Jingguang G. Chen (Curriculum Vitae)

Current Positions: Thayer Lindsley Professor of Chemical Engineering,
Columbia University, New York, NY 10027
Senior Chemist, Director of Synchrotron Catalysis Consortium,
Brookhaven National Laboratory, Upton, NY 11973

Positions Held:

2012 – Present: Thayer Lindsley Professor of Chemical Engineering, Columbia University
2012 – Present: Joint Appointment at Chemistry Division, Brookhaven National Laboratory
2005 – Present: Director, Synchrotron Catalysis Consortium, Brookhaven National Laboratory
2019 – 2022: Department Chair of Chemical Engineering, Columbia University
2008 – 2012: Claire D. LeClaire Professor of Chemical Engineering, University of Delaware
2009 – 2012: Co-Director, Energy Frontier Research Center on Biomass Conversion
2008 – 2010: Interim Director, University of Delaware Energy Institute
2000 – 2007: Director, Center for Catalytic Science and Technology (CCST)
2002 – 2012: Professor of Chemical Engineering, University of Delaware
2005 – 2012: Professor of Chemistry (courtesy appointment), University of Delaware
1998 – 2001: Associate Professor of Materials Science and Engineering and Chemical Engineering, University of Delaware
1994 – 1998: Spokesperson of Exxon U1A Beamline at National Synchrotron Light Source
1990 – 1998: Staff Scientist, Exxon Corporate Research Laboratory, Annandale, New Jersey

Awards and Recognitions:

Member, National Academy of Engineering (2024)
Fellow, Royal Society of Chemistry (2023)
Fellow, American Institute of Chemical Engineers (AIChE) (2021)
Robert H. Wilhelm Award in Chemical Reaction Engineering, AIChE (2020)
Distinguished Alumni Award, Chemistry Department, University of Pittsburgh (2020)
R.B. Anderson Award, Canadian Catalysis Division (2019)
Web of Science Highly Cited Researcher (2019 – Present)
Robert Burwell Lectureship in Catalysis, North American Catalysis Society (2017)
Eastman Distinguished Lecturer in Catalysis, University of California at Berkeley (2017)
George Olah Award in Hydrocarbon/Petroleum Chemistry, American Chemical Society (2015)
Giuseppe Parravano Memorial Award in Catalysis, Michigan Catalysis Society (2015)
Fellow, American Chemical Society (2013)
Herman Pines Award in Catalysis, Chicago Catalysis Club (2011)
Excellence in Undergraduate Advising and Mentoring, University of Delaware (2011)
Excellence in Catalysis Award, New York Catalysis Society (2008)
Fellow, American Vacuum Society (2008)
Excellence in Catalysis Award, Philadelphia Catalysis Club (2004)
Alexander von Humboldt Postdoctoral Fellow (Germany, 1988 – 1989)
Leybold-Heraeus Award (Leybold-Heraeus Corporation, 1987)
Russell and Siguard Varian Fellow (American Vacuum Society, 1986)
Graduate Student Award (American Vacuum Society Conference, 1986)
Andrew W. Mellon Predoctoral Fellow (University of Pittsburgh, 1985 – 1987)
USA-China Chemistry Graduate Program Fellowship (1983)

Editorial Boards:

Associate Editor (2016 – 2024); Executive Editor (2025 – Present), *ACS Catalysis*
Associate Editor, *Applied Surface Science* (2011 – 2015)
Associate Editor, *Surface Science Reports* (2004 – 2010)
Editorial Advisory Board, *Journal of Physical Chemistry Letters* (2023 – Present)
Editorial Advisory Board, *EES Catalysis* (2023 – Present)
Editorial Advisory Board, *Carbon Future* (2023 – Present)
Editorial Advisory Board, *Chem & Bio Engineering* (2023 – Present)
Editorial Advisory Board, *Acta Physico-Chimica Sinica* (2009 – 2015)
Editorial Advisory Board, *Chinese Journal of Catalysis* (2007 – 2015)
Editorial Advisory Board, *Surface Science* (2001 – 2003)
Editorial Advisory Board, *Langmuir* (1998 – 2000)

Selected Service in Catalysis and Energy Communities:

President, North American Catalysis Society (2017 – Present)
Director and Co-Founder, Synchrotron Catalysis Consortium for DOE (2005 – Present)
USA Representative, Board of International Association of Catalysis Societies (2016 – Present)
Advisory Board: ChemCatBio Center, National Renewable Energy Laboratory (2021 – Present)
Member, NASEM Committee on Carbon Utilization Infrastructure, Markets, Research and Development (2023 – 2024)
Advisory Board: DOE EFRC for Plastics Innovation at Univ. Delaware (2020 – 2024)
Advisory Board: SUNCAT Center for Interface Science and Catalysis, SLAC (2019 – 2023)
Panel Lead: DOE-BES Virtual Roundtable on Foundational Science for Carbon-Neutral Hydrogen Technologies (2021)
Member, DOE Basic Energy Sciences Advisory Committee (BESAC) (2017 – 2018)
Member, Council for DOE/BES Chemical and Biochemical Sciences (2012 – 2016)
Director-at-Large: North American Catalysis Society (2005 – 2017)
Co-Chair: DOE Chemical Sciences Workshop on N_2 Activation (2016)
Co-Chair: DOE/BES Roundtable on Sustainable Ammonia Synthesis (2016)
Co-Chair: DOE/BES Catalysis PIs Meeting (2015)
Chair and Co-Founder: Catalysis Division of American Chemical Society (2014 – 2015)
Director-at-Large: Catalysis Division of American Chemical Society (2008 – 2012)
Executive Committee: Catalysis and Reaction Engineering Division of AIChE (2010 – 2012)
Executive Committee: Surface Science Division of American Vacuum Society (2008 – 2010)
Advisory Board: Photon Sciences Division of BNL (2013 – 2018)
Advisory Board: DOE Center for Functional Nanomaterials (2007 – 2011)
Advisory Board: DOE Energy Frontier Research Center at LSU (2009 – 2011)
Catalysis Secretariat: American Chemical Society (2006 – 2007)
Chair: Philadelphia Catalysis Club (2004)
Chair: Gordon Research Conference on Catalysis (2002)

Education and Training:

1988 - 1989	Alexander von Humboldt Postdoctoral Fellow Forschungszentrum-Julich, Germany; Advisor: Harald Ibach
1983 - 1988	Ph.D. Chemistry, Andrew W. Mellon Pre-doctoral Fellow University of Pittsburgh, Advisor: John T. Yates,
1978 - 1982	B.S. Chemistry Nanjing University, China

Highlights of Publications and Patents:

- 500+ Journal Publications
- 20+ United States Patents
- 70,000+ citations; *h-index*=120 (GoogleScholar as of April 2025)
- Web of Science Highly Cited Researcher (2019 – Present)

United States Patents:

1 "Selective Opening of Five and Six Membered Rings", S. Hantzer, M.S. Touvelle and J.G. Chen, United States Patent, 5,811,624 (1998).

2 "Desulfurization and Aromatic Saturation of Feedstream Containing Condensed Refractory Organosulfur Heterocycles and Aromatics", D.P. Klein, M.S. Touvelle, E.S. Ellis, C.W. Hudson, S. Hantzer, J.G. Chen, D.E.W. Vaughan, J.J. Schorfheide, W.C. Baird, G.B. McVicker, United States Patent, 5,925,239 (1999).

3 "Desulfurization and Ring Opening of Petroleum Streams", G.B. McVicker, J.J. Schorfheide, W.C. Baird, Jr., M.S. Touvelle, M. Daage, D.P. Klein, E.S. Ellis, D.E.W. Vaughan and J.G. Chen, United States Patent, 5,928,498 (1998).

4. "Desulfurization Processes for Refractory Organosulfur Heterocycles", W.C. Baird, Jr., G.B. McVicker, J.J. Schorfheide, D.P. Klein, S. Hantzer, M. Daage, M.S. Touvelle, E.S. Ellis, D.E.W. Vaughan and J.G. Chen, United States Patent, 5,935,420 (1999).

5. "Desulfurization and Ring Opening of Petroleum Streams", G.B. McVicker, J.J. Schorfheide, W.C. Baird, Jr., M.S. Touvelle, M. Daage, D.P. Klein, E.S. Ellis, D.E.W. Vaughan and J.G. Chen, United States Patent, 6,103,106 (2000).

6. "Desulfurization of Petroleum", G.B. McVicker, J.J. Schorfheide, W.C. Baird, Jr., M.S. Touvelle, M. Daage, D.P. Klein, E.S. Ellis, D.E.W. Vaughan and J.G. Chen, United States Patent, 6,193,877 (2001).

7. "Desulfurization of Petroleum Streams Containing Condensed Ring Heterocyclic Organosulfur Compounds", D.P. Klein, M.S. Touvelle, E.S. Ellis, J.G. Chen, D.E.W. Vaughan, J.J. Schorfheide, W.C. Baird, G.B. McVicker, United States Patent, 6,221,240 (2001).

8. "Desulfurization Processes for Refractory Organosulfur Heterocycles", W.C. Baird, Jr., G.B. McVicker, J.J. Schorfheide, D.P. Klein, S. Hantzer, M. Daage, M.S. Touvelle, E.S. Ellis, D.E.W. Vaughan and J.G. Chen, United States Patent, 6,245,221 (2001).

9. "Ring Opening with Group VIII Metal Catalysts Supported on Modified Substrate", W.C. Baird, Jr., J.G. Chen and G.B. McVicker, United States. Patent, 6,586,650 (2003).

10. "Method and Catalyst for Opening Naphthenic Rings of Naphthenic Ring-Containing Compounds", W.C. Baird, Jr., D.P. Klein, M.S. Touvelle and J.G. Chen, United States Patent, 6,589,416 (2003).

11. "Ring Opening with Group VIII Metal Catalysts Containing Cracking Moderators", W.C. Baird, Jr., J.G. Chen and G.B. McVicker, United States Patent, 6,623,625 (2003).

12. "Naphthene Ring Opening over a Ring Opening Catalyst Combination", W.C. Baird, Jr., J.G. Chen and G.B. McVicker, United States Patent, 6,623,626 (2003).

13. "Regeneration of Hydrogen Sulfide Sorbents", J.G. Chen, L.D. Brown, W.C. Baird, Jr., G.B. McVicker, E.S. Ellis, M.S. Touvelle, D.P. Klein and D.E.W. Vaughan, United States Patent, 6,649,043 (2003).

14. "Naphthene Ring Opening over an Iridium Ring Opening Catalyst", W.C. Baird, Jr., D.P. Klein, J.G. Chen and G.B. McVicker, United States Patent, 6,683,020 (2003).

15. "Regeneration of Iron-Based Hydrogen Sulfide Sorbents", J.G. Chen, L.D. Brown, W.C.

Baird, Jr., G.B. McVicker, E.S. Ellis, M.S. Touvelle, D.P. Klein and D.E.W. Vaughan, United States Patent, 6,723,230 (2004).

16. "PVD Supported Mixed Metal Oxide Catalysts", S. Chaturvedi, J.G. Chen, M.B. Clark, Jr. and A.M. Gaffney, United States Patent, 6,984,750 (2006).
17. "Method of Preparing Ethylene Glycol from Cellulose", T. Zhang, M. Zheng, N. Ji, A. Wang, Y. Shu, X. Wang, and J.G. Chen, United States Patent, 7,960,594 (2011).
18. "Bimetallic Alkylation Catalysts", A.M. Gaffney, P.J. Angevine, C.Y. Yeh, J.H. Koegler, and J.G. Chen, United States Patent, 8,105,968 (2012).
19. "Method of Producing Ethylene Glycol from Polyhydroxyl Compound", T. Zhang, M. Zheng, A. Wang, N. Ji, Y. J. Pang, Z. Tai, X. Wang, and J.G. Chen, United States Patent, 8,324,433 (2012).
20. "Methods of Using Tungsten Carbide Catalysts in Preparation of Ethylene Glycol", T. Zhang, N. Ji, M. Zheng, A. Wang, Y. Shu, X. Wang, and J.G. Chen, United States Patent, 8,692,032 (2014).
21. "Fuel Cell Catalyst Including Carbon Support Particles with Metal Carbide Layer and Catalytic Material and Fuel Cell Using the Same", B. Merzougui, M. Shao, L.V. Protsailo and J.G. Chen, United States Patent, 9,147,884 (2015).
22. "Fuel Cell Catalyst Including Carbon Support Particles with Metal Carbide Layer", M. Shao, L.V. Protsailo and J.G. Chen, United States Patent, 9,991,524 (2018).
23. "Electrocatalysts for Hydrogen Evolution and Oxidation Reactions", F. Jiao, Q. Lu, G.S. Hutchings and J.G. Chen, United States Patent, 9,994,961 (2018).

Publications in Refereed Journals:

1. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "Onset of Oxidation of Al(111) at Low Temperatures: A Study by EELS and AES", *Physical Review*, B33 (1986) 1436-1439.
2. J.E. Crowell, J.G. Chen and J.T. Yates, Jr., "Surface Sensitive Spectroscopic Study of the Interaction of Oxygen with Al(111): Low Temperature Chemisorption and Oxidation", *Surface Science*, 165 (1986) 37-64.
3. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "Assignment of a Surface Vibrational Mode by Chemical Means: Modification of the Lattice Modes of Al_2O_3 by a Surface Reaction with H_2O", *Journal of Chemical Physics*, 84 (1986) 5906-5909.
4. J.E. Crowell, J.G. Chen and J.T. Yates, Jr., "The Adsorption and Decomposition of Carboxylic Acids on Al(111)", *Journal of Electron Spectroscopy and Related Phenomena*, 39 (1986) 97-106.
5. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "An EELS and TPD Study of the Adsorption and Decomposition of Acetic Acids on the Al(111) Surface", *Surface Science*, 172 (1986) 733-753.
6. J.E. Crowell, J.G. Chen and J.T. Yates, Jr., "A Vibrational Study of the Adsorption and Decomposition of Formic Acid and Surface Formate on Al(111)", *Journal of Chemical Physics*, 85 (1986) 3111-3122.
7. J.G. Chen, T.P. Beebe, Jr., J.E. Crowell and J.T. Yates, Jr., "Reaction of Atomically Clean Aluminum and Chemically Modified Aluminum with Alkyl Halides", *Journal of the American Chemical Society*, 109 (1987) 1726-1729.
8. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "Differentiation of Single vs. Multiple Vibrational Excitation Processes on Surfaces: An EELS Investigation of the Al_2O_3 Vibrational Modes", *Physical Review* (Rapid Communication) B35 (1987) 5299-5302.
9. J.E. Crowell, J.G. Chen, D.M. Hercules and J.T. Yates, Jr., "The Adsorption and Thermal Decomposition of Water on Clean and Oxygen-Predosed Al(111)", *Journal of Chemical Physics*, 86 (1987) 5804-5815.

10. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "The Metal-Metal Oxide Interface: A Study of Thermally Activated Diffusion at the Ni/ Al_2O_3 Interface Using Electron Spectroscopies", *Surface Science*, 185 (1987) 373-393.
11. J.G. Chen, J.E. Crowell and J.T. Yates, Jr., "Ni Cluster Chemistry on Al_2O_3: A Vibrational EELS Study Using Chemisorbed CO on a Model Catalyst: $Ni/Al_2O_3/Al(111)$", *Surface Science*, 187 (1987) 243-264.
12. J.E. Crowell, J.G. Chen and J.T. Yates, Jr., "An Electron Spectroscopic Study of the Growth and Thermally Activated Diffusion of Ni Thin Films on Al(111) and Al_2O_3 /Al(111)", *Thin Solid Films*, 153 (1987) 341-347.
13. L. Ng, J.G. Chen, P. Basu and J.T. Yates, Jr., "Electron Stimulated Decomposition of Alkyl and Fluoroalkyl Ethers Adsorbed on Al_2O_3", *Langmuir*, 3 (1987) 1161-1167.
14. J.G. Chen, P. Basu, L. Ng and J.T. Yates, Jr., "A Comparative Study of the Reactivities of H_2O, CH_3OH and CH_3OCH_3 towards Al(111)", *Surface Science*, 194 (1988) 397-418.
15. J.G. Chen, J.E. Crowell, P. Basu, L. Ng and J.T. Yates, Jr., "Dissociative Chemisorption of CO on the Ni Films Promoted by Al: Detection of a Precursor State to CO Dissociation by EELS", *Journal of Physical Chemistry*, 92 (1988) 2574-2579.
16. P. Basu, J.G. Chen, L. Ng, M.L. Colaianni and J.T. Yates, Jr., "Fragmentation of Molecular Adsorbates by Electron and Ion Bombardment: Methoxy Chemistry on Al(111)", *Journal of Chemical Physics*, 89 (1988) 2406-2411.
17. J.G. Chen, P. Basu, T.H. Ballinger and J.T. Yates, Jr., "A Transmission Infrared Spectroscopic Investigation of the Reaction of Dimethyl Ether with Alumina Surfaces", *Langmuir*, 5 (1989) 352-356.
18. J.G. Chen, W. Erley and H. Ibach, "A FT-RAIRS Investigation of the Nature of the 3-Fold Bridge-CO Species on Ni(111)", *Surface Science*, 223 (1989) L891-896.
19. J.G. Chen, W. Erley and H. Ibach, "A RAIRS Investigation of the Interaction between the Coadsorbed NO and Oxygen on Ni(111): Observation of a Substantial N-O Bond Strengthening", *Surface Science*, 224 (1989) 215-234.
20. J.G. Chen, M.L. Colaianni, J.T. Yates, Jr. and G.B. Fisher, "Thermal Behavior of a Rh/Al_2O_3 Model Catalyst: The Disappearance of Surface Rh upon Heating", *Journal of Physical Chemistry*, 94 (1990) 5059-5062.
21. J.G. Chen, W. Erley and H. Ibach, "A RAIRS Observation of the Local Interaction between the Coadsorbed NO and CO on Ni(111)", *Surface Science*, 227 (1990) 79-89.
22. J.G. Chen, W. Erley and H. Ibach, "Significant N-O Bond Strengthening upon the Interaction of NO with Coadsorbed Oxygen on Ni(111)", *Vacuum*, 41 (1990) 74-75.
23. W. Erley, J.G. Chen and D. Sander, "The Formation of Acetic Anhydride by Decomposition of Acetic Acid on Ni(111)", *Journal of Vacuum Science and Technology*, A8 (1990) 976-978.
24. J.G. Chen, S. Lehwald, G. Kisters, E. Preuss and H. Ibach, "A Surface Stress Induced (1x1) to (5x1) Reconstruction of an Ir(100) Surface", *Journal of Electron Spectroscopy and Related Phenomena*, 54/55 (1990) 405-413.
25. M.D. Weisel, J.G. Chen and F.M. Hoffmann, "Characterization of CO/H_2 Reaction Intermediate by FT-IRAS: Potassium Formate on Ru(001)", *Journal of Electron Spectroscopy and Related Phenomena*, 54/55 (1990) 787-794.
26. J.G. Chen, M.L. Colaianni, W.H. Weinberg and J.T. Yates, Jr., "Direct Vibrational Detection of Surface Reaction Channels Leading to CO Dissociation and to Its Inhibition on Mo(110)", *Chemical Physics Letters*, 177 (1991) 113-117.
27. S. Lehwald, J.G. Chen, G. Kisters, E. Preuss and H. Ibach, "Surface Phonon Dispersion Investigation of the (1x1) to (5x1) Reconstruction of an Ir(100) Surface", *Physical Review*, B43 (1991) 3920-3927.

