9, 2009.
32. American Vacuum Society Meeting, Boston, MA, *"Decomposition of Dimethyl Methylphosphonate on Ceria Thin Films,"* October 20, 2008.
33. American Vacuum Society Meeting, Seattle, WA, *"Growth and Characterization of Au-Pt Nanoclusters on TiO2,"* October 15, 2007.
34. Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA, *"Studies of Bimetallic Clusters on Oxide Surfaces: Au-Pt on TiO2(110),"* February 13, 2007.
35. American Vacuum Society Meeting, San Francisco, CA, "*Reactions of Methanethiol on TiO2-supported Ni Clusters,"* November 13, 2006.
36. South Carolina Academy of Sciences, Columbia, SC *"Reactions of NO+CO on Pt-Rh Bimetallic Clusters on TiO2(110),"* March 10, 2006.
37. South Carolina Academy of Science, Columbia, SC *"In Situ Scanning Tunneling Microscopy Studies of Bimetallic Cluster Growth: Pt-Rh on TiO2(110),"* March 10, 2006.
38. American Vacuum Society Meeting, Boston, MA, *“Growth and Reactivity of Bimetallic Pt-Rh Nanoclusters on TiO2(110),”* November 2, 2005.
39. American Vacuum Society Meeting, Boston, MA, *“Covalent Attachment of Pt-Dendrimer Encapsulated Nanoparticles to 11-Mercaptoundecanoic Acid Thin Films,”* October 31, 2005.
40. American Vacuum Society Meeting, Anaheim, CA, *“Growth and Reactivity of Pt, Rh and Pt-Rh Nanoparticles on TiO2(110),”* November 18, 2004.
41. American Vacuum Society Meeting, Anaheim, CA, “*Decomposition of Dimethyl Methylphosphonate on TiO2(110)-Supported Ni Clusters of Different Sizes,*” November 16, 2004.
42. American Vacuum Society Meeting, Anaheim, CA, “*Thermal Decomposition of Generation 4-Polyamidoamine Dendrimers Films: Decomposition Catalyzed by Dendrimer-Encapsulated Pt Particles,”* November 15, 2004.
43. South Carolina Academy of Sciences, Charleston, SC, *“Methanol Oxidation on Supported Cu Nanoclusters,”* April 16, 2004.
44. American Vacuum Society Meeting, Baltimore, MD, *“Oxygen-induced Morphological Changes in Copper and Ni Islands on TiO2(110),”* November 3-7, 2003.
45. American Vacuum Society Meeting, Baltimore, MD, *“Dimethyl Methylphosphonate Decomposition on Cu and Ni Clusters,"* November 3-7, 2003.
46. American Chemical Society Meeting, Division of Colloid and Surface Science, Atlanta, GA, *“Decomposition of Dimethyl Methylphosphonate on Metal Nanoparticles Deposited on a TiO2(110) Surface,”* June 15-19, 2003.
47. South Carolina Academy of Sciences, Clemson, SC, *“Scanning Tunneling Microscopy Studies of Ni and Cu Clusters on Titania,"* March 21, 2003.
48. South Carolina Academy of Sciences, Clemson, SC, *“Methanol Reactions on Cu Nanoclusters on TiO2(110),”* March 21, 2003.
49. Pittsburgh Conference on Analytical Chemistry, Orlando, FL, “Nanoparticle Beam Deposition: Generation of Dry Organic Nanoparticle Clusters for Use in a Novel Film Formation Technique,” March 9-14, 2003.
50. American Physics Society Meeting, Austin, TX, “STM Studies of the Growth of Ni and Cu Islands on TiO2(110)-(1x1): Controlling Island Size Distributions,” March 3-7, 2003.
51. American Vacuum Society Meeting, Denver, CO, *“Controlling Island Size Distributions for Metals on Oxides: Copper and Nickel Islands on TiO2(110)-(1x2),”* November 4-8, 2002.
52. American Vacuum Society Meeting, Denver, CO, *“Dimethyl methylphosphonate Reaction on Metal Nanoparticles Deposited on a TiO2(110)-(1x2) Surface,*” November 4-8, 2002.
53. American Vacuum Society Meeting, Denver, CO, *“Surface Characterization of Dendrimer-Encapsulated Pt Nanoparticles,”* November 4-8, 2002.
54. American Chemical Society Meeting, Orlando FL, *“Dimethyl Methylphosphonate Reaction on Cu Particles Deposited on a TiO2(110)-(1x2) Surface,”* April 8-12, 2002.
55. American Vacuum Society Meeting, San Francisco, CA, *“Scanning Tunneling Microscopy Studies of the Growth and Morphology of Cu Clusters Deposited on TiO2(110),”* October 29-November 2, 2001.
56. American Vacuum Society Meeting, San Francisco, CA, *“Investigations of Size-Dependent Surface Chemistry on Metal Nanoparticles: Dimethyl Methylphosphonate Reaction on Cu/TiO2(110),”* October 29-November 2, 2001.
57. South Carolina Academy of Sciences, Conway, SC, *“Surface Morphologies of MOCVD-Grown GaN Films on Sapphire Studied by Scanning Tunneling Microscopy,”* April 6, 2001.
58. American Vacuum Society Meeting, Florida Chapter, Orlando, FL, *“Surface Morphologies of MOCVD-Grown GaN Films on Sapphire Studied by Scanning Tunneling Microscopy,”* March 12-15, 2001.
59. American Vacuum Society Meeting, Florida Chapter, Orlando, FL, *“The Effects of Reactive Adsorbates on the Growth and Morphology of Cu Clusters Deposited on TiO2(110),”* March 12-15, 2001.
60. Materials Research Society Meeting, Boston, MA, *“Growth of Metals on TiO2(110): Evidence for Self-Limited Copper Island Growth,”* November 29-December 3, 1999.
61. American Vacuum Society Meeting, Seattle, WA, *“Nucleation and Growth of Copper Islands on TiO2(110): Evidence for Self-limited Island Sizes,”* October 25-29, 1999.