28. G. Kisters, J.G. Chen, S. Lehwald and H. Ibach, "Adsorption of CO on the Unreconstructed and Reconstructed Ir(100) Surfaces", *Surface Science*, 245 (1991) 65-71.
29. J.G. Chen, M.D. Weisel, J.H. Hardenbergh, F.M. Hoffmann, C.A. Mims and R.B. Hall, "Evidence for the Potassium-Promoted Activation of Methane on a K-Doped NiO/Ni(100) Surface", *Journal of Vacuum Science and Technology*, A9 (1991) 1684-1687.
30. J.G. Chen, M.D. Weisel and R.B. Hall, "A Vibrational Investigation of the Stability, Morphology and Surface Reactivity of NiO on Ni(100)", *Surface Science*, 250 (1991) 159-168.
31. R.B. Hall, J.G. Chen, J.H. Hardenbergh and C.A. Mims, "Reactivity of NiO and K-Doped NiO Thin Films on Ni(100) with Hydrogen and Methane", *Langmuir*, 7 (1991) 2548-2554.
32. M.L. Colaianni, J.G. Chen, W.H. Weinberg and J.T. Yates, Jr., "The Adsorption and Dissociation of CO on Clean and Oxygen-Modified Mo(110) Surfaces", *Journal of the American Chemical Society*, 114 (1992) 3735-3743.
33. J.G. Chen, D.A. Fischer, J.H. Hardenbergh and R.B. Hall, "A Fluorescence-Yield Near-Edge Spectroscopy (FYNES) Investigation of the Reaction Kinetics of NiO/Ni(100) with Hydrogen", *Surface Science*, 279 (1992) 13-22.
34. M.L. Colaianni, J.G. Chen, W.H. Weinberg and J.T. Yates, Jr., "Oxygen on Mo(110): Low-Temperature Adsorption and High Temperature Oxidation", *Surface Science*, 279 (1992) 211-222.
35. J.G. Chen, M.L. Colaianni,W.H. Weinberg and J.T. Yates, Jr., "The $Cu/Al_2O_3/Al(111)$ Interface: Initial Film Growth and Thermally-Induced Diffusion of Copper into the Bulk", *Surface Science*, 279 (1992) 223-232.
36. M.D. Weisel, J.G. Chen, F.M. Hoffmann, Y.-K. Sun and W.H. Weinberg, "A FT-IRAS Study of the Formation and Decomposition of Chemisorbed Formate on Clean and Potassium-Modified Ru(001)", *Journal of Chemical Physics*, 97 (1992) 9396-9411.
37. M.L. Colaianni, J.G. Chen and J.T. Yates, Jr., "Facile Carbon Monoxide Dissociation on Copper: Promotion by Aluminum", *Journal of Physical Chemistry*, 97 (1993) 2707-2710.
38. J.G. Chen, M.D. Weisel, Z.-M. Liu and J.M. White, "Effect of Carbon Modification on a Vanadium (110) Surface: Observation of Surface Reactivities characteristics of Platinum-Group Metals", *Journal of the American Chemical Society*, 115 (1993) 8875-8876.
39. J.G. Chen, B.D. DeVries, J.T. Lewandowski, and R.B. Hall, "Direct Differentiation of Surface and Bulk Compositions of Powder Catalysts: Application of Electron-Yield and Fluorescence-Yield NEXAFS to LixNi1-xO", *Catalysis Letters*, 23 (1994) 25-35.
40. J.G. Chen, C.M. Kim, B. Fruhberger, B.D. DeVries and M.S. Touvelle, "A NEXAFS Determination of the Oxidation State of Vanadium Carbide on V(110): Observation of Charge Transfer from Vanadium to Carbon", *Surface Science*, 321 (1994) 145-155.
41. C.M. Kim, B.D. DeVries, B. Fruhberger and J.G. Chen, "A HREELS and NEXAFS Characterization of Atomic and Molecular Oxygen Species on a Vanadium (110) Surface", *Surface Science*, 327 (1995) 81-92.
42. J.G. Chen, "Selective Activation of C-H and C=C Bonds on Metal Carbides: A Comparison of Reactions of n-Butane and 1,3-Butadiene on Vanadium Carbide Films on V(110)", *Journal of Catalysis*, 154 (1995) 80-90.
43. J.G. Chen, B.D. DeVries, B. Fruhberger C.M. Kim and Z.-M. Liu, "Spectroscopic Characterization of Thin Vanadium Carbide Films on a Vanadium (110) Surface:

Formation, Stability and Reactivities", *Journal of Vacuum Science and Technology*, A13 (1995) 1600-1605.

44. R. Kapoor, S.T. Oyama, B. Fruhberger, B.D. DeVries and J.G. Chen, "Characterization of Early Transition Metal Carbides and Nitrides by NEXAFS", *Catalysis Letters*, 34 (1995) 179-189.
45. B. Fruhberger and J.G. Chen, "Modification of the Surface Reactivity of Mo(110) upon Carbide Formation", *Surface Science*, 342 (1995) 38-46.
46. B. Fruhberger and J.G. Chen, J. Eng, Jr., and B.E. Bent, "Reactivities of Carbon and Nitrogen-Modified Mo(110): A Comparison of Modification Effects by Surface and Interstitial Adatoms", *Journal of Vacuum Science and Technology*, A14 (1996) 1475-1481.
47. J.G. Chen, B. Fruhberger and M.L. Colaianni, "NEXAFS Characterization of Compositions and Reactivities of Transition Metal Oxides", *Journal of Vacuum Science and Technology*, A14 (1996) 1668-1673.
48. J.G. Chen, "Carbide and Nitride Overlayers on Early Transition Metal Surfaces: Preparation, Characterization and Reactivities", *Chemical Reviews*, 96 (1996) 1477-1498.
49. J.G. Chen and B. Fruhberger, "Similarities in the Decomposition and Dehydrogenation of Cyclohexene on (4x4)-C/Mo(110) and Pt(111)", *Surface Science*, 367 (1996) L102-110.
50. B. Fruhberger and J.G. Chen, "Reaction of Ethylene with Clean and Carbide-Modified Mo(110): Converting the Surface Reactivity of Mo to Pt-Group Metals", *Journal of the American Chemical Society*, 118 (1996) 11599-11609.
51. B. Fruhberger, J. Eng, Jr. and J.G. Chen, "Observation of Anomalous Reactivities of Ni/Pt(111) Bimetallic Surfaces", *Catalysis Letters*, 45 (1997) 85-92.
52. C.C. Yu, S. Ramanathan, B. Dhandapani, J.G. Chen and S.T. Oyama, "Bimetallic Nb-Mo Carbide Hydroprocessing Catalysts: Synthesis, Characterization and Activity Studies", *Journal of Physical Chemistry*, B 101 (1997) 512-518.
53. R. Kapoor, S.T. Oyama, B. Fruhberger and J.G. Chen, "NEXAFS Characterization and Reactivity Studies of Bimetallic Vanadium Molybdenum Oxynitride Hydrotreating Catalysts", *Journal of Physical Chemistry*, B 101 (1997) 1543-1547.
54. J. Eng, Jr., B.E. Bent, B. Fruhberger and J.G. Chen, "Studies of the Adsorption Geometry and Decomposition Mechanisms of Benzene on Clean and Carbide-Modified Mo(110) Surfaces Using Vibrational Spectroscopy", *Journal of Physical Chemistry*, B 101 (1997) 4044-4054.
55. M.E. Castro, J.G. Chen, R.B. Hall and C.A. Mims, "Reactions of Hot Methyl Groups with Surface Hydrogen during CH_3-I Bond Scission on Ni(111)", *Journal of Physical Chemistry*, B 101 (1997) 4060-4070.
56. D.-H. Sun, B.E. Bent and J.G. Chen, "Chemistry of Cyclopentadiene on a Cu(100) Surface: Detection of cyclopentadienyl (C5H5) species as reaction intermediates", *Journal of Vacuum Science and Technology*, A15 (1997) 1581-1585.
57. J.G. Chen, "NEXAFS Investigations of Transition Metal Oxides, Nitrides, Carbides, Sulfides and Other Interstitial Compounds", *Surface Science Reports*, 30 (1997) 1-152.
58. A.V. Teplyakov, A.B. Gurevich, M.X. Yang, B.E. Bent and J.G. Chen, "NEXAFS and TPD Studies of Molecular Adsorption of Hydrocarbons on Cu(100): Segmental Correlations with the Heats of Adsorption", *Surface Science*, 396 (1998) 340-348.
59. V.S. Lusvardi, M.A. Barteau, J.G. Chen, J. Eng, Jr., B. Fruhberger and A.V. Teplyakov, "A NEXAFS Investigation of the Reduction and Reoxidation of TiO_2(001)", *Surface Science*, 397 (1998) 237-250.

60. A.V. Teplyakov, B.E. Bent, J. Eng, Jr and J.G. Chen, "Vibrational Mode-Softening of Alkanes on Clean and Modified Cu and Mo Surfaces: Absence of a Simple Correlation with Thermal Desorption Temperature", *Surface Science*, 399 (1998) L342-L350.
61. J. Eng, Jr., B.E. Bent, B. Fruhberger and J.G. Chen, "Modifying Surface Reactivities by a Carbide Overlayer: A Vibrational Study of the Reaction Mechanisms of Cyclohexene and 1,3-Cyclohexadiene on Mo(110) and (4x4)-C/Mo(110) Surface", *Langmuir*, 14 (1998) 1301-1311.
62. A.V. Teplyakov, A.B. Gurevich, E.R. Garland, B.E. Bent and J.G. Chen, "Mechanisms of Dehydrocyclization of 1-hexene to Benzene on $Cu_3Pt(111)$: Identification of 1,3,5-hexatriene as Reaction Intermidiate", *Langmuir*, 14 (1998) 1337-1344.
63. Y. Luo, D. Slater, M. Han, J. Moryl, R.M. Osgood, Jr. and J.G. Chen, "In Situ Investigation of the Surface Chemistry of Atomic Layer Epitaxial Growth of II-VI Semiconductor Thin Films", *Langmuir*, 14 (1998) 1493-1499.
64. J.G. Chen, B. Fruhberger, J. Eng, Jr. and B.E. Bent, "Controlling Surface Reactivities of Transition Metals by Carbide Formation", *Journal of Molecular Catalysis A*, 131 (1998) 285-299.
65. I.M. Abdelrehim, K. Pelhos, T.E. Madey, J. Eng, Jr. and J.G. Chen, "A Survey of Acetylene Cyclization on Single Crystals, Supported Particles, and Bimetallic Surfaces: New Cyclization Studies on Bimetallic Pd/W(211)", *Journal of Molecular Catalysis A*, 131 (1998) 107-120.
66. B. Dhandapani, S. Ramanathan, C.C. Yu, S.T. Oyama and J.G. Chen, "Synthesis, Characterization and Reactivity Studies of Supported Mo_2C with Phosphorous Additive", *Journal of Catalysis*, 176 (1998) 61-67.
67. J. Eng, Jr. and J.G. Chen, "Reaction Pathways of Cis- and Trans-2-Butene on Mo(110) and C/Mo(110): Selective Activation of α and β C-H Bonds", *Surface Science*, 414 (1998) 374-388.
68. J.G. Chen, J. Eng, Jr. and S.P. Kelty, "NEXAFS Determination of Electronic and Catalytic Properties of Transition Metal Carbides and Nitrides: From Single Crystal Surfaces to Powder Catalysts", *Catalysis Today*, 43 (1998) 147-158.
69. J. Eng, Jr., B.E. Bent, B. Fruhberger and J.G. Chen, "A Vibrational Study of the Activation Sequence of Carbon-Hydrogen and Carbon-Carbon Bond of Isobutene and 1-Butene on Mo(110) and (4x4)-C/Mo(110) Surfaces", *Catalysis Letters*, 54 (1998) 133-140.
70. M. Han, Y. Luo, D. Slater, J. Moryl, R.M. Osgood, Jr. and J.G. Chen, "A NEXAFS Study of Atomic Layer Epitaxy: the Chemistry of the Growth of CdS layers on a ZnSe(100)", *Surface Science*, 415 (1998) 251-263.
71. J. Eng, Jr., J.G. Chen, I.M. Abdelrehim and T.E. Madey, "Vibrational Study of the Interaction of Acetylene and Benzene on Clean and Carbide-Modified W(211) Surfaces", *Journal of Physical Chemistry* B, 102 (1998) 9687-9696.
72. I.M. Abdelrehim, T.E. Madey, K. Pelhos, J. Eng, Jr. and J.G. Chen, "Reaction Pathways of Acetylene on Pd/W(211): A TPD and HREELS Investigation", *Journal of Physical Chemistry* B, 102 (1998) 9697-9707.
73. S.P. Kelty, J.G. Chen, R.R. Chianelli, J. Ren and M.-H. Whangbo, "Characterization of the RuS_2 (100) Surface by STM, AFM and NEXAFS Measurements and Electronic Band Structure Calculations", *Journal of Physical Chemistry* B, 103 (1999) 4649-4655.
74. Y.L. Soo, S. Huang, Y.H. Kao, J.G. Chen, and S.L. Hulbert, "Local Structures and Interface Morphology of InGaAsN Thin Films Grown on GaAs", *Physical Review* B, 60 (1999) 13605-13611.

75. I. Popova, V.Y. Zhukov, J.T. Yates, Jr. and J.G. Chen, "Electron Stimulated Oxidation of Al(111) in H_2O Vapor – Orientation Effects in the Al_2O_3 Thin Film", *Journal of Applied Physics,* 86 (1999) 7156-7159.
76. A.B. Gurevich, B.E. Bent, A.V. Teplyakov and J.G. Chen, "A NEXAFS Investigation of the Formation and Decomposition of CuO and Cu_2O Thin Films on Cu(100)", *Surface Science,* 442 (1999) L971-L976.
77. H. Kwon, L.T. Thompson, J. Eng, Jr. and J.G. Chen, "n-Butane Dehydrogenation over Vanadium Carbides: Correlating Catalytic and Electronic Properties", *Journal of Catalysis,* 190 (2000) 60-68.
78. A.B. Sherrill, V.S. Lusvardi, J. Eng, Jr. J.G. Chen and M.A. Barteau, "NEXAFS Investigation of Benzaldehyde Reductive Coupling to Form Stilbene on Reduced Surfaces of TiO_2(001)", *Catalysis Today,* 63 (2000) 43-51.
79. V. Schwartz, S.T. Oyama and J.G. Chen, "Supported Bimetallic Nb-Mo Carbides: Synthesis, Characterization and Reactivity", *Journal of Physical Chemistry* B. 104 (2000) 8800-8806.
80. V. Schwartz, V.L. Teixeira da Silva, J.G. Chen and S.T. Oyama, "Mechanism of HDN over Mo and Nb-Mo Carbide Catalysts", *Studies in Surface Science and Catalysis,* 130 (2000) 467-472.
81. K.J. Roe, J. Kolodzey, C.P. Swann, M.W. Tsao, J.F. Rabolt, J.G. Chen and G.R. Brandes, "The Electrical and Optical Properties of Thin Film Diamond Implanted with Silicon", *Applied Surface Science,* 175/176 (2001) 468-473.
82. J.W. Medlin, A.B. Sherrill, J.G. Chen and M.A. Barteau "Experimental and Theoretical Probes of the Structure of Oxametallacycle Intermediates Derived from 1-Epoxy-3butene on Ag(110)", *Journal of Physical Chemistry* B, 105 (2001) 3769-3775.
83. N. Liu, M.T. Buelow, S. Rykov, and J.G. Chen, "Modifying Surface Reactivity by Carbide Formation: Reaction Pathways of Cyclohexene over Clean and Carbide-Modified W(111)", *Journal of Physical Chemistry* B, 105 (2001) 3894-3902.
84. R. Radhakrishnan, S.T. Oyama, K. Asakura and J.G. Chen, "Electron Transfer Effects in Ozone Decomposition on Supported Manganese Oxide", *Journal of Physical Chemistry* B, 105 (2001) 4245-4253.
85. W. Li, S.I. Shah, D. Guerin, J.G. Chen and H.H. Hwu, "Growth and Characterization of Epitaxial Ge1-xCx Thin Films on Si(100)", *Journal of Vacuum Science and Technology,* A19 (2001) 2617-2621.
86. N. Liu, S.A. Rykov, and J.G. Chen, "A Comparative Surface Science Study of Carbide and Oxycarbide: The Effect of Oxygen Modification on the Surface Reactivities of Tungsten Carbide (111)", *Surface Science,* 487 (2001) 107-117.
87. M. Zhang, H.H. Hwu, M.T. Buelow, J.G. Chen, T.H. Ballinger and P.J. Andersen, "Decomposition of NO on Tungsten Carbide and Molybdenum Carbide Surfaces", *Catalysis Letters,* 77 (2001) 29-34.
88. H.H. Hwu, J.G. Chen, K. Kourtakis and J.G. Lavin, "Potential Application of Tungsten Carbide as Electrocatalysts: I. Decomposition of Methanol over Carbide Modified W(111)", *Journal of Physical Chemistry* B, 105 (2001) 10037-10040.
89. H.H. Hwu, B.D. Polizzotti and J.G. Chen, "Potential Application of Tungsten Carbide as Electrocatalysts: II. Co-adsorption of Water and CO on Carbide Modified W(111)", *Journal of Physical Chemistry* B, 105 (2001) 10045-10053.
90. A. Kuznetsova, I. Popova, J.T. Yates, Jr., M.J. Bronokowski, C.B. Huffman, J. Liu, R.E. Smalley, H.H. Hwu and J.G. Chen, "Oxygen-Containing Functional Groups on Single-Wall Carbon Nanotubes – NEXAFS and Vibrational Spectroscopic Studies", *Journal of the American Chemical Society,* 123 (2001) 10699-10704.

91. N. Liu and J.G. Chen, "Synergistic Effect in the Dehydrogenation of Cyclohexene on C/W(111) Surfaces Modified by Submonolayer Coverage Pt", *Catalysis Letters*, 77 (2001) 35-40.
92. A.B. Sherrill, J.W. Medlin, J.G. Chen and M.A. Barteau, "NEXAFS Investigations of Cyclooctatetraene on TiO_2(001)", *Surface Science*, 492 (2001) 203-213.
93. M. Daage, G. B. McVicker, M. S. Touvelle, C. W. Hudson, D. P. Klein, B.R. Cook, J. G. Chen, S. Hantzer, D. E. W. Vaughan and E. S. Ellis, *Studies in Surface Science and Catalysis*, 135 (2001).
94. N.A. Khan, H.H. Hwu and J.G. Chen, "Low-Temperature HDS of Thiophene on Ni/Pt(111) Bimetallic Surfaces with Monolayer Ni Coverage", *Journal of Catalysis*, 205 (2002) 259-265.
95. H.H. Hwu, J. Eng, Jr., and J.G. Chen, "Ni/Pt(111) Bimetallic Surfaces: Unique Chemistry at Monolayer Ni Coverage", *Journal of the American Chemical Society*, 124 (2002) 702-709 (*Featured as News of the Week in Chemical & Engineering News on Feb. 8 2002*).
96. B.D. Polizzotti, H.H. Hwu and J.G. Chen, "The Effect of Carbide Surface Structure: Different Reaction Pathways of Cyclohexene on C/W(110) and C/W(111)", *Surface Science*, 520 (2002) 97-110.
97. G. B. McVicker, M. Daage, M. S. Touvelle, C. W. Hudson, D. P. Klein, W. C. Baird, Jr., B.R. Cook, J. G. Chen, S. Hantzer, D. E. W. Vaughan, E. S. Ellis and O. C. Feeley, "Selective Ring Opening of Naphthenic Molecules", *Journal of Catalysis*, 210 (2002) 137-148.
98. M. Zhang, H.H. Hwu, M.T. Buelow, J.G. Chen, T.H. Ballinger, P.J. Andersen and D.R. Mullins, "Decomposition Pathways of NO on Carbide and Oxycarbide-Modified W(111) Surfaces", *Surface Science*, 522 (2003) 112-122.
99. N. Liu, K. Kourtakis and J.C. Figueroa, J.G. Chen, "Potential Application of Tungsten Carbide as Electrocatalysts: III. Reactions of Methanol, Water, and Hydrogen on Pt-Modified C/W(111) Surfaces", *Journal of Catalysis*, 215 (2003) 254-263.
100. H.H. Hwu and J.G. Chen, "Potential Application of Tungsten Carbide as Electrocatalysts: IV. Reactions of Methanol, Water, and Carbon Monoxide over Carbide-Modified W(110)", *Journal of Physical Chemistry* B, 107 (2003) 2029-2039.
101. J. R. Kitchin, M.A. Barteau and J.G. Chen, "A Comparison of Gold and Molybdenum Nanoparticles on TiO_2(110) 1×2 Reconstructed Single Crystal Surfaces", *Surface Science*, 526 (2003) 323-331.
102. N.A. Khan and J.G. Chen, "Correlating Mechanical Strain with Low-Temperature Hydrogenation Activity on Submonolayer Ni/W(110) Surfaces", *Journal of Physical Chemistry* B, 107 (2003) 4334-4341.
103. H.H. Hwu and J.G. Chen, "Reactions of Methanol and Water on Carbide Modified Mo(110)", *Surface Science*, 536 (2003) 75-87.
104. H.H. Hwu and J.G. Chen, "Potential Application of Tungsten Carbides as Electrocatalysts", *Journal of Vacuum Science and Technology*, A21 (2003) 1488-1493.
105. N.A. Khan and J.G. Chen, "Using Chemical Probes to Investigate Properties of Monolayer Metal Thin Films", *Journal of Vacuum Science and Technology*, A21 (2003) 1302-1306.
106. W. Chen, I. Ermanoski, Q. Wu, T.E. Madey, H.H. Hwu and J.G. Chen, "Adsorption and Decomposition of Acetylene on Planar and Faceted Ir(210", *Journal of Physical Chemistry* B, 107 (2003) 5231-5242.
107. A.B. Sherrill, H. Idriss, M.A. Barteau and J.G. Chen, "Adsorption and Reaction of Acrolein on Titanium Oxide Single Crystal Surfaces: Coupling versus Condensation", *Catalysis Today*, 85 (2003) 321-331.

108. J.R. McCormick, J.R. Kitchin, M.A. Barteau and J.G. Chen, "A Four-Point Probe (FPP) Correlation of Oxygen Sensitivity to Changes in Surface Resistivity of TiO_2(001) and Pd-Modified TiO_2(001)", *Surface Science,* 545 (2003) L741-746.
109. H.H. Hwu and J.G. Chen, "Substrate-Dependent Reaction Pathways of Ethylene on Clean and Carbide-Modified W(110) and W(111)", *Journal of Physical Chemistry* B, 107 (2003) 11467-11474.
110. J.R. Kitchin, N.A. Khan, M.A. Barteau, J.G. Chen and T.E. Madey, "Elucidation of the Active Surface and Origin of the Weak Metal-Hydrogen Bond on Ni/Pt(111) Bimetallic Surfaces: A Surface Science and Density Functional Theory Study", *Surface Science,* 544 (2003) 295-308.
111. W. Li, Y. Wang, H. Lin, S.A. Rykov, S. I. Shah, C. P. Huang, D. J. Doren, J. G. Chen and M.A. Barteau, "Band Gap Tailoring of Nd^{3+} Doped TiO_2 Nanoparticles", *Applied Physics Letters,* 83 (2003) 4143-4145.
112. M.B. Zellner, R.W. Birkmire, E. Eser, W.N. Shafarman, and J.G. Chen, "Activation Energy and Diffusion Mechanism of Na in CIGS Thin Film Solar Cells", *Progress in Photovotaics: Research and Applications,* 11 (2003) 543-548.
113. N.A. Khan and J.G. Chen, "Thiophene HDS Chemistry on Monolayer Ni Films on W(110) and Ru(0001)", *Journal of Molecular Catalysis A,* 208 (2004) 225-232.
114. H.H. Hwu, B. Fruhberger and J.G. Chen, "Different Modification Effects of Carbidic and Graphitic Carbon on Ni Surfaces", *Journal of Catalysis,* 221 (2004) 170-177.
115. H.H. Hwu and J.G. Chen, "Chemical Properties of Carbon-Modified Titanium: Reaction Pathways of Cyclohexene and Ethylene over Ti(0001) and C/Ti(0001), *Surface Science,* 557 (2004) 144-158
116. N.A. Khan, M.B. Zellner and J.G. Chen, "Cyclohexene as a Probe for the Low-Temperature Hydrogenation Activity of Pt/Ni(111) Bimetallic Surfaces", *Surface Science,* 556 (2004) 87-100.
117. J.R. Kitchin, J.K. Norskov, M.A. Barteau and J.G. Chen, "Modification of the Surface Electronic and Chemical Properties of Pt(111) by Subsurface 3d Transition Metals", *Journal of Chemical Physics,* 120 (2004) 10240-10246.
118. N.A. Khan, M.B. Zellner, L.E. Murillo and J.G. Chen, "A Comparison of Similarities and Differences in the Activities of Pt/Ni(111) and Ni/Pt(111)", *Catalysis Letters,* 95 (2004) 1-6.
119. M.B. Zellner and J.G. Chen, "Synthesis, Characterization and Surface Science Reactivity of Tungsten Carbide (WC) PVD Films", *Surface Science,* 569 (2004) 89-98.
120. N.A. Khan, L.E. Murillo and J.G. Chen, "Observation of Novel Low-Temperature Hydrogenation Activity on Co/Pt(111) Surfaces", *Journal of Physical Chemistry* B. 108 (2004) 15748-15754.
121. J.R. Kitchin, J.K. Norskov, M.A. Barteau and J.G. Chen, "The Role of Strain and Ligand Effects in the Modification of the Electronic and Chemical Properties of Bimetallic Surfaces", *Physical Review Letters,* 93 (2004) 156801.
122. J.R. McCormick, B. Zhao, S.A. Rykov, H. Wang and J.G. Chen, "Thermal Stability of Flame-Synthesized TiO_2 Nanoparticles", *Journal of Physical Chemistry* B, 108 (2004) 17398-17402.
123. A.M. Gaffney, S. Chaturvedi, M.B. Clark, S. Han, S.A. Rykov and J.G. Chen, "Characterization and Catalytic Studies of PVD Synthesized Mo/V/Nb/Te Oxide Catalysts", *Journal of Catalysis,* 229 (2005) 12-23.
124. H.H. Hwu, M.B. Zellner, and J.G. Chen, "The Chemical and Electronic Properties of Oxygen-Modified C/Mo(110): A Model System for Molybdenum OxyCarbides", *Journal of Catalysis,* 229 (2005) 30-44.

125. B. Zhao, K. Uchikawa, C. Ni, J.R. McCormick, J.G. Chen and H. Wang, "Ultrafine Anatase TiO_2 Nanoparticles Produced in Premixed Ethylene Stagnation Flames at 1 atm", *Proceedings of the Combustion Institute,* 30 (2005) 2569-2576.
126. H.H. Hwu and J.G. Chen, "Surface Chemistry of Transition Metal Carbides", *Chemical Reviews,* 105 (2005) 185-212.
127. E.C. Weigert, J. South and J.G. Chen, "Multifunctional Composites Containing Molybdenum Carbides as Potential Electrocatalysts", *Catalysis Today,* 99 (2005) 285-290.
128. M.B. Zellner and J.G. Chen, "Surface Science and Electrochemical Studies of W_2CPVD and WC Films as Potential Electrocatalysts", *Catalysis Today,* 99 (2005) 299-307.
129. J.K. Norskov, T. Bligaard, A. Logadottir, J.R. Kitchin, J.G. Chen, S. Pandelov and U. Stimming, "Trends in the Exchange Current for Hydrogen Evolution", *Journal of the Electrochemical Society*, 152 (2005) J23-J26.
130. J.R. Kitchin, J.K. Norskov, M.A. Barteau and J.G. Chen, "Trend in the Chemical Properties of Early Transition Metal Carbide Surfaces: A Density Functional Study", *Catalysis Today,* 105 (2005) 66-73.
131. M.B. Zellner and J.G. Chen, "Potential Application of Tungsten Carbides as Electrocatalysts: Synergistic Effect by Supporting Pt on C/W(110) for the Reactions of Methanol, Water, and CO", *Journal of the Electrochemical Society*, 152 (2005) A1483-A1494.
132. E.C. Weigert, N.A. Smith, B.G. Willis and J.G. Chen, "PVD Synthesis and Characterization of Pt-Modified Molybdenum Carbides as Potential Electrocatalysts", *Solid State and Electrochemical Letters,* 8 (2005) A337-A340.
133. M.B. Zellner, A.M. Goda, O. Skoplyak, M.A. Barteau and J.G. Chen, "Trends in the Adsorption and Decomposition of Hydrogen and Ethylene on Monolayer Metal Films: A Combined DFT and Experimental Study", *Surface Science,* 583 (2005) 281-296.
134. L.E. Murillo, N.A. Khan and J.G. Chen, "The Effect of Hydrocarbon Structure and Chain Length on the Low-Temperature Hydrogenation Activity on Ni/Pt(111) Bimetallic Surfaces", *Surface Science,* 594 (2005) 27-42.
135. M.B. Zellner and J.G. Chen, "Supporting Monolayer Pt on W(110) and C/W(110): Modification Effects on the Reaction Pathways of Cyclohexene", *Journal of Catalysis,* 235 (2005) 393-402.
136. M.B. Zellner, H.H. Hwu and J.G. Chen, "Comparative Studies of Methanol Decomposition on Carbide-Modified V(110) and Ti(0001)", *Surface Science*, 598 (2005) 185-199.
137. N.A. Khan, L.E. Murillo, Y. Shu, J.G. Chen, "Correlating Low-Temperature Hydrogenation Activity of Co/Pt(111) Bimetallic Surfaces to Supported Co/Pt/γ-Al_2O_3 Catalysts", *Catalysis Letters,* 105 (2005) 233-238.
138. O. Skoplyak, M.A. Barteau and J.G. Chen, "Reforming of Oxygenates for H_2 Production: Correlating Reactivity of Ethylene Glycol and Ethanol on Pt(111) and Ni/Pt(111) with Surface *d*-band Center", *Journal of Physical Chemistry* B, 110 (2006) 1686-1694.
139. S. Wang, W. Lin, Y. Z., Y. Xie, J.G. Chen, "Preparation and Catalytic Activity of Monolayer Dispersed Pt/Ni Bimetallic Catalysts for C=C and C=O Hydrogenation", *Chinese Journal of Catalysis,* 27 (2006) 301-303.
140. A. M. Goda, M. A. Barteau, and J. G. Chen, "Correlating Electronic Properties of Bimetallic Surfaces with Reaction Pathways of C2 Hydrocarbons", *Journal of Physical Chemistry* B, 110 (2006) 11823-11831.
141. S. Buzby, M. A. Barakat, H. Lin, C. Ni and S. Ismat Shah, S. A. Rykov, J.G. Chen, "Visible Light Photocatalysis with Nitrogen Doped Titanium Dioxide NanoParticles

Prepared by Plasma Assisted Chemical Vapor Deposition**",** *Journal of Vacuum Science and Technology* B, 24 (2006) 1210-1214.

142. C.A. Menning, H.H. Hwu, and J.G. Chen, "Experimental and Theoretical Investigation of the Stability of Pt-3d-Pt(111) Bimetallic Surfaces under Oxygen Environment", *Journal of Physical Chemistry* B, 110 (2006) 15471-15477.
143. J.K. Norskov, T. Bligaard, A. Logadottir, J.R. Kitchin, J.G. Chen, S. Pandelov and U. Stimming, "Response to Comments on Trends in the Exchange Current for Hydrogen Evolution", *Journal of the Electrochemical Society,* 153 (2006) L33-L33.
144. W. Huang, J.R. McCormick, R.F. Lobo, and J.G. Chen, "Selective Hydrogenation of Acetylene in the Presence of Ethylene on Zeolite-Supported Bimetallic Catalysts", *Journal of Catalysis,* 246 (2007) 40-51.
145. S. Wang, W. Lin, Y.X. Zhu, Y. Xie, J.R. McCormick, W. Huang, and J.G. Chen, "Pd-Based Bimetallic Catalysts Prepared by Replacement Reactions", *Catalysis Letters,* 114 (2007) 169-173.
146. M.S. Angelo, B.E. McCandless, R.W. Birkmire, S.A. Rykov and J.G. Chen, "Contact Wetting Angle as a Diagnostic Technique for Processing CdTe/CdS Solar Cells", *Progress in Photovotaics: Research and Applications,* 15 (2007) 93-111.
147. L.E. Murillo, A.M. Goda and J.G. Chen, "Selective Hydrogenation of C=O Bond in Acrolein through Architecture of Bimetallic Surface Structures", *Journal of the American Chemical Society,* 129 (2007) 7101-7105.
148. S. Wang, W. Lin, Y.X. Zhu, Y. Xie, J.G. Chen, "Preparation and Catalytic Performance of Monolayer Dispersed Pd/Ni Bimetallic Catalysts for Hydrogenation", *Chinese Journal of Catalysis,* 28 (2007) 676-680.
149. E.C. Weigert, A.L. Stottlemyer, M.B. Zellner and J.G. Chen, "Tungsten Monocarbide as Potential Replacement of Platinum for Methanol Electrooxidation", *Journal of Physical Chemistry* C, 111 (2007) 14617-14620.
150. D.M. Wang, C.P. Huang, J.G. Chen, H.Y. Lin, and S.I. Shah, "Reduction of Perchlorate in Dilute Aqueous Solution over Monometallic Nanocatalysts" Exemplified by Tin", *Separation and Purification Technology,* 58 (2007) 129-137.
151. W. Huang, W. Pyrz, R.F. Lobo, and J.G. Chen, "Selective Hydrogenation of Acetylene in the Presence of Ethylene on K^+-β-Zeolite Supported Pd and PdAg Catalysts", *Applied Catalysis A,* 333 (2007) 254-263.
152. O. Skoplyak, M.A. Barteau and J.G. Chen, "Experimental and Theoretical Study of the Trend in the Reactivity of Methanol on Co/Pt(111) and Ni/Pt(111) Bimetallic Surfaces", *Journal of Chemical Physics,* 127 (2007) 114707.
153. E.C. Weigert, M.B. Zellner, A.L. Stottlemyer and J.G. Chen, "A Combined Surface Science and Electrochemical Study of Tungsten Carbides as Anode Electrocatalysts", *Topics in Catalysis,* 46 (2007) 349-357.
154. D.M. Wang, S.I. Shah, J.G. Chen and and C.P. Huang, "Catalytic Reduction of Perchlorate by H_2 Gas in Dilute Aqueous Solutions", *Separation and Purification Technology,* 60 (2008) 14-21.
155. E.C. Weigert, M.P. Humbert, Z.J. Mellinger, Q. Ren, T.P. Beebe, Jr., L. Bao, and J.G. Chen, "PVD Synthesis of Tungsten Monocarbide Thin Films on Different Carbon Substrates", *Journal of Vacuum Science and Technology,* A26 (2008) 23-28.
156. S. Wang, J. He, J. Xie, Y.X. Zhu, Y. Xie, J.G. Chen, "Synthesis of Bimetallic System Using Replacement Reactions", *Applied Surface Science,* 254 (2008) 2102-2109.
157. L.E. Murillo and J.G. Chen, "A Comparative Study of the Adsorption and Hydrogenation of Acrolein on Pt(111), Ni(111) Film and Pt-Ni-Pt(111) Bimetallic Surfaces", *Surface Science,* 602 (2008) 919-931.