#### Seminars (39 total)

1. Louisiana State University, Department of Chemical Engineering, Baton Rouge, LA, November 15, "*Designing New Heterogeneous Catalysts Through Bimetallic Interactions,"* 2019.
2. Rochester Institute of Technology, Department of Chemistry and Materials Science, "*Designing New Heterogeneous Catalysts Through Metal-Metal Interactions*," September 10, 2019.
3. Washington State University, Department of Chemistry, "*Understanding Catalytic Activity of Pt-Re Bimetallic Surfaces,*" December 3, 2018.
4. Tufts University, Department of Chemistry, "*Understanding Catalytic Activity of Pt-Re Bimetallic Surfaces,*" September 19, 2017.
5. South Carolina Section Annual Awards Meeting, Claflin University, Orangeburg, SC, *"Designing New Heterogeneous Catalysts Through Bimetallic Interactions"* April 20, 2017.
6. University of South Carolina, Department of Chemical Engineering, *"Understanding Chemical Activity in Bimetallic Pt-Re Systems,"* October 20, 2016.
7. University of South Carolina, Department of Chemistry and Biochemistry, "*Nanoscale Studies of Surface Chemistry for Understanding Heterogeneous Catalysts,*" February 2014.
8. University of Florida, Department of Chemical Engineering, *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110): Au-Ni, Au-Pt and Au-Co,"* November 26, 2012.
9. Iowa State University, Chemistry Department *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110): Au-Ni, Au-Pt and Au-Co,"* November 10, 2012.
10. University of Delaware, Chemistry Department, *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110): Au-Ni, Au-Pt and Au-Co,"* March 7, 2012.
11. Brookhaven National Laboratory, Upton, NY, *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110): Au-Ni, Au-Pt and Au-Co,"* December 12, 2012.
12. University of South Carolina, Department of Chemistry and Biochemistry, *"Characterization and Chemical Activity of Au-based Bimetallic Clusters on TiO2(110): Au-Ni and Au-Pt,"* January 24, 2011.
13. Tufts University, Chemistry Department, Boston, MA, *"Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110),"* November 8, 2010.
14. Texas A&M, Chemistry Department, *"Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110),"* May 7, 2010.
15. University of Texas at Austin, Chemistry Department, "Characterization and Chemistry of Au-based Bimetallic Clusters on TiO2(110)," May 6, 2010.
16. Western Carolina University, Chemistry Department, *"Understanding Surface Chemistry on Metal Clusters,"* November 21, 2008.
17. University of Wyoming, Chemistry Department, *"Understanding Surface Chemistry on Metal Clusters,"* November 7, 2008.
18. Duquesne University, Department of Chemistry, *"Understanding Surface Chemistry on Metal Clusters,"* February 23, 2007.
19. Southern Illinois University, Department of Chemistry, "*Growth and Reactivity of Oxide-Supported Bimetallic Nanoclusters as Models for Heterogeneous Catalysts,*" November 16, 2007.
20. Virginia Polytechnic Institute, Department of Chemistry, *"Characterization and Activity of Bimetallic Nanoparticle Catalysts,*" April 14, 2006.
21. Washington University, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” October 20, 2005.
22. Smith College, Department of Chemistry “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” March 8, 2005.
23. Mount Holyoke College, Department of Chemistry “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” March 9, 2005.
24. University of California at Riverside, Department of Chemistry “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” November 15, 2004.
25. Student American Chemical Society Meeting, University of South Carolina, *“Surfaces and the Molecules that Love Them,”* April 12, 2004.
26. Penn State University, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” April 7, 2004.
27. South Carolina Citizen’s School of Nanotechnology: An Outreach Project of the University of South Carolina, *“A Personal View of What I Do in Nanotechnology and Why I Do It,”* March 30, 2004.
28. National Institute of Standards and Technology, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” February 26, 2004.
29. University of Maryland, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” February 25, 2004.
30. University of Delaware, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” February 23, 2004.
31. Boston University, Department of Physics, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” December 12, 2003.
32. Tulane University, Department of Physics, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” December 2, 2003.
33. Brookhaven National Laboratory, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” November 19, 2003.
34. University of South Carolina, Nanoculture Seminar Series, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” October 22, 2003.
35. University of Wisconsin at Milwaukee, Department of Physics, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” October 17, 2003.
36. University Georgia, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,*” October 3, 2003.
37. East Carolina University, Department of Chemistry, “*Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoclusters as Models for Heterogeneous Catalysts,” Metal Particles on Oxides: Cu and Ni Islands on TiO2(110),*” September 26, 2003.
38. University of North Carolina at Charlotte, Department of Chemistry, “*Growth and Reactivity of Metal Particles on Oxides: Cu and Ni Islands on TiO2(110),”* February 17, 2003.
39. Brookhaven National Laboratory, Department of Chemistry, “*Investigating the Reactivity and Growth of Metal Thin Films and Nanoparticles on Single Crystal Surfaces,*” February 2, 2000.

**Grants**

*Current*

1. Department of Energy, Basic Energy Sciences, "Multimetallic Metal-Organic Frameworks as Tunable, Multifunctional Catalysts for Gas Phase Hydroformylation and Hydrogenation Reactions," 9/18-9/21, $666,408.

2. National Science Foundation, "Bifunctional Catalysts for Selective Hydrogenation of Biomass Derivatives: Furfural Hydrogenation over Pt-Sn on Biomass Derivatives: Furfural Hydrogenation over Pt-Sn on Titania," 7/18-7/21, $659,661.

3 National Science Foundation I/UCRC, "Real World Nanoparticle Synthesis on Model Supports," 1/16-6/20, $210,000.

4. University of South Carolina ASPIRE II Grant "Bimetallic Metal-Organic Frameworks as Heterogeneous Catalysts for Gas Phase Hydrogenation Reactions," 7/18-9/20, $100,000.

*Previous*

1. National Science Foundation, "IGERT: Functional Nanomaterials for Sustainable Energy Solutions" One of three Co-PIs, 05/01/13-8/31/2019, $3,000,000.

2. National Science Foundation,"Understanding the Chemical Activity of Oxide-supported Bimetallic Clusters," 7/13-06/18, $454,000.

3. Petroleum Research Fund, "Metal Organic Frameworks As Gas-Phase Heterogeneous Catalysts: Understanding Active Sites for Oxidation and Hydrogenation Reactions," PIs: D. A. Chen, N. B. Shustova, 9/1/14-9/1/17, $110,000.

4. Savannah River National Laboratory, "Selective Adsorption/Purification of Natural Gas Using Tunable Adsorbents," Co PIs: D.A. Chen and N. B. Shustova, 9/15-9/17, $112,500.

5. Savannah River National Laboratory, "Design, Build and Demonstrate the Performance of a Solid Oxide Membrane Catalyst Assembly for Natural Gas Conversion to Dimethyl Ether," Co PIs: D.A. Chen, A Heyden and F. Chen, 9/15-9/17, $180,000.