158. W. Huang, R.F. Lobo and J.G. Chen, "Characterization of Na^+-β-Zeolite Supported Pd and PdAg Bimetallic Catalysts Using EXAFS, TEM and Flow Reactor", *Journal of Molecular Catalysis A,* 283 (2008) 158-165.
159. K. Beadle, R. Gupta, A. Matthew, J.G. Chen, and B.G. Willis, "CVD Synthesis of Phase-Rich WC Thin Films on Silicon and Carbon Substrates", *Thin Solid Films,* 516 (2008) 3847-3854.
160. Y. Shu, L.E. Murillo, J.P. Bosco, W. Huang, A.I. Frenkel, and J.G. Chen, "The Effect of Impregnation Sequence on the Hydrogenation Activity and Selectivity of Supported PtNi Bimetallic Catalysts", *Applied Catalysis A,* 339 (2008) 169-179.
161. J.G. Chen, C.A. Menning and M.B. Zellner, "Monolayer Bimetallic Surfaces: Experimental and Theoretical Studies of Trends in the Electronic and Chemical Properties", (*Invited Review*), *Surface Science Reports,* 63 (2008) 201-254.
162. Z.J. Mellinger, E.C. Weigert, A.L. Stottlemyer and J.G. Chen, "Enhancing the CO Tolerance of PEM Fuel Cell Electrocatalysts: Surface Science and Electrochemical Characterization of Pt-Modified Tungsten Carbide (WC) Thin Films", *Electrochemical and Solid State Letters,* 11 (2008) B63-B67.
163. C.A. Menning, and J.G. Chen, "Thermodynamics and Kinetics of Oxygen-Induced Segregation of 3d Metals in Pt-3d-Pt(111) and Pt-3d-Pt(100) Bimetallic Structures", *Journal of Chemical Physics,* 128 (2008) 164703.
164. M.P. Humbert, L.E. Murillo, and J.G. Chen, "Rational Design of Pt-Based Bimetallic Catalysts with Enhanced Hydrogenation Activity", *ChemPhysChem,* 9 (2008) 1262-1264.
165. O. Skoplyak, M.A. Barteau and J.G. Chen, "Enhancing H_2 Production from Glycerol Using Bimetallic Surfaces", *ChemSusChem,* 1 (2008) 524-526 (*Journal Cover*).
166. R. Mahmudov, Y. Shu, S.A. Rykov, J.G. Chen, and C.P. Huang, "The Reduction of Perchlorate by Novel Hydrogenation Catalysts", *Applied Catalysis B,* 81 (2008) 78-87.
167. M.P. Humbert and J.G. Chen, "Correlating Hydrogenation Activity with Binding Energies of Hydrogen and Cyclohexene on M/Pt(111) (M = Fe, Co, Ni, Cu) Bimetallic Surfaces", *Journal of Catalysis,* 257 (2008) 297-306.
168. L.E. Murillo and J.G. Chen, "Adsorption and Reaction of Propanal, 2-Propenol and 1-Propanol on Ni/Pt(111) Bimetallic Surfaces", *Surface Science,* 602 (2008) 2412-2420.
169. A. M. Goda, M. Neurock, M. A. Barteau, and J. G. Chen, "Effect of hydrocarbon chain length and cyclization on the adsorption strength of unsaturated hydrocarbons on Pt/3d bimetallic surfaces", *Surface Science,* 602 (2008) 2513-2523.
170. S. Lu, W.W. Lonergan, J.P. Bosco, S. Wang, Y. Zhu, Y. Xie, and J.G. Chen, "Low Temperature Hydrogenation of Benzene and Cyclohexene: A Comparative Study between γ-Al_2O_3 Supported PtCo and PtNi Bimetallic Catalysts", *Journal of Catalysis,* 259 (2008) 260-268.
171. N. Ji, T. Zhang, M. Zheng, A. Wang, H. Wang, X. Wang, J.G. Chen, "Direct catalytic conversion of cellulose into ethylene glycol using Ni-promoted tungsten carbide catalysts", *Angewandte Chemie International Edition,* 47 (2008) 8510-8513 (*Journal Cover; Featured in Angewandte Press Release in Sept. 2008*).
172. O. Skoplyak, M.A. Barteau and J.G. Chen, "Reforming of oxygenates for H_2 production on 3*d*/Pt(111) bimetallic surfaces", *Topics in Catalysis,* 51 (2008) 49-59.
173. O. Skoplyak, M.A. Barteau and J.G. Chen, "Ethanol and Ethylene Glycol on Ni/Pt(111) Bimetallic Surfaces: A DFT and HREELS Study", *Surface Science,* 602 (2008) 3578-3587.
174. E.L. Kunkes, D.A. Simonetti, J.A. Dumesic, W.D. Pyrz, L.E. Murillo, J.G. Chen and D.J. Buttrey, "The role of rhenium in the conversion of glycerol to synthesis gas over carbon supported platinum-rhenium catalysts", *Journal of Catalysis,* 260 (2008) 164-177.

175. W. Chen, T.E. Madey, A.L. Stottlemyer, J.G. Chen, P. Kaghazchi, and T. Jacob, "Structure Sensitivity in Adsorption and Decomposition of NO on Ir", *Journal of Physical Chemistry* C, 112 (2008) 19113-19120.
176. E.C. Weigert, S. Arisetty, S.G. Advani, A.K. Prasad, and J.G. Chen, "Electrochemical Evaluation of Tungsten Monocarbide (WC) and Platinum-Modified WC as Alternative DMFC Electrocatalysts", *Journal of New Materials for Electrochemical Systems*, 11 (2008) 243-251.
177. H. Shao, E.L. Kugler, D.B. Dadyburjor, S.A. Rykov and J.G. Chen, "Correlating NEXAFS Characterization of Co-W and Ni-W Bimetallic Carbide Catalysts with Reactivity for Dry Reforming of Methane", *Applied Catalysis A*, 356 (2009) 18-22.
178. C.A. Menning and J.G. Chen, "General Trend for Adsorbate-Induced Segregation of Subsurface Metal Atoms in Bimetallic Surfaces", *Journal of Chemical Physics*, 130 (2009) 174709.
179. D.V. Esposito, K.D. Dobson, B.E. McCandless, R.W. Birkmire and J.G. Chen, "A Comparative Study of Tungsten Monocarbide and Platinum as Counterelectrode Materials in Polysulfide-Based Photoelectrochemical Solar Cells", *Journal of the Electrochemical Society*, 156 (2009) B962-B969.
180. W. Huang, A. Li, R.F. Lobo and J.G. Chen, "Effects of Zeolite Structures, Exchanged Cations, and Bimetallic Formulations on the Selective Hydrogenation of Acetylene over Zeolite-Supported Catalysts", *Catalysis Letters*, 130 (2009) 380-385.
181. E.C. Weigert, D.V. Esposito and J.G. Chen, "Cyclic Voltammetry and XPS Studies of Electrochemical Stability of Clean and Pt-Modified Tungsten and Molybdenum Carbide (WC and Mo_2C) Electrocatalysts", *Journal of Power Sources*, 193 (2009) 501-506.
182. S. Lu, C.A. Menning, Y. Zhu and J.G. Chen, "Correlating benzene hydrogenation activity with binding energies of hydrogen and benzene on Co-based bimetallic catalysts", *ChemPhysChem*, 10 (2009) 1763-1765.
183. A.L. Stottlemyer, H. Ren and J.G. Chen, "Reactions of methanol and ethylene glycol on Ni/Pt: Bridging the materials gap between single crystal and polycrystalline bimetallic surfaces", *Surface Science*, 603 (2009) 2630–2638.
184. S. Lu, W.W. Lonergan, Y. Zhu and J.G. Chen, "Support Effect on the Low-Temperature Hydrogenation of Benzene over PtCo Bimetallic and the Corresponding Monometallic Catalysts", *Applied Catalysis B*, 91 (2009) 610–618.
185. N. Ji, T. Zhang, M. Zheng, A. Wang, H. Wang, X. Wang, Y. Shu, A.L. Stottlemyer and J.G. Chen, "Catalytic conversion of cellulose into ethylene glycol over supported carbide catalysts", *Catalysis Today*, 147 (2009) 77-85.
186. O. Skoplyak, M.A. Barteau and J.G. Chen, "Comparison of H_2 production from ethanol and ethylene glycol on M/Pt(111) (M = Ni, Fe, Ti) bimetallic surfaces", *Catalysis Today*, 147 (2009) 150-157.
187. A.M. Karim, V. Prasad, G. Mpourmpakis, W.W. Lonergan, A.I. Frenkel, J.G. Chen, and D.G. Vlachos, "Correlating Particle Size and Shape of Supported $Ru/\gamma\text{-}Al_2O_3$ with NH_3 Decomposition Activity", *Journal of the American Chemical Society*, 131 (2009) 12230-12239.
188. S. Lu, Q. Fang, Y. Zhu, Y. Xie and J.G. Chen, "Influence of the phase composition of titania on catalytic behavior of $PtCo/TiO_2$ for the hydrogenation of benzene", *Chinese Journal of Catalysis*, 30 (2009) 748-752.
189. W. Chen, A.L. Stottlemyer, J.G. Chen, P. Kaghazchi, and T. Jacob, T.E. Madey, R. Bartynski, "Adsorption and Decomposition of NO on O-covered Planar and Faceted Ir(210)", *Surface Science*, 603 (2009) 3136-3144.

190. L.E. Murillo, C.A. Menning and J.G. Chen, "Trend in the C=C and C=O Bond Hydrogenation of Acrolein on Pt-M (M = Ni, Co, Cu) Bimetallic Surfaces", *Journal of Catalysis*, 268 (2009) 335-342.
191. D.V. Esposito, O.Y. Goue, K.D. Dobson, B.E. McCandless, J.G. Chen and R.W. Birkmire, "A New Photoelectrochemical Test Cell and Its Use for a Combined Two- and Three-Electrode Approach to Performance Evaluation", *Review of Scientific Instrument*, 80 (2009) 125107.
192. C.A. Menning and J.G. Chen, "Regenerating Pt-3d-Pt Model Electrocatalysts through Oxidation-Reduction Cycles Monitored at Atmospheric Pressure", *Journal of Power Sources*, 195 (2010) 3140-3144.
193. J.P. Bosco, K. Sasaki, M. Sadakane, W. Ueda and J.G. Chen, "Synthesis and Characterization of Three-Dimensionally Ordered Macroporous (3DOM) Tungsten Carbide: Application to Direct Methanol Fuel Cells", *Chemistry of Materials*, 22 (2010) 966-973.
194. H. Ren, M.P. Humbert, C.A. Menning, J.G. Chen, Y. Shu, U. Singh, and W.-C. Cheng, "Inhibition of Coking and CO Poisoning of Pt Catalysts Surfaces by the Formation of Au/Pt Bimetallic Surfaces", *Applied Catalysis A*, 375 (2010) 303-309.
195. J.G. Chen, S. Qi, M.P. Humbert, C.A. Menning, Y. Zhu, "Rational Design of Low-Temperature Hydrogenation Catalysts: Theoretical Predictions and Experimental Verification", *Acta Physico-Chimica Sinica*, (Invited Review), 26 (2010) 869-876.
196. M.P. Humbert, C.A. Menning, and J.G. Chen, "Replacing Bulk Pt in Pt-Ni-Pt Bimetallic Structures with Tungsten Monocarbide (WC): Hydrogen Adsorption and Cyclohexene Hydrogenation on Pt-Ni-WC", *Journal of Catalysis*, 271 (2010) 132-139.
197. C.A. Menning, and J.G. Chen, "Theoretical Prediction and Experimental Verification of Stability of Pt-3d-Pt Subsurface Bimetallic Structures: From Single Crystal Surfaces to Polycrystalline Films", *Topics in Catalysis*, 53 (2010) 338-347.
198. W.W. Lonergan, D.G. Vlachos and J.G. Chen, "Correlating Extent of Ni-Pt Bond Formation with Low Temperature Hydrogenation of Benzene and 1,3-Butadiene over PtNi Bimetallic Catalysts", *Journal of Catalysis*, 271 (2010) 239-250.
199. S. Qi, W. Yu, W.W. Lonergan, B. Yang, and J.G. Chen, "General Trend in the Partial and Complete Hydrogenation of 1,4-Cyclohexadiene over Pt/Co, Pt/Ni and Pt/Cu Bimetallic Catalysts", *ChemCatChem*, 2 (2010) 625-628.
200. D.A. Hansgen, D.G. Vlachos and J.G. Chen, "Using First Principles to Predict Bimetallic Catalysts for the Ammonia Decomposition Reaction", *Nature Chemistry*, 2 (2010) 484-489.
201. W. Yin, D.V. Esposito, S. Yang, C. Ni, J.G. Chen, G. Zhao, Z. Zhang, C. Hu, M. Cao and B. Wei, "Controlling Red-light Emissions by N-Doped In_2O_3 Nano/Microstructures", *Journal of Physical Chemistry* C, 114 (2010) 13234-13240.
202. S. Qi, W. Yu, W.W. Lonergan, B. Yang, and J.G. Chen, "Low-Temperature Hydrogenation and Dehydrogenation of 1,3-Cyclohexadiene on Pt/Ni Bimetallic Catalysts", *Chinese Journal of Catalysis*, 31 (2010) 955-960.
203. A.L. Stottlemyer, P. Liu and J.G. Chen, "Comparison of Bond Scission Sequence of Methanol on Tungsten Monocarbide (WC) and Pt-modified WC", *Journal of Chemical Physics*, 133 (2010) 104702.
204. J.-H. Meng, C.A. Menning, M.B. Zellner and J.G. Chen, "Effects of Bimetallic Modification on the Decomposition of CH_3OH and H_2O on Pt/W(110) Bimetallic Surfaces", *Surface Science*, 604 (2010) 1845-1853.

205. C. Liu, Q. Zhu, Z. Wu, Z. Zhou, G. Bhargava, S. Parasher, M. Rueter, B. Zhou, and J.G. Chen, "Control of Pt Nanoparticle Surface Structures by Polyacrylic Acid over Pt/Re Naphtha Reforming Catalysts", *Applied Catalysis A*, 390 (2010) 19-25.
206. D.G. Vlachos, J.G. Chen, R.J. Gorte, G.W. Huber and M. Tsapatsis, "Catalysis Center for Energy Innovation for Biomass Processing: Research Strategies and Goals", *Catalysis Letters*, 140 (2010) 77-84.
207. M.C. Weidman, D.V. Esposito and J.G. Chen, "The Electrochemical Properties of Tungsten and Tungsten Monocarbide (WC) Over Wide pH and Potential Ranges", *Journal of the Electrochemical Society*, 157 (2010) F179-F188.
208. Q. Lu, Z.J.Mellinger, W. Wang, W. Li, Y. Chen, J. G.Chen and J.Q. Xiao, "Differentitaion of bulk and surface contribution to super-capacitance in amorphous and crystalline NiO", *ChemSusChem*, 3 (2010) 1367-1370.
209. D.V. Esposito, S.T. Hunt, A.L. Stottlemyer, K.D. Dobson, B.E. McCandless, R.W. Birkmire and J.G. Chen, "Low-Cost Hydrogen Evolution Catalysts Based on Monolayer Platinum on Tungsten Monocarbide (WC) Substrates", *Angewandte Chemie International Edition*, 49 (2010) 9859-9862 (*Journal Cover; Featured in Angewandte Press Release in Oct. 2010*).
210. A.L. Stottlemyer, E.C. Weigert, and J.G. Chen, "Tungsten Carbides as Alternative Electrocatalysts: From Surface Science Studies to Fuel Cell Evaluation", *Industrial & Engineering Chemistry Research*, 50 (2011) 16-22.
211. S. Qi, B.A. Cheney, R. Zheng, W.W Lonergan, W. Yu, and J.G. Chen, "The effects of oxide supports on the low temperature hydrogenation activity of acetone over Pt/Ni bimetallic catalysts", *Applied Catalysis A*, 393 (2011) 44-49.
212. W.W. Lonergan, X. Xing, R. Zheng, S. Qi, B. Huang, and J.G. Chen, "Low-Temperature 1,3-Butadiene Hydrogenation over Supported Pt/3d/γ-Al_2O_3 Bimetallic Catalysts", *Catalysis Today*, 160 (2011) 61-69.
213. B.A. Cheney, J.A. Lauterbach and J.G. Chen, "Reverse Micelle Synthesis and Characterization of Pt/Ni Bimetallic Catalysts", *Applied Catalysis A*, 394 (2011) 41-47.
214. R. Zheng, Y.X. Zhu and J.G. Chen, "Promoting low temperature hydrogenation of C=O bonds of acetone and acetaldehyde using Co/Pt bimetallic catalysts", *ChemCatChem*, 3 (2011) 578-581.
215. I.J. Hsu, D.A. Hansgen, B.E. McCandless, B.G. Willis and J.G. Chen, "Atomic Layer Deposition of Pt on Tungsten Monocarbide (WC) for the Oxygen Reduction Reaction", *Journal of Physical Chemistry* C, 115 (2011) 3709-3715.
216. H. Ren, D.A. Hansgen, T.G. Kelly, A.L. Stottlemyer and J.G. Chen, "Replacing Platinum with Tungsten Carbide (WC) for Reforming Reactions: Similarities in Ethanol Decomposition on Ni/Pt and Ni/WC Surfaces", *ACS Catalysis*, 1 (2011) 390-398.
217. T.G. Kelly, A.L. Stottlemyer, H. Ren and J.G. Chen, "Comparison of O-H, C-H and C-O Bond Scission Sequence of Methanol on Tungsten Carbide Surfaces Modified by Ni, Rh and Au", *Journal of Physical Chemistry* C, 115 (2011) 6644-6650.
218. M.P. Humbert, A.L. Stottlemyer, C.A. Menning, and J.G. Chen, "Bridging the Materials Gap between Single Crystal and Supported Catalysts Using Polycrystalline Ni/Pt Surfaces for Cyclohexene Hydrogenation", *Journal of Catalysis*, 280 (2011) 96-103.
219. D.A. Hansgen, L.M. Thomanek, J.G. Chen, and D.G. Vlachos, "Experimental and theoretical studies of ammonia decomposition activity on Fe-Pt, Co-Pt and Cu-Pt bimetallic surfaces", *Journal of Chemical Physics*, 134 (2011) 184701.
220. R. Zheng, M.P. Humbert, Y. Zhu and J.G. Chen, "Low-temperature hydrogenation of the C=O bond of propanal over Ni-Pt bimetallic catalysts: From model surfaces to supported catalysts", *Catalysis Science and Technology*, 1 (2011) 638-643.

221. M. Shao, B. Merzougui, K. Shoemaker, L. Stolar, L. Protsailo, Z.J. Mellinger, I.J. Hsu and J.G. Chen, "Tungsten Carbide Modified High Surface Area Carbon as Fuel Cell Catalyst Support", *Journal of Power Sources*, 196 (2011) 7426-7434.
222. M. Salciccioli, W. Yu, M.A. Barteau, J.G. Chen, D.G. Vlachos, **"**Differentiation of O-H and C-H Bond Scission Mechanisms of Ethylene Glycol on Pt and Ni/Pt Using Theory and Isotopic Labeling Experiments"**,** *Journal of the American Chemical Society,* 133 (2011) 7996-8004.
223. Q. Lu, M.W. Lattanzi, Y. Chen, X. Kou, W. Li, X. Fan, K.M. Unruh, J.G. Chen, J.Q. Xiao, "High Energy and Power Density Supercapacitor Electrode Prepared from Monolithic NiO/Ni Nanocomposite", *Angewandte Chemie International Edition*, 50 (2011) 6847-6850 (*Journal Cover*).
224. I.J. Hsu, D.V. Esposito, E.G. Mahoney, A. Black and J.G. Chen, "Particle shape control using pulse electrodeposition: methanol electrooxidation as a probe reaction on Pt dendrites and cubes", *Journal of Power Sources*, 196 (2011) 8307-312.
225. D.V. Esposito, J.G. Chen, R.W. Birkmire, Y. Chang, and N. Gaillard, "Hydrogen Production from Photo-driven Methanol Electrolysis over Pt-Modified Tungsten Oxide Photoelectrodes", *International Journal of Hydrogen Energy*, 36 (2011) 9632-9644.
226. A.I. Frenkel, Q. Wang, N. Marinkovic, J.G. Chen, L. Barrio, R. Si, A. López Cámara, A.M. Estrella, J.A. Rodriguez, J.C. Hanson, "Combining X-ray absorption and X-ray diffraction techniques for *in situ* studies of chemical transformations in heterogeneous catalysis: advantages and limitations", *Journal of Physical Chemistry* C, 115 (2011) 17884-17890.
227. D.A. Hansgen, D.G. Vlachos and J.G. Chen, "Ammonia Decomposition Activity on Monolayer Ni Supported on Ru, Pt and WC Substrates", *Surface Science,* 605 (2011) 2055-2060.
228. W.W. Lonergan, T. Wang, D.G. Vlachos and J.G. Chen, "Effect of oxide support surface area on hydrogenation activity: Pt/Ni bimetallic catalysts supported on low and high surface area Al_2O_3 and ZrO_2", *Applied Catalysis A*, 408 (2011) 87-95.
229. D.V. Esposito and J.G. Chen, "Monolayer Platinum Supported on Tungsten Carbides as Low-Cost Electrocatalysts: Opportunities and Limitations", *Energy & Environmental Science*, (Invited Perspective), 4 (2011) 3900-3912.
230. W. Yu, M.A. Barteau and J.G. Chen, "Glycolaldehyde as a Probe Molecule for Biomass-derivatives: Reaction of C-OH and C=O Functional Groups on Monolayer Ni Surfaces", *Journal of the American Chemical Society,* 133 (2011) 20528-20535.
231. I.J. Hsu, Y.C. Kimmel, S. Chen and J.G. Chen, "Rotating Disk Electrode Measurements of Activity and Stability of Monolayer Pt on Tungsten Carbide Disks for Oxygen Reduction Reaction", *Journal of Power Sources,* 199 (2012) 46-52.
232. I.J. Hsu, Y.C. Kimmel, B.G. Willis and J.G. Chen, "Atomic Layer Deposition Synthesis of Platinum-Tungsten Carbide Core-Shell Catalysts for the Hydrogen Evolution Reaction", *Chemical Communications,* 48 (2012) 1063-1065.
233. Y.C. Kimmel, D.V. Esposito, R.W. Birkmire and J.G. Chen, "Effect of Surface Carbon on the Hydrogen Evolution Reactivity of Tungsten Carbide (WC) and Pt-Modified WC Electrocatalysts", *International Journal of Hydrogen Energy*, 37 (2012) 3019-3024.
234. M.C. Weidman, D.V. Esposito, Y-C. Hsu and J.G. Chen, "Comparison of Electrochemical Stability of Transition Metal Carbides (WC, W_2C, Mo_2C) Over a Wide pH Range", *Journal of Power Sources*, 202 (2012) 11-17.
235. R. Zheng, M.D. Porosoff, J.L. Weiner, S. Lu, Y. Zhu and J.G. Chen, "Controlling hydrogenation of C=O and C=C bonds in cinnamaldehyde using silica supported Co-Pt and Cu-Pt bimetallic catalysts", *Applied Catalysis A*, 419/420 (2012) 126-132.

236. D.V. Esposito, S.T. Hunt, Y.C. Kimmel and J.G. Chen, "A New Class of Electrocatalysts for Hydrogen Production from Water Electrolysis: Metal Monolayers Supported on Low-Cost Transition Metal Carbides", *Journal of the American Chemical Society*, 134 (2012) 3025-3033. (*Highlighted in Chemical & Engineering News on Jan. 23, 2012*).
237. W. Yu, Z.J. Mellinger, M.A. Barteau and J.G. Chen, "Comparison of Reaction Pathways of Ethylene Glycol, Acetaldehyde and Acetic Acid on Tungsten Carbide (WC) and Ni-modified WC Surfaces", *Journal of Physical Chemistry* C, 116 (2012) 572-5729.
238. C. Weiland, L. Yang, C.A. Menning, B.G. Willis, J.G. Chen, D.J. Doren and R. Opila, "The Binding of Styrene on Si (111)-7x7 Surfaces as a Model Molecular Electronics System", *Journal of Vacuum Science and Technology A*, 30 (2012) 31401.
239. Y. Huang, D.G. Vlachos and J.G. Chen, "Synthesis of Rigid and Stable Large-Inner-Diameter Multiwalled Carbon Nanotubes", *RSC Advances*, 2 (2012) 2685-2687.
240. Z.J. Mellinger, T.G. Kelly and J.G. Chen, " Pd-Modified Tungsten Carbide for Methanol Electro-oxidation: From Surface Science Studies to Electrochemical Evaluation", *ACS Catalysis*, 2 (2012) 751-758.
241. X. Yang, Y.C. Kimmel, J. Fu, B.E. Koel and J.G. Chen "Activation of tungsten carbide catalysts by use of an oxygen plasma pretreatment", *ACS Catalysis*, 2 (2012) 765-769.
242. P.T. Do, A.J. Foster, J.G. Chen and R.F. Lobo, "Bimetallic Effects in the Hydrodeoxygenation of meta-Cresol on γ-Al_2O_3 Supported Pt-Ni and Pt-Co Catalysts", *Green Chemistry*, 14 (2012) 1388-1397.
243. N. Ji, M. Zheng, A. Wang, T. Zhang and J.G. Chen, "Ni-promoted Tungsten Carbide for Cellulose Conversion: Effect of Preparation Methods", *ChemSusChem*, 5 (2012) 939-944.
244. Y. Huang, F. Deng, C. Ni, J.G. Chen and D.G. Vlachos, "Synthesis of Mesoporous Silica Nanobamboo with Highly Dispersed Tungsten Carbide Nanoparticles", *Dalton Transactions*, 41 (2012) 6914-6918.
245. J.R. McManus, M. Salciccioli, W. Yu, D.G. Vlachos, J.G. Chen and J.M. Vohs, "Correlating the Surface Chemistry of C_2 and C_3 Aldoses with a C_6 Sugar: Reaction of Glucose, Glyceraldehyde and Glycolaldehyde on Pd(111)", *Journal of Physical Chemistry C*, 116 (2012) 18891-18898.
246. J.R. McManus, W. Yu, M. Salciccioli, D.G. Vlachos, J.G. Chen and J.M. Vohs, "Biomass-Derived Oxygenate Reforming on Pt(111): A Demonstration of Surface Science using D-Glucose and its Model Surrogate Glycolaldehyde", *Surface Science*, 606 (2012) L91-L94.
247. D.V. Esposito, R. V. Forest, Y. Chang, S. Hou, B.E. McCandless, N. Gaillard, K.H. Lee, R.W. Birkmire and J.G. Chen, "Photoelectrochemical Reforming of Glucose to Produce H_2 using a WO_3-based Tandem Cell Device", *Energy & Environmental Science*, 5 (2012) 9091-9099.
248. A.I. Frenkel, J.A. Rodriguez and J.G. Chen, "Synchrotron techniques for *in situ* catalytic studies: Capabilities, challenges and opportunities", *ACS Catalysis*, (*Invited Perspective*), 2 (2012) 2269-2280.
249. S.A. Tupy, A.M. Karim, C. Bagia, W. Deng, Y. Huang, D.G. Vlachos and J.G. Chen, "Correlating ethylene glycol reforming activity with in-situ EXAFS detection of Ni segregation in supported NiPt bimetallic catalysts", *ACS Catalysis*, 2 (2012) 2290-2296.
250. W. Yu, M.D. Porosoff and J.G. Chen, "Review of Pt-based Bimetallic Catalysis: From Model Surfaces to Supported Catalysts", *Chemical Reviews*, 112 (2012) 5780-5817.
251. T.D. Courtney, V. Nikolakis, G. Mpourmpakis, J.G. Chen and D.G. Vlachos, "Liquid-Phase Dehydration of Propylene Glycol Using Solid-Acid Catalysts", *Applied Catalysis A*, 449 (2012) 59-68.

252. A.L. Stottlemyer, T.G. Kelly, Q. Meng and J.G. Chen, “Reactions of Oxygen-Containing Molecules on Transition Metal Carbides: Surface Science Insight into Potential Applications in Catalysis and Electrocatalysis”, *Surface Science Reports* (*invited review*), 67 (2012) 201-232.
253. T.G. Kelly and J.G. Chen, “Metal Overlayer on Metal Carbide Substrate: Unique Bimetallic Properties for Catalysis and Electrocatalysis”, *Chemical Society Reviews*, 41 (2012) 8021-8034.
254. Q. Lu, Y. Chen, W. Li, J.G. Chen, J.Q. Xiao and F. Jiao, "Ordered mesoporous nickel cobaltite spinel with ultra-high supercapacitance", *Journal of Materials Chemistry A*, 1 (2013) 2331-2336.
255. K.W. McNamara, P. Ayyappan, R. Rajagopalan, J.G. Chen and H.C. Foley, "Localized Crystallization of Polyfurfuryl Alcohol Derived Carbon by Alkali Metals", *Carbon*, 56 (2013) 109-120.
256. Q. Lu, J.G. Chen and J.Q. Xiao, “Design Nanostructured Electrodes for High-performance Supercapacitors”, *Angewandte Chemie International Edition*, 52 (2013) 1882-1889.
257. M.D. Porosoff and J.G. Chen, "Trends in the catalytic reduction of CO_2 by hydrogen over supported monometallic and bimetallic catalysts", *Journal of Catalysis*, 301 (2013) 30-37.
258. T.G. Kelly, S.T. Hunt, D.V. Esposito and J.G. Chen, “Monolayer Palladium Supported on Molybdenum and Tungsten Carbide Substrates as Low-cost Hydrogen Evolution Reaction (HER) Electrocatalysts”, *International Journal of Hydrogen Energy*, 38 (2013) 5638-5644.
259. W. Sheng, M. Myint, J.G. Chen and Y. Yan, "Correlating Hydrogen Evolution Reaction Activity in Alkaline Electrolyte to Hydrogen Binding Energy on Monometallic Surfaces", *Energy & Environmental Science*, 6 (2013) 1509-1512.
260. H. Ren, W. Yu, M. Salciccioli, Y. Chen, Y. Huang, K. Xiong, D.G. Vlachos and J.G. Chen, “Selective Hydrodeoxygenation of Biomass-derived Oxygenates to Unsaturated Hydrocarbons using Molybdenum Carbide Catalysts”, *ChemSusChem*, 6 (2013) 798-801.
261. Y. Liu, T.G. Kelly, J.G. Chen and W.E. Mustain, “Metal Carbides as Alternative Electrocatalyst Supports”, *ACS Catalysis* (Invited Perspective) 3 (2013) 1184-1194.
262. T. Wang, G. Mpourmpakis, W.W. Lonergan, D.G. Vlachos and J.G. Chen, “Effect of Oxide Supports in Stabilizing Desirable Pt-Ni Bimetallic Structures for Hydrogenation and Reforming Reactions”, *Physical Chemistry Chemical Physics*, 2013, 15, 12156-12164.
263. S.A. Tupy, J.G. Chen and D.G. Vlachos, "Comparison of ethylene glycol steam reforming over Pt and NiPt catalysts on various supports", *Topics in Catalysis*, 56 (2013) 1644-1650.
264. T. Wang, W.W. Lonergan and J.G. Chen, “Selection of Oxide Supports to Anchor Desirable Bimetallic Structures for Ethanol Reforming and 1,3-Butadiene Hydrogenation”, *Chinese Journal of Catalysis*, 34 (2013) 2009-2017.
265. M.D. Porosoff, W. Yu and J.G. Chen, “Challenges and Opportunities in Correlating Bimetallic Model Surfaces and Supported Catalysts”, *Journal of Catalysis* (50^{th} Anniversary Special Issue), 308 (2013) 2-10.
266. H. Ren, Y. Chen, Y. Huang, W. Deng, D.G. Vlachos, and J.G. Chen, “Tungsten Carbides as Selective Deoxygenation Catalysts: Experimental and Computational Studies of Converting C3 Oxygenates to Propene”, *Green Chemistry*, 16 (2014) 761-769.

267. T.G. Kelly and J.G. Chen, "Controlling C-O, C-C and C-H Bond Scission for Deoxygenation, Reforming, and Dehydrogenation of Ethanol using Metal-modified Molybdenum Carbide Surfaces", *Green Chemistry*, 16 (2014) 777-784.
268. Q. Lu, J. Rosen, Y. Zhou, G.S. Hutchings, Y.C. Kimmel, J.G. Chen and F. Jiao, "A Highly Selective and Efficient Electrocatalyst for Carbon Dioxide Reduction", *Nature Communications*, 5 (2014) 3242.
269. Y.C. Kimmel, L. Yang; T.G. Kelly, S.A. Rykov and J.G. Chen, "Theoretical Prediction and Experimental Verification of Low Loading of Platinum on Titanium Carbide as Low Cost and Stable Electrocatalysts", *Journal of Catalysis*, 312 (2014) 216-220.
270. W. Yu, M. Salciccioli, K. Xiong, M.A. Barteau, D.G. Vlachos and J.G. Chen, "Theoretical and Experimental Studies of C-C versus C-O Bond Scission of Ethylene Glycol Reaction Pathways via Metal-Modified Molybdenum Carbides", *ACS Catalysis*, 4 (2014) 1409-1418.
271. Y.C. Kimmel, X. Xu, W. Yu, X. Yang and J.G. Chen, "Trends in Electrochemical Stability of Transition Metal Carbides and Their Potential Use as Supports for Low-Cost Electrocatalysts", *ACS Catalysis*, 4 (2014) 1558-1562.
272. R.V. Forest, E. Eser, B.E. McCandless, R.W. Birkmire and J.G. Chen "Understanding the role of oxygen in the segregation of sodium at the surface of molybdenum coated soda-lime glass", *AIChE Journal*, 60 (2014) 2365-2372.
273. W. Sheng, A.P. Bivens, M. Myint, Z. Zhuang, R.V. Forest, Q. Fang, J.G. Chen and Y. Yan, "Non-precious Metal Electrocatalyst with High Activity for Hydrogen Oxidation Reaction in Alkaline Electrolytes", *Energy & Environmental Science*, 7 (2014) 1719-1724.
274. T.G. Kelly, A.L. Stottlemyer, X. Yang and J.G. Chen, "Theoretical and experimental studies of ethanol decomposition and electrooxidation over Pt-modified tungsten carbide", *Journal of Electrochemical Society*, 161 (2014) E3165-3170.
275. A.E. Baber, X. Yang, H.Y. Kim, K. Mudiyanselage, M. Soldemo, J. Weissenrieder, S.D. Senanayake, A. Al-Mahboob, J. Sadowski, J. Evans, J.A. Rodriguez, P. Liu, F.M. Hoffmann, J.G. Chen and D. Stacchiola, "Stabilization of catalytically active Cu+ surface sites on titanium-copper mixed oxide films", *Angewandte Chemie International Edition*, 53 (2014) 5336-5340.
276. R. Hou. W. Yu, M.D. Porosoff, J.G. Chen and T. Wang, "Selective Hydrogenation of 1,3-Butadiene on Pd-Ni Bimetallic Catalyst: From Model Surfaces to Supported Catalysts", *Journal of Catalysis*, 316 (2014) 1-10.
277. M. Myint, Y. Yan and J.G. Chen, "Reaction Pathways of Propanal and 1-Propanol on Fe/Ni(111) and Cu/Ni(111) Bimetallic Surfaces", *Journal of Physical Chemistry C*, 118 (2014) 11340-11349.
278. T. Wang, M.D. Porosoff and J.G. Chen, "Effects of Oxide Supports on the Water-Gas Shift Reaction over Pt-Ni Bimetallic Catalysts: Activity and Methanation Inhibition", *Catalysis Today*, 233 (2014) 61-69.
279. M.D. Porosoff, X. Yang, J.A. Boscoboinik, and J.G. Chen, "Molybdenum carbide as alternative catalysts to precious metals for highly selective reduction of CO_2 to CO", *Angewandte Chemie International Edition*, 53 (2014) 6705-6709.
280. K. Xiong, W.-S. Lee, A. Bhan and J.G. Chen, "Molybdenum Carbide as a Highly Selective Deoxygenation Catalyst for Converting Furfural to 2-methylfuran", *ChemSusChem*, 7 (2014) 2146-2151.
281. W. Yu, K. Xiong, N. Ji, M.D. Porosoff and J.G. Chen, "Theoretical and Experimental Studies of the Adsorption Geometry and Reaction Pathways of Furfural over FeNi

Bimetallic Model Surfaces and Supported Catalysts", *Journal of Catalysis,* 317 (2014) 253-262.

282. T.G. Kelly, K.X. Lee and J.G. Chen, "Pt-modified Molybdenum Carbide for the Hydrogen Evolution Reaction: From Model Surfaces to Powder Electrocatalysts", *Journal of Power Sources,* 271 (2014) 76-81.
283. X. Yang, W. Xu, M. Li, B.E. Koel, and J.G Chen, "A New Class of Electrocatalysts of Supporting Pt on Engel-Brewer Alloy Substrates: A Demonstration for Oxidation of Ethylene Glycol", *Chemical Communications,* 85 (2014) 12981-12984.
284. K. Xiong, W. Yu and J.G. Chen, "Selective Deoxygenation of Aldehydes and Alcohols on Molybdenum Carbide (Mo_2C) Surfaces", *Applied Surface Science,* 323 (2014) 88-95.
285. E.G. Mahoney, W. Sheng, Y. Yan, and J.G. Chen, "Platinum-Modified Gold Electrocatalysts for the Hydrogen Oxidation Reaction in Alkaline Electrolytes", *ChemElectroChem,* 1 (2014) 2058-2063.
286. R. Hou. M.D. Porosoff, J.G. Chen and T. Wang, "Effect of oxide supports on Pd-Ni bimetallic catalysts for 1,3-butadiene hydrogenation", *Applied Catalysis A,* 490 (2015) 17-23.
287. I.J. Hsu, J.G. Chen, X. Jiang and B.G. Willis, "Atomic layer deposition synthesis and evaluation of core–shell Pt-WC electrocatalysts", *Journal of Vacuum Science and Technology A,* 33 (2015) 01A129.
288. M. Myint and J.G. Chen, "Understanding the Role of Metal-Modified Mo(110) Bimetallic Surfaces for C–O/C=O and C–C Bond Scission in C3 Oxygenates", *ACS Catalysis,* 5 (2015) 256-263.
289. W. Sheng, Z. Zhuang, M. Gao, J. Zheng, J.G. Chen and Y. Yan, "Correlating hydrogen oxidation/evolution reaction activity on platinum at different pH with measured hydrogen binding energy", *Nature Communications,* 6 (2015) 5848.
290. J. Zheng, D. Cullen, R. Forest, J. Wittkopf, Z. Zhuang, W. Sheng, J.G. Chen and Y. Yan, "Platinum-Ruthenium Nanotubes and Platinum-Ruthenium Coated Copper Nanowires as Efficient Catalysts for Electro-Oxidation of Methanol", *ACS Catalysis,* 5 (2015) 1468-1474.
291. R.V. Forest, E. Eser, B.E. McCandless, J.G. Chen and R.W. Birkmire, "Reversibility of (Ag,Cu)(In,Ga)Se_2 electrical properties with the addition and removal of Na: Role of grain boundaries", *Journal of Applied Physics,* 117 (2015) 115102.
292. R. Hou, K. Chang, J.G. Chen and T. Wang, "Replacing Precious Metals with Carbide Catalysts for Hydrogenation Reactions", *Topics in Catalysis,* 58 (2015) 240-246.
293. M.D. Porosoff, S. Kattel, W. Li, P. Liu and J.G. Chen, "Identifying trends and descriptors for selective CO_2 conversion to CO over transition metal carbides", *Chemical Communications,* 51 (2015) 6988-6991.
294. L. Yang, Y.C. Kimmel, Q. Lu and J.G. Chen, "Effect of pretreatment on the particle size and hydrogen evolution and oxygen reduction activities of low-loading platinum on titanium carbide powder electrocatalysts", *Journal of Power Sources,* 287 (2015) 196-202.
295. Q. Lu, G.S. Hutchings, W. Yu, Y. Zhou, R.V. Forest, R. Tao, J. Rosen, B.T. Yonemoto, Z. Cao, H. Zheng, J.Q. Xiao, F. Jiao and J.G. Chen, "Highly Porous Non-precious Bimetallic Electrocatalysts for Efficient Hydrogen Evolution", *Nature Communications,* 6 (2015) 6567.
296. T.G. Kelly and J.G. Chen, "Decomposition Pathways of C2 Oxygenates on Rh-modified Tungsten Carbide Surfaces", *Surface Science* (*Special Volume on Reactivity Concepts at Surfaces*), 640 (2015) 89-95.

297. W. Yu and J.G. Chen, "Reaction Pathways of Model Compounds of Biomass-Derived Oxygenates on Fe/Ni Bimetallic Surfaces", *Surface Science* (*Special Volume on Reactivity Concepts at Surfaces*), 640 (2015) 159-164.
298. Y. Zhou, Q. Lu, Z. Zhuang, G.S. Hutchings, S. Kattel, Y. Yan, J.G. Chen, J.Q. Xiao and F. Jiao, "Oxygen Reduction at Very Low Overpotential on Nanoporous Ag Catalysts", *Advanced Energy Materials*, 5 (2015) 1500149.
299. K. Xiong, W. Yu, D.V. Vlachos and J.G. Chen, "Reaction Pathways of Biomass-derived Oxygenates over Metals and Carbides: From Model Surfaces to Supported Catalysts", *ChemCatChem*, (*Invited Review*) 7 (2015) 1402-1421.
300. M.R. Stonor, T.E. Fergusonb, J.G. Chen and A.-H. Park, "Biomass Conversion to H_2 with Substantially Suppressed CO_2 Formation in the Presence of Group I & Group II Hydroxides and a Ni/ZrO_2 Catalyst", *Energy & Environmental Science*, 8 (2015) 1702-1706.
301. X. Yang, S. Kattel, S.D. Senanayake, J.A. Boscoboinik, X. Nie, J. Graciani, J.A. Rodriguez, P. Liu, D.J. Stacchiola and J.G. Chen, "Low pressure CO_2 hydrogenation to methanol over gold nanoparticles activated on a CeOx/TiO_2 interface", *Journal of the American Chemical Society*, 137 (2015) 10104-10107.
302. X. Yang, S. Kattel, X. Ke, K. Mudiyanselage, S.A. Rykov, S.D. Senanayake, J.A. Rodriguez, P. Liu, D.J. Stacchiola and J.G. Chen, "Direct Epoxidation of Propylene over Stabilized Cu^+ Surface Sites on Ti Modified Cu_2O", *Angewandte Chemie International Edition*, 54 (2015), 11946-11951. (*Frontispiece*).
303. J.A. Rodriguez, P. Liu, D.J. Stacchiola, S.D. Senanayake, M.G. White and J.G. Chen, "Hydrogenation of CO_2 to Methanol: Importance of Metal-Oxide and Metal-Carbide Interfaces in the Activation of CO_2", (*Invited Perspective*) *ACS Catalysis*, 5 (2015) 6696-6706.
304. M.D. Porosoff, M. Myint, S. Kattel, Z. Xie, E. Gomez, P. Liu and J.G. Chen, "Identifying different types of catalysts for CO_2 reduction by ethane through dry reforming and oxidative dehydrogenation", *Angewandte Chemie International Edition*, 54 (2015) 15501-15505.
305. E.G. Mahoney, W, Sheng, M. Cheng, K.X. Lee, Y. Yan and J.G. Chen, "Analyzing the electrooxidation of ethylene glycol and glucose over platinum-modified gold electrocatalysts in alkaline electrolyte using in-situ infrared spectroscopy", *Journal of Power Sources*, 305 (2016) 89-96.
306. J. Fu, X. Yang, C.A. Menning, J.G. Chen and B.E. Koel, "Composition, structure and stability of surfaces formed by Ni deposition on Pd(111)", *Surface Science*, (Special Issue Honoring Professor Gabor Somorjai) 646 (2016) 56-64.
307. K. Mudiyanselage, S. Luo, H.Y. Kim, X. Yang, A.E. Baber, F.M. Hoffmann, J.A. Rodriguez, J.G. Chen, P. Liu, and D.J. Stacchiola, "How to stabilize highly active Cu^+ cations in a mixed-oxide catalyst?", *Catalysis Today*, 263 (2016) 4-10.
308. M.D. Porosoff, B. Yan and J.G. Chen, "Catalytic reduction of CO_2 by H_2 for synthesis of CO, methanol and hydrocarbons: Challenges and opportunities", *Energy & Environmental Science*, 9 (2016) 62-73.
309. L. Wang, E.G. Mahoney, S. Zhao, B. Yang and J.G. Chen, "Low Loading of Platinum on Transition Metal Carbides for Hydrogen Oxidation and Evolution Reactions in Alkaline Electrolyte", *Chemical Communications*, 52 (2016) 3697-3700.
310. T. Bligaard, R.M. Bullock, C.T. Campbell, J.G. Chen*, B.C. Gates, R.J. Gorte, C.W. Jones, W.D. Jones, J.R. Kitchin, S.L. Scott*, "Towards Benchmarking in Catalysis Science: Best Practices, Opportunities, and Challenges", *ACS Catalysis*, 6 (2016) 2590-2602 (*Perspective, ACS Editors' Choice*).

311. B.M. Tackett, Y.C. Kimmel and J.G. Chen, "Metal-Modified Niobium Carbides as Low-Cost and Impurity-Resistant Electrocatalysts for Hydrogen Evolution in Acidic and Alkaline Electrolytes", *International Journal of Hydrogen Energy*, 41 (2016) 5948-5954.
312. Q. Lu, C-J. Chen, W. Luc, J.G. Chen, A. Bhan and F. Jiao, "Ordered mesoporous metal carbides with enhanced anisole hydrodeoxygenation selectivity", *ACS Catalysis*, 6 (2016) 3506-3514.
313. K. Xiong, W. Wan and J.G. Chen, "Reaction Pathways of Furfural, Furfuryl Alcohol and 2-methylfuran on Cu(111) and NiCu Bimetallic Surfaces", *Surface Science* (Special Issue Honoring Professor John Yates), 652 (2016) 91-97.
314. S. Kattel, B. Yan, J.G. Chen and P. Liu, "CO_2 Hydrogenation on Pt, Pt/SiO_2 and Pt/TiO_2: Importance of Synergy between Pt and Oxide Support", *Journal of Catalysis*, 343 (2016) 115-126.
315. M. Myint, B. Yan, J. Wan, S. Zhao and J.G. Chen, "Reforming and Oxidative Dehydrogenation of Ethane with CO_2 as a Soft Oxidant over Bimetallic Catalysts", *Journal of Catalysis*, 343 (2016) 168-177.
316. S. Kattel, W. Yu, X. Yang, B. Yan, Y. Huang, W. Wan, P. Liu and J.G. Chen, "CO_2 Hydrogenation over Oxide-Supported PtCo Catalysts: The Role of the Oxide Support in Determining the Product Selectivity", *Angewandte Chemie International Edition*, 55 (2016) 7968-7973.
317. J. Wang, W. Wang, Z. Wang, J.G. Chen and C.-J. Liu, "Porous MS_2/MO_2 (M=W, Mo) Nanorods as Efficient Hydrogen Evolution Reaction Catalysts", *ACS Catalysis*, 6 (2016) 6585-6590.
318. D.W. Fickel, K.D. Sabnis, L. Li, N. Kulkarni, L.R. Winter, B. Yan and J.G. Chen, "Chloromethane to Olefins over H-SAPO-34: Probing the Hydrocarbon Pool Mechanism", *Applied Catalysis A*, 527 (2016) 146-151.
319. G.R. Jenness, W. Wan, J.G. Chen and D.G. Vlachos, "Reaction Pathways and Intermediates in Selective Ring Opening of Biomass-Derived Heterocyclic Compounds by Iridium", *ACS Catalysis*, 6 (2016) 7002-7009.
320. S. Kattel, B. Yan, Y. Yang, J.G. Chen and P. Liu, "Optimizing Binding Energies of Key Intermediates for CO_2 Hydrogenation to Methanol over Oxide-Supported Copper", *Journal of the American Chemical Society*, 138 (2016) 12440-12450.
321. B. Yan, X. Yang, S. Yao, J. Wan, M. Myint, E. Gomez, Z. Xie, S. Kattel, W. Xu and J.G. Chen, "Dry Reforming of Ethane and Butane with CO_2 over PtNi/CeO_2 Bimetallic Catalysts", *ACS Catalysis*, 6 (2016) 7283-7292.
322. X. Li, W. Wan, S. Kattel, J.G. Chen and T. Wang, "Selective hydrogenation of biomass-derived 2(5H)-furanone over Pt-Ni and Pt-Co bimetallic catalysts: From model surfaces to supported catalysts", *Journal of Catalysis*, 344 (2016) 148-156.
323. Q. Zhang, B.M. Tackett, Q. Wu and J.G. Chen, "Trends in Hydrogen Evolution Activity of Metal-Modified Molybdenum Carbides in Alkaline and Acid Electrolytes", *ChemElectroChem*, 3 (2016) 1686-1693.
324. J.C. Matsubu, S. Zhang, L. DeRita, N.S. Marinkovic, J.G. Chen, G.W. Graham, X. Pan and P. Christopher, "Adsorbate-Mediated Strong Metal-Support Interactions in Oxide-Supported Rh Catalysts", *Nature Chemistry*, 9 (2017) 120-127.
325. K.A. Kuttiyiel, K. Sasaki, G-G. Park, M.B. Vukmirovic, L. Wu, Y. Zhu, J.G. Chen and R.R. Adzic, "Janus Structured Pt-FeNC Nanoparticles as Catalyst for the Oxygen Reduction Reaction", *Chemical Communications*, 53 (2017) 1660-1663.
326. L. Lin, W. Sheng, S. Yao, D. Ma and J.G. Chen, "Pt/Mo_2C/C-cp as a Highly Active and Stable Catalyst for Ethanol Electrooxidation", *Journal of Power Sources*, 345 (2017) 182-189.

327. Z. Xie, B. Yan, L. Zhang and J.G. Chen, "Comparison of methodologies of activation barrier measurements for reactions with deactivation", *Industrial & Engineering Chemistry Research*, 56 (2017) 1360-1364.
328. K. Chang, T. Wang and J.G. Chen, "Hydrogenation of CO_2 to methanol over CuCeTiOx catalysts", *Applied Catalysis B: Environmental*, 206 (2017) 704-711.
329. M. Dunwell, Q. Lu, J.M. Heyes, J. Rosen, J.G. Chen, Y. Yan, F. Jiao, and B. Xu, "The Central Role of Bicarbonate in the Electrochemical Reduction of CO_2 on Gold", *Journal of the American Chemical Society*, 139 (2017) 3774-3783.
330. S. Kattel, P.J. Ramírez, J.G. Chen, J.A. Rodriguez and P. Liu, "Active Sites for CO_2 Hydrogenation to Methanol on Cu/ZnO Catalysts", *Science*, 355 (2017) 1296-1299.
331. W. Wan, B.M. Tackett and J.G. Chen, "Reactions of water and C1 molecules on carbide and metal-modified carbide surfaces", *Chemical Society Reviews*, 46 (2017) 1807-1823 (back cover).
332. K. Chang, J.G. Chen, Q. Lu and M-J. Cheng, "Quantum Mechanical Study of N-Heterocyclic Carbene Adsorption on Au Surfaces", *Journal of Physical Chemistry A*, 121 (2017) 2674-2682.
333. W. Wan, G.R. Jenness, K. Xiong, D.G. Vlachos and J.G. Chen, "Ring-opening reaction of furfural and tetrahydrofurfuryl alcohol on hydrogen pre-dosed Ir(111) and Co/Ir(111) surfaces", *ChemCatChem*, 9 (2017) 1701-1707.
334. W. Sheng, S. Kattel, S. Yao, B. Yan, C.J. Hawxhurst, Q. Wu and J.G. Chen, "Electrochemical Reduction of CO_2 to Synthesis Gas with Controlled CO/H_2 Ratios", *Energy & Environmental Science*, 10 (2017) 1180-1185.
335. H.-X. Cao, J. Zhang, C.-L. Guo, J.G. Chen and X.-K. Ren, "Highly dispersed Ni nanoparticles on 3D-mesoporous KIT-6 for CO methanation: Effect of promoter species on catalytic performance", *Chinese Journal of Catalysis*, 38 (2017) 1127-1137.
336. H.-X. Cao, J. Zhang, C.-L. Guo, J.G. Chen and X.-K. Ren, "Modifying surface properties of KIT-6 zeolite with Ni and V for enhancing catalytic CO methanation", *Applied Surface Science*, 426 (2017) 40-49.
337. Z. Jiang, W. Wan, Z. Lin, J. Xie and J.G. Chen, "Understanding the Role of M/Pt(111) (M = Fe, Co, Ni, Cu) Bimetallic Surfaces for Selective Hydrodeoxygenation of Furfural", *ACS Catalysis*, 7 (2017) 5758-5765.
338. S. Kattel, P. Liu and J.G. Chen, "Tuning Selectivity of CO_2 Hydrogenation Reactions at the Metal/Oxide Interface", *Journal of the American Chemical Society*, 139 (2017) 9739-9754.
339. S. Kattel, P.J. Ramírez, J.G. Chen, J.A. Rodriguez and P. Liu, "Response to Comment on Active Sites for CO_2 Hydrogenation to Methanol on Cu/ZnO Catalysts", *Science*, 357 (2017) eaan8210, 1-2.
340. M.R. Stonor, J.G. Chen and A.-H. Park, "Bio-Energy with Carbon Capture and Storage (BECCS) Potential: Production of High Purity H_2 from Cellulose via Alkaline Thermal Treatment with Gas Phase Reforming of Hydrocarbons over Various Metal Catalysts", *International Journal of Hydrogen Energy*, 42 (2017) 25903-25913.
341. B.M. Tackett, W. Sheng and J.G. Chen, "Opportunities and Challenges in Utilizing Metal-modified Transition Metal Carbides as Low-cost Electrocatalysts", *Joule*, 1 (2017) 253-263.
342. M.R. Stonor, N. Ouassil, J.G. Chen and A.-H. Park, "Investigation of the role of $Ca(OH)_2$ in the catalytic alkaline thermal treatment of cellulose to produce H_2 with integrated carbon capture", *Journal of Energy Chemistry*, 26 (2017) 984-1000.

343. K. Chang, J.G. Chen, Q. Lu and M-J. Cheng, "Grand Canonical Quantum Mechanical Study of the Effect of the Electrode Potential on N-Heterocyclic Carbene Adsorption on Au Surfaces", *Journal of Physical Chemistry C*, 121 (2017) 24618-24625.
344. J.G. Chen, "Tuning catalytic properties using an atomically dispersed metal overlayer on transition metal carbide substrates", *National Science Review*, 4 (2017) 788-789.
345. L.R. Winter, E. Gomez, B. Yan, S. Yao and J.G. Chen, "Tuning Ni-catalyzed CO_2 hydrogenation selectivity via Ni-ceria support interactions and Ni-Fe bimetallic formation", *Applied Catalysis B: Environmental*, 224 (2018) 442-450.
346. B. Zhao, B. Yan, S. Yao, Z. Xie, Q. Wu, R. Ran, D. Weng, C. Zhang and J.G. Chen, "$LaFe_{0.9}Ni_{0.1}O_3$ perovskite catalyst with enhanced activity and coke-resistance for dry reforming of ethane", *Journal of Catalysis*, 358 (2018) 168-178.
347. Z. Zhang, Q. Yang, H. Chen, K. Chen, X. Lu, P. Ouyang, J. Fu and J.G. Chen, "In-situ Hydrogenation and Decarboxylation of Oleic Acid into Heptadecane over a Cu-Ni Alloy Catalyst using Methanol as Hydrogen Carrier", *Green Chemistry*, 20 (2018) 197-205.
348. B.M. Tackett, W. Sheng, S. Kattel, S. Yao, B. Yan, K.A. Kuttiyiel, Q. Wu and J.G. Chen, "Reducing Iridium Loading in Oxygen Evolution Reaction Electrocatalysts Using Core-shell Particles with Nitride Cores", *ACS Catalysis*, 8 (2018) 2615-2621.
349. Q. Wu, B. Yan, J. Cen, J. Timoshenko, D. Zakharov, X. Chen, H. Xin, S. Yao, J.B. Parise, A.I. Frenkel, E.A. Stach, J.G. Chen and A. Orlov, "Growth of Nanoparticles with Desired Catalytic Functions by Controlled Doping-Segregation of Metal in Oxide", *Chemistry of Materials*, 30 (2018) 1585-1592.
350. X. Li, B. Yan, S. Yao, S. Kattel, J.G. Chen and T. Wang, "Oxidative Dehydrogenation and Dry Reforming of n-Butane with CO_2 over NiFe Bimetallic Catalysts", *Applied Catalysis B: Environmental*, 231 (2018) 442-450.
351. D. Liu, Y. Li, M. Kottwitz, B. Yan, S. Yao, A. Gamalski, D. Grolimund, O.V. Safonova, M. Nachtegaal, J.G. Chen, E.A. Stach, R.G. Nuzzo, and A.I. Frenkel, "Identifying Dynamic Structural Changes of Active Sites in Pt-Ni Bimetallic Catalysts Using Multimodal Approaches", *ACS Catalysis*, 8 (2018) 4120-4131.
352. L. Wang, S. Zhu, N. Marinkovic, S. Kattel, M. Shao, B. Yang and J.G. Chen, "Insight into the Synergistic Effect between Nickel and Tungsten Carbide for Catalyzing Urea Electrooxidation in Alkaline Electrolyte", *Applied Catalysis B: Environmental*, 232 (2018) 365-370.
353. E. Gomez, S. Kattel, B. Yan, S. Yao, P. Liu and J.G. Chen, "Combining CO_2 Reduction with Propane Oxidative Dehydrogenation over Bimetallic Catalysts", *Nature Communications*, 9 (2018) 1398.
354. Z. Lin, W. Wan, S. Yao and J.G. Chen, "Cobalt-modified molybdenum carbide as a selective catalyst for hydrodeoxygenation of furfural", *Applied Catalysis B: Environmental*, 233 (2018) 160-166.
355. W. Wan, Z. Jiang and J.G. Chen, "A comparative study of hydrodeoxygenation of furfural over Fe/Pt(111) and Fe/Mo_2C surfaces", *Topics in Catalysis*, 61 (2018) 439-445.
356. Z. Jiang, Q. Zhang, Z. Liang and J.G. Chen, "Pt-modified TaC as an Efficient Electrocatalyst for Ethanol Oxidation in Acid and Alkaline Electrolytes", *Applied Catalysis B: Environmental*, 234 (2018) 329-336.
357. S. Yao, B. Yan, Binhang, Z. Jiang, Z. Liu, Q. Wu, J.H. Lee, and J.G. Chen, "Combining CO_2 Reduction with Ethane Oxidative Dehydrogenation by Oxygen-modification of Molybdenum Carbide", *ACS Catalysis*, 8 (2018) 5374-5381.
358. Z. Xie, B. Yan, S. Kattel, J.H. Lee, S. Yao, Q. Wu, N. Rui, E. Gomez, Z. Liu, W. Xu, L. Zhang and J.G. Chen, "Dry Reforming of Methane over CeO_2-supported Pt-Co Catalysts with Enhanced Activity", *Applied Catalysis B: Environmental*, 236 (2018) 280-293.

359. J.G. Chen, R.M. Crooks, L.C. Seefeldt, K.L. Bren, R.M. Bullock, M.Y. Darensbourg, P.L. Holland, B. Hoffman, M.J. Janik, A.K. Jones, M.G. Kanatzidis, P. King, K.M. Lancaster, S.V. Lymar, P. Pfromm, W.F. Schneider, R.R. Schrock, "Beyond Fossil Fuel-Driven Nitrogen Transformations", *Science*, 360 (2018) 873.
360. Z. Lin, R. Chen, Z. Qu and J.G. Chen, "Hydrodeoxygenation of biomass-derived oxygenates over metal carbides: From model surfaces to powder catalysts", (*Critical Review*), *Green Chemistry*, 20 (2018) 2679-2696.
361. J. Wang, S. Kattel, Z. Wang, J.G. Chen and C.J. Liu "L-Phenylalanine Templated Platinum Catalyst with Enhanced Performance for Oxygen Reduction Reaction", *ACS Applied Materials & Interfaces*, 10 (2018) 21321-21327.
362. B. Zhao, B. Yan, Z. Jiang, S. Yao, Z. Liu, Q. Wu, R. Ran, S.D. Senanayake, D. Weng and J.G. Chen "High Selectivity of CO_2 Hydrogenation to CO by Controlling the Valence State of Nickel using Perovskite", *Chemical Communications*, 54 (2018) 7354-7357.
363. B. Yan, Q. Wu, J. Cen, J. Timoshenko, A.I. Frenkel, D. Su, X. Chen, J.B. Parise, E.A. Stach, A. Orlov and J.G. Chen, "Highly Active Subnanometer Rh Clusters Derived from Rh-doped $SrTiO_3$ for CO_2 Reduction", *Applied Catalysis B: Environmental*, 237 (2018) 1003-1011.
364. S. Kattel, J.G. Chen and P. Liu, "Mechanistic Study of CO_2 Reduction by Ethane on a Bimetallic PtNi(111) Model Surface", *Catalysis Science & Technology*, 8 (2018) 3748-3758 (back cover).
365. B. Yan, S. Yao, S. Kattel, Q. Wu, Z. Xie, E. Gomez, P. Liu, D. Su and J.G. Chen, "Active sites for tandem reactions of CO_2 reduction and ethane dehydrogenation", *Proceedings of the National Academy of Sciences of United States*, 115 (2018) 8278-8283.
366. K.A. Kuttiyiel, S. Kattel, S. Cheng, J.H. Lee, L. Wu, Y. Zhu, G.-G. Park, P. Liu, K. Sasaki, J.G. Chen and R.R. Adzic, "Au-doped Stable L10 Structured Platinum Cobalt Ordered Intermetallic Nanoparticle Catalysts for Enhanced Electrocatalysis", *ACS Applied Energy Materials*, 1 (2018) 3771-3777.
367. Q. Zhang, Z.J. Mellinger, Z. Jiang, X. Chen, B. Wang, B. Tian, Z. Liang and J.G. Chen, "Palladium-modified tungsten carbide for ethanol electrooxidation: From surface science studies to electrochemical evaluation", *Journal of the Electrochemical Society*, 165 (2018) J3031-3038.
368. W. Luc, Z. Jiang, J.G. Chen and F. Jiao, "The Role of Surface Oxophilicity in Copper-catalyzed Water Dissociation", *ACS Catalysis*, 8 (2018) 9327-9333.
369. J.H. Lee, S. Kattel, Z. Xie, B.M. Tackett, J. Wang, C.-J. Liu, and J.G. Chen, "Understanding the Role of Functional Groups in Polymeric Binder for Electrochemical Carbon Dioxide Reduction on Gold Nanoparticles", *Advanced Functional Materials*, 28 (2018) 1804762.
370. J. Zhou, C. Zhang, T. Niu, R. Huang, S. Li, J. Zhang and J.G. Chen, "Controlled Synthesis of Fe_3O_4 Nanospheres Coated with Nitrogen-Doped Carbon for High Performance Supercapacitors", *ACS Applied Energy Materials*, 1 (2018) 4599-4605.
371. J.G. Chen, "Enhancing catalytic selectivity and stability for CO_2 hydrogenation to methanol using a solid-solution catalyst", *National Science Review*, 5 (2018) 607-608.
372. D. Gao, I.T. McCrum, S. Deo, Y.-W. Choi, F. Scholten, W. Wan, J.G. Chen, M.J. Janik and B. Roldan Cuenya, "Activity and Selectivity Control in CO_2 Electroreduction to Multicarbon Products over CuOx Catalysts via Electrolyte Design", *ACS Catalysis*, 8 (2018) 10012-10020.
373. X. Yang, J. Nash, J. Anibal, M. Dunwell, S. Kattel, E. Stavitski, K. Attenkofer, J.G. Chen, Y. Yan, and B. Xu, "Mechanistic Insights into Electrochemical Nitrogen

Reduction Reaction on Vanadium Nitride Nanoparticles", *Journal of the American Chemical Society*, 140 (2018) 13387-13391.

374. W. Zhu, B.M. Tackett, J.G. Chen and F. Jiao, "Bimetallic Electrocatalysts for CO_2 Reduction", (*invited review*) *Topics in Current Chemistry*, 376 (2018) 41.
375. W. Wan, S.C. Ammal, Z. Lin, K.-E. You, A. Heyden and J.G. Chen, "Controlling reaction pathways of selective C-O bond cleavage of glycerol", *Nature Communications*, 9 (2018) 4612.
376. K. Goulas, J.D. Lee, J. Lym, W. Zheng, S. Yao, D.S. Oh, C. Wang, R.J. Gorte, J.G. Chen, C.B. Murray and D.G. Vlachos, "Spectroscopic characterization of a highly selective $NiCu_3$/C hydrodeoxygenation catalyst", *Catalysis Science & Technology*, 8 (2018) 6100-6108.
377. X. Li, W. Wan, J.G. Chen and T. Wang, "Selective hydrogenation of biomass-derived 2(5H)-furanone to γ-butyrolactone over Ni-based bimetallic catalysts", *ACS Sustainable Chemistry & Engineering*, 6 (2018) 16039-16046.
378. L. Wang, Z. Liu, S. Zhu, M. Shao, B. Yang and J.G. Chen, "Tungsten Carbide and Cobalt Modified Nickel Nanoparticles Supported on MWCNTs as Highly Efficient Electrocatalysts for Urea Oxidation in Alkaline Electrolyte", *ACS Applied Materials & Interfaces*, 10 (2018) 41338-41343.
379. J.G. Chen, "Electrochemical CO2 Reduction via Low-Valent Nickel Single-Atom Catalyst", *Joule*, 2 (2018) 587-589.
380. Y. Cheng, S. Zhao, H. Li, S. He, J.-P. Veder, B. Johannessen, J. Xiao, S. Lu, M.F. Chisholm, S.-Z. Yang, C. Liu, J.G. Chen and S.P. Jiang "Unsaturated Edge-anchored Ni Single Atoms on Porous Microwave Exfoliated Graphene Oxide for Electrochemical CO_2 Reduction", *Applied Catalysis B: Environmental*, 243 (2019) 294-303.
381. L.R. Winter, R. Chen, X. Chen, K. Chang, Z. Liu, S.D. Senanayake and J.G. Chen, "Elucidating the roles of metallic Ni and oxygen vacancies in CO_2 hydrogenation over Ni/CeO_2 using isotope exchange and in situ measurements", *Applied Catalysis B: Environmental*, 245 (2019) 360-366.
382. Z. Xie, B. Yan, J.H. Lee, Q. Wu, X. Li, B. Zhao, D. Su, L. Zhang and J.G. Chen, "Effects of oxide supports on the CO_2 reforming of ethane over Pt-Ni bimetallic catalysts", *Applied Catalysis B: Environmental*, 245 (2019) 376-388.
383. W. Zhu, S. Kattel, F. Jiao and J.G. Chen, "Shape-Controlled CO_2 Electrochemical Reduction on Nano-sized Pd Hydride Cubes and Octahedra", *Advanced Energy Materials*, 9 (2019) 1802840.
384. Q. Zhang, Z. Jiang, B.M. Tackett, S.R. Denny, B. Tian, X. Chen, B. Wang and J.G. Chen, "Trends and descriptors of metal-modified transition metal carbides for hydrogen evolution in alkaline electrolyte", *ACS Catalysis*, 9 (2019) 2415-2422.
385. Y. Wang, S. Kattel, W. Gao, K. Li, P. Liu, J.G. Chen and H. Wang, "Exploring the ternary interactions in Cu-ZnO-ZrO_2 catalysts for efficient CO_2 hydrogenation to methanol", *Nature Communications*, 10 (2019) 1166.
386. J. Wang, K. Chang, Z. Sun, J.H. Lee, B.M. Tackett, C. Zhang, J.G. Chen and C.-J. Liu, "A Combined experimental and theoretical study of the accelerated hydrogen evolution kinetics over wide pH range on porous transition metal doped tungsten phosphide electrocatalysts", *Applied Catalysis B: Environmental*, 251 (2019) 162-167.
387. J. Wang, S. Kattel, C.J. Hawxhurst, J.H. Lee, B.M. Tackett, K. Chang, N. Rui, C.-J. Liu and J.G. Chen, "Enhancing Activity and Reducing Cost for Electrochemical Reduction of CO_2 by Supporting Palladium on Metal Carbides", *Angewandte Chemie International Edition*, 58 (2019) 6271-6275.

388. J. Li, K. Chang, H. Zhang, M. He, W. Goddard, J.G. Chen, M.-J. Cheng and Q. Lu, "Effectively increased efficiency for electroreduction of carbon monoxide using supported polycrystalline copper powder electrocatalysts", *ACS Catalysis*, 9 (2019) 4709-4718.
389. B. Yan, B. Zhao, S. Kattel, Q. Wu, S. Yao, D. Su and J.G. Chen, "Tuning CO_2 hydrogenation selectivity via metal-oxide interfacial sites", *Journal of Catalysis*, 374 (2019) 60-71.
390. Z. Lin, W. Wan and J.G. Chen, "1,2-propanediol as a surrogate molecule of glycerol for mechanistic studies of selective hydrodeoxygenation reactions over Mo_2C and Cu/Mo_2C surfaces", *ACS Sustainable Chemistry & Engineering*, 7 (2019) 8077-8082.
391. K. Chang, T. wang and J.G. Chen, "Methanol synthesis from CO_2 hydrogenation over CuZnCeTi mixed oxide catalysts", *Industrial & Engineering Chemistry Research*, 58 (2019) 7922-7928.
392. B.M. Tackett, E. Gomez and J.G. Chen, "Net reduction of CO_2 via its thermocatalytic and electrocatalytic transformation reactions in standard and hybrid processes", *Nature Catalysis*, 2 (2019) 381-386.
393. H.B. Tao, Y. Xu, X. Huang, J. Chen, J. Zhang, J.G. Chen and B. Liu, "A General Method to Probe Oxygen Evolution Intermediates at Operating Conditions", *Joule*, 3 (2019) 1498-1509.
394. W. Luc, B.H. Ko, S. Kattel, S. Li, D. Su, J.G. Chen, and F. Jiao, "SO_2-induced Selectivity Change in CO_2 Electroreduction", *Journal of the American Chemical Society*, 141 (2019) 9902-9909.
395. E. Gomez, Z. Xie and J.G. Chen, "Identifying promising bimetallic catalysts for CO_2-assisted oxidative dehydrogenation and dry reforming of propane", *AIChE Journal*, 65 (2019) e16670.
396. Y. Wang, M. Shia, D. Bao, F. Meng, Q. Zhang, Y. Zhou, K. Liu, Y. Zhang, J. Wang, Z. Chen, D. Liu, Z. Jiang, M. Luo, L. Gu, Q. Zhang, X. Cao, Y. Yao, M. Shao, Y. Zhang, X. Zhang, J.G. Chen, J. Yan and Q. Jiang, "Generating Defect-Rich Bismuth for Enhancing Rate of Nitrogen Electroreduction to Ammonia", *Angewandte Chemie International Edition*, 58 (2019) 9464-9469.
397. L. Lin, S Yao, R. Ning, L. Han, F. Zhang, C. Gerlak, Z. Liu, J. Cen, l. Song, S. Senanayake, J.G. Chen and J.A. Rodriguez, "Conversion of CO_2 on a Highly Active and Stable $Cu/FeOx/CeO_2$ Catalyst: Tuning Catalytic Performance by Oxide-Oxide Interactions", *Catalysis Science & Technology*, 9 (2019) 3735-3742.
398. Q. Chang, S. Kattel, X. Li, Z. Liang, B.M. Tackett, S.R. Denny, P. Zhang, D. Su, J.G. Chen and Z. Chen, "Enhancing C-C Bond Scission for Efficient Ethanol Oxidation using PtIr Nanocube Electrocatalysts", *ACS Catalysis*, 9 (2019) 7618-7625.
399. H. Zhang, X. Chang, J.G. Chen, W.A Goddard, B. Xu, M.-J. Cheng and Q. Lu, "Computational and experimental demonstrations of one-pot tandem catalysis for electrochemical carbon dioxide reduction", *Nature Communications*, 10 (2019) 3340.
400. K. Li and J.G. Chen, "CO_2 hydrogenation to methanol over ZrO_2-containing catalysts: Insights into ZrO_2 induced synergy", *ACS Catalysis*, 9 (2019) 7840-7861.
401. K. Chang, H. Zhang, J.G. Chen, Q. Lu, Qi and M.-J. Cheng, "Constant Electrode Potential Quantum Mechanical Study of CO_2 Electrochemical Reduction Catalyzed by N-Doped Graphene", *ACS Catalysis*, 9 (2019) 8197-8207.
402. J.H. Lee, S. Kattel, Z. Jiang, Z. Xie, S. Yao, B.M. Tackett, W. Xu, N.S. Marinkovic and J.G. Chen "Tuning the Activity and Selectivity of Electroreduction of CO_2 to Synthesis Gas using Bimetallic Catalysts", *Nature Communications*, 10 (2019) 3724.

403. H.B. Tao, J. Zhang, J. Chen, L. Zhang, Y. Xu, J.G. Chen, and B. Liu, "Revealing Energetics of Surface Oxygen Redox from Kinetic Fingerprint in Oxygen Electrocatalysis", *Journal of the American Chemical Society*, 141 (2019) 13803-13811.
404. S. Yao, L. Lin, W. Liao, N. Rui, N. Li, Z. Liu, J. Cen, F. Zhang, X. Li, L. Song, L. Betancourt. D. Su, S. Senanayake, P. Liu, D. Ma, J.G. Chen and J.A. Rodriguez, "Exploring Metal-Support Interactions to Immobilize Sub-nm Co Clusters on γ-Mo_2N: A Highly Selective and Stable Catalyst for CO_2 Activation", *ACS Catalysis*, 9 (2019) 9087-9097.
405. X. Yang, S. Kattel, J. Nash, X Chang, J.H. Lee, Y. Yan, J.G. Chen and B. Xu, "Quantification of Active Sites and Elucidation of Reaction Mechanism of Electrochemical Nitrogen Reduction Reaction on Vanadium Nitride", *Angewandte Chemie International Edition*, 58 (2019) 13768-13772. (*Journal Cover*)
406. J. Nash, X. Yang, J. Anibal, S. Yao, K. Attenkofer, J.G. Chen, Y. Yan, and B. Xu, "Elucidation of the Active Phase and Deactivation Mechanisms of Chromium Nitride in the Electrochemical Nitrogen Reduction Reaction", *Journal of Physical Chemistry C*, 123 (2019) 23967-23975.
407. E. Gomez, B. Yan, S. Kattel and J.G. Chen, "Carbon dioxide reduction in tandem with light alkane dehydrogenation", *Nature Reviews Chemistry*, 3 (2019) 638-649.
408. E. Gomez, X. Ni, J.H. Lee, Z. Xie and J.G. Chen, "Tandem reactions of CO_2 reduction and ethane aromatization", *Journal of the American Chemical Society*, 141 (2019) 17771-17782.
409. K. Xiong and J.G. Chen, "Correlating Furfural Reaction Pathways with Interactions between Furfural and Monometallic Surfaces", *Catalysis Today*, 339 (2020) 289-295.
410. Y. Liu, H. You, Y.C. Kimmel, D.V. Esposito, J.G. Chen and T.P. Moffat, "Self-terminating electrodeposition of Pt on WC electrocatalysts", *Applied Surface Science*, 504 (2020) 144472.
411. J.H. Lee, B.M. Tackett, Z. Xie, S. Hwang, and J.G. Chen, "Isotopic Effect on Electrochemical CO_2 Reduction Activity and Selectivity in H_2O- and D_2O-based Electrolytes over Palladium", *Chemical Communications*, 56 (2020) 106-108.
412. W. Wan, Z. Lin and J.G. Chen, "Vibrational spectroscopic characterization of glycerol reaction pathways over metal-modified molybdenum carbide surfaces", *ChemCatChem*, 12 (2020) 281-286.
413. B. Yan, S. Yao and J.G. Chen, "Effect of oxide support on catalytic performance of FeNi-based catalysts for CO_2-assisted oxidative dehydrogenation of ethane", *ChemCatChem*, 12 (2020) 494-503.
414. Q. He, D. Liu, J.H. Lee, Y. Liu, Z. Xie, S. Hwang, S. Kattel, L. Song, and J.G. Chen, "Electrochemical Conversion of CO_2 to Syngas with Controllable CO/H_2 Ratios over Co and Ni Single-Atom Catalysts", *Angewandte Chemie International Edition*, 59 (2020) 3033-3037 (*VIP paper, Inside Cover*).
415. Y. Wang, Y. Zheng, K. Li, W. Gao, W. Na, J.G. Chen, H. Wang, "Strong evidence of the role of H_2O for enhancing methanol selectivity from CO_2 hydrogenation over Cu-ZnO-ZrO_2", *Chem*, 6 (2020) 419-430.
416. S. Liu, L.R. Winter and J.G. Chen, "Review of Plasma-Assisted Catalysis for Selective Generation of Oxygenates from CO_2 and CH_4", *ACS Catalysis*, 10 (2020) 2855-2871.
417. Q. He, J.H. Lee, D. Liu, Y. Liu, Z. Lin, Z. Xie, S. Hwang, S. Kattel, L. Song, and J.G. Chen, "Accelerating CO_2 Electroreduction to CO over Pd Single-Atom Catalyst", *Advanced Functional Materials*, 30 (2020) 2000407.
418. H. Chen, S. Yao, W. Lin, Z. Zhang, X. Hu, X. Liu, B. Yan, K. Chen, Y. Qin, Y. Zhu, X. Lu, P. Ouyang, J. Fu and J.G. Chen, "Highly Efficient Conversion of Oleic Acid to

Heptadecane without External Hydrogen Source Over Atomic Layer Deposited Bimetallic NiPt Catalysts", *Chemical Engineering Journal,* 390 (2020) 124603.

419. X. Niu, X. Nie, C. Yang and J.G. Chen, "CO_2-assisted propane aromatization over phosphorous-modified Ga/ZSM-5 catalysts", *Catalysis Science & Technology*, 10 (2020) 1881-1888.
420. X. Nie, X. Ren, C. Tu, C. Song, X. Guo and J.G. Chen "Computational and Experimental Identification of Strong Synergy of Fe/ZnO Catalyst in Promoting Acetic Acid Synthesis from CH_4 and CO_2", *Chemical Communications*, 56 (2020) 3983-3986.
421. Z. Xie, Y. Xu, M. Xie, X. Chen, J.H. Lee, E. Stavitski, S. Kattel and J.G. Chen, "Reactions of CO_2 and Ethane Enable CO Bond Insertion for Production of C3 Oxygenates", *Nature Communications*, 11 (2020) 1887.
422. Q. Chang, P. Zhang, A.H.B. Mostaghimi, X. Zhao, S.R. Denny, J.H. Lee, H. Gao, Y. Zhang, H. Xin, S. Siahrostami, J.G. Chen and Z. Chen, "Promoting H_2O_2 Production via 2-Electron Oxygen Reduction by Coordinating Partially Oxidized Pd with Defect Carbon", *Nature Communications*, 11 (2020) 2178.
423. K.-E. You, S.C. Ammal, Z. Lin, W. Wan, J.G. Chen and A. Heyden, "Understanding the Effect of Mo_2C Support on the Activity of Cu for the Hydrodeoxygenation of Glycerol", *Journal of Catalysis*, 388 (2020) 141-153.
424. K. Zhao, X. Nie, H. Wang, S. Chen, X. Quan, H. Yu, W. Choi, G. Zng, B. Kim, J.G. Chen, "Selective electrochemical reduction of CO_2 to acetone by single Cu atoms anchored on N-doped porous carbon", *Nature Communications*, 11 (2020) 2455.
425. S. Tan, B.M. Tackett, Q. He, J.H. Lee, J.G. Chen and S.S. Wong "Synthesis and electrocatalytic applications of flower-like motifs and associated composites of nitrogen-enriched tungsten nitride (W_2N_3)", *Nano Research*, 13 (2020) 1434-1443.
426. Y. Liu, D. Tian, A.N. Biswas, Z. Xie, S. Hwang, J.H. Lee, H. Meng and J.G. Chen, "Transition Metal Nitrides as Promising Catalyst Supports for Tuning CO/H_2 Syngas Production from Electrochemical CO_2 Reduction", *Angewandte Chemie International Edition*, 59 (2020) 11345-11348.
427. C. Li, M. He, H. Zhang, Xi. Chang, J.G. Chen, W.A. Goddard, III, M.-J. Cheng, B. Xu and Q. Lu, "Oxygen induced promotion of electrochemical reduction of CO_2 via co-electrolysis", *Nature Communications*, 11 (2020) 3844.
428. N. Artrith, Z. Lin and J.G. Chen, "Predicting the Activity and Selectivity of Bimetallic Metal Catalysts for Ethanol Reforming using Machine Learning", *ACS Catalysis*, 10 (2020) 9438-9444.
429. S.R. Denny, B.M. Tackett, D. Tian, K. Sasaki and J.G. Chen, "Exploring Electrocatalytic Stability and Activity of Unmodified and Platinum-Modified Tungsten and Niobium Nitrides", *International Journal of Hydrogen Energy*, 43 (2020) 22883-22892.
430. R. Chen, W. Xu, S.D. Senanayake, J.A. Rodriguez, J.G. Chen and T. Chen, "Template-free fabrication of fractal porous Y_2O_3 monolithic foam and its functional modification by Ni-doping", *Science China Materials*, 9 (2020) 1842-1847.
431. B.M. Tackett, J.H. Lee and J.G. Chen, "Electrochemical Conversion of CO_2 to Syngas with Palladium-Based Electrocatalysts", *Accounts of Chemical Research*, 53 (2020) 1535-1544.
432. R.M. Bullock, J.G. Chen, L. Gagliardi, P.J. Chirik, O.K. Farha, C.H. Hendon, C.W. Jones, J.A. Keith, J. Klosin, S. D. Minteer, R.H. Morris, A.T. Radosevich, T.B. Rauchfuss, N.A. Strotman, A. Vojvodic, T.R. Ward, J.Y. Yang, and Y. Surendranath, "Using nature's blueprint to expand catalysis with Earth-abundant metals", *Science*, 369 (2020) 786.

433. X. Jiang, X. Nie, X. Guo, C. Song and J.G. Chen, "Recent Advances in Carbon Dioxide Hydrogenation to Methanol via Heterogeneous Catalysis", *Chemical Reviews*, 120 (2020) 7984-8034.
434. Z. Xie, D. Tian, M. Xie, S. Yang, Y. Xu, N. Rui, J.H. Lee, S.D. Senanayake, K. Li, H. Wang, S. Kattel and J.G. Chen, "Interfacial Active Sites for CO_2-Assisted Selective Cleavage of C-C/C-H Bonds in Ethane", *Chem*, 6 (2020) 2703-2716.
435. Q. Chang, J. Kim, J.H. Lee, S. Kattel, J.G. Chen, S.-I. Choi, Z. Chen, "Boosting Activity and Selectivity of CO_2 Electroreduction by Pre-hydridizing Pd Nanocubes", *Small*, 16 (2020) 2005305.
436. L.R. Winter, B. Ashford, J. Hong, A.B. Murphy and J.G. Chen, "Identifying Surface Reaction Intermediates in Plasma Catalytic Ammonia Synthesis", *ACS Catalysis*, 10 (2020) 14763−14774.
437. Y. Wang, Y. Nian, A.N. Biswas, W. Li, Y. Han and J.G. Chen, "Challenges and Opportunities in Utilizing MXenes of Carbides and Nitrides as Electrocatalysts", *Advanced Energy Materials*, 11 (2021) 2002967.
438. J.H. Lee, S. Kattel, W. Yan, B.M. Tackett, Z. Xie, S. Hwang, S.R. Denny, W. Xu and J.G. Chen, "Prussian Blue Analogues as Platform Materials for Understanding and Developing Oxygen Evolution Reaction Electrocatalysts", *Journal of Catalysis*, 393 (2021) 390-398.
439. Y. Wang, L.R. Winter, J.G. Chen and B. Yan, "CO_2 Hydrogenation over Heterogeneous Catalysts at Atmospheric Pressure: From Electronic Properties to Product Selectivity", *Green Chemistry*, 23 (2021) 249-267.
440. Z. Xie, L.R. Winter and J.G. Chen, "Bimetallic-Derived Catalysts and Their Application in Simultaneous Upgrading of CO_2 and Ethane", *Matter*, 3 (2021) 408-440.
441. L.R. Winter and J.G. Chen, "N_2 Fixation by Plasma-Activated Processes", *Joule*, 5 (2021) 300-315.
442. C. Tu, X. Nie and J.G. Chen, "Insight into Acetic Acid Synthesis from the Reaction of CH_4 and CO_2", *ACS Catalysis*, 11 (2021) 3384-3401.
443. Z. Xie, E. Gomez and J.G. Chen, "Simultaneously Upgrading CO_2 and Light Alkanes into Value-added Products", *AIChE Journal* (*Cover Perspective Article*), 67 (2021) e17249.
444. R. Xia, D. Tian, S. Kattel, B. Hasaa, H. Shina, X. Ma, J.G. Chen and F. Jiao, "Electrochemical Reduction of Acetonitrile to Ethylamine", *Nature Communications*, 12 (2021) 1949.
445. W.N. Porter, Z. Lin and J.G. Chen, "Experimental and theoretical studies of reaction pathways of direct propylene epoxidation on model catalyst surfaces", *Surface Science Reports*, 76 (2021) 100524.
446. Y. Nian, Y. Wang, A.N. Biswas, X. Chen, Y. Han and J.G. Chen, "Trends and descriptors for tuning CO_2 electroreduction to synthesis gas over Ag and Au supported on transition metal carbides and nitrides", *Chemical Engineering Journal*, 426 (2021) 130781.
447. Z. Lin, S. Liu, S.R. Denny, W.N. Porter, S. Caratzoulas, J.A. Boscoboinik, D.G. Vlachos and J.G. Chen, "Experimental and Theoretical Insights into the Active Sites on WOx/Pt(111) Surfaces for Dehydrogenation and Dehydration Reactions", *ACS Catalysis*, 11 (2021) 8023-8032.
448. D. Wang, Z. Xie, M.D. Porosoff and J.G. Chen, "Recent advances in carbon dioxide hydrogenation to produce olefins and aromatics", *Chem*, 7 (2021) 2277-2311.
449. W.N. Porter, Z. Lin and J.G. Chen, "Elucidating interactions of the epoxide ring on Pt(111) by comparing reaction pathways of propylene oxide and 1-epoxy-3-butene".

Journal of Vacuum Science and Technology A (Special issue honoring Pat Thiel), 39 (2021) 063214.
450. D. Tian, S.R. Denny, K. Li, H. Wang, S. Kattel and J.G. Chen, "Density Functional Theory Studies of Transition Metal Carbides and Nitrides as Electrocatalysts", *Chemical Society