6. University of South Carolina ASPIREII Grant, "Design, Preparation, and Evaluation of Improved Catalysts for Direct Hydrochlorination of Acetylene to Vinyl Chloride Monomer" PI: J. Monnier, one of three Co-PIs, 5/16/13-5/16/15, $100,000.

7. University of South Carolina ASPIREII Grant, "Design, Preparation, and Evaluation of Improved Catalysts for Direct Hydrochlorination of Acetylene to Vinyl Chloride Monomer" PI: J. Monnier, one of three Co-PIs, 5/16/13-5/16/15, $100,000.

8. National Science Foundation,"Oxide-supported Bimetallic Au-Pt Clusters as Catalysts for Epoxidation and Oxidation Reactions," PI: D. A. Chen, 4/09-06/13, $452,510.

9. Department of Energy, "Controlling Structural, Electronic and Energy Flow Dynamics of Catalytic Processes Through Tailored Nanostructures," CoPI: D. A. Chen, 9/09-9/13, $535,532 (Chen budget).

10. NASA EPSCoR, "Development of Advanced Unitized Regenerative Fuel Cells," CoI, 2008-2010, $12,000 (Chen budget).

11. NSF CAREER, “Exploring Particle Size Dependent Surface Chemistry on Supported Metal Nanoparticles,” PI: D.A. Chen, 4/02-4/07, $450,000.

12. Army Research Office, “In Situ Studies of the Decomposition of Simulated Chemical Warfare Agents on Nanoparticle Catalysts,” PI: D. A. Chen, 5/05-5/08, $225,000.

13. Army Research Office Young Investigator Award, “New Catalysts for the Destruction of Chemical Warfare Agents,” P.I.: D.A. Chen, 9/00-3/03, $205,000

14. Department of Energy /EPSCOR, “Surface Chemistry on Supported Metal Particles with Controlled Particle Sizes,” PI: D. A. Chen, 8/01-8/04, $297,956 (plus $66,000 match).

15. Department of Defense DURIP, “Proposal to Build an Ultrahigh Vacuum Chamber for Studying the Decomposition of Simulated Chemical Warfare Agents on Supported Metal Nanoparticles,” PI: D. A. Chen, 2/01-2/02, $88,000 (plus $45,000 match).

16. Petroleum Research Fund, “Investigating the Surface Chemistry of Supported Metal Nanoparticles,” PI: D.A. Chen, 9/00-9/02, $25,000

17. NSF NIRT, “Dendrimer-stabilized Nanoparticles for Next Generation Catalysts,” PI: H. J. Ploehn, one of 7 investigators, 5/01-5/06, $310,000 (Chen budget).

18. National Science Foundation NER, “Ionized Nanoparticle Beam Deposition,” PI: M. L. Myrick, CoIs: Chen, Genge, Kranzman, 4/01-4/02, $100,000 ($20,000 budgeted for Chen).

19. Army Research Office, “Workshop on Sorbents and Filter Materials in Chemical and Biological Defense,” PI: D. A. Chen, 3/01-2/02, $20,000.

20. USC Office of Research, “Proposal to Build an Ultrahigh Vacuum System for Depositing Bimetallic Nanoclusters from Organometallic Precursors,” PI: D. A. Chen, 11/01-11/02, $50,000 (plus $30,000 match).

21. USC Research and Productive Scholarship, “New Methods for Chemically Etching GaN,” PI: D. A. Chen, 6/01-6/02, $12,500.

22. USC Dean’s/VP Initiative, “Etching of GaN Surfaces,” PI: D. A. Chen, 4/01-4/02, $15,000.

23. USC Dean’s/VP Initiative, “The Generation and Testing of Nanoengineered Photocatalysts,”PI: J. Ferry,CoIs: D. A. Chen, M. L. Myrick, 4/01-4/02, $33,000 ($11,000 budgeted for Chen).

24. Petroleum Research Fund, Organization of the “Nanoscale Studies of Surface Phenomena” Symposium at the 223rd National ACS Meeting, Division of Colloid and Interface Science, PI: D. A. Chen, 4/02-12/02, $3,600.

25. NSF Travel Supplement to CAREER Award, “Supplement for Travel to the CERC3 Young Chemists Workshop on Nanoscience in Gothenburg, Sweden,” PI: D. A. Chen, 5/03-6/03, $1,825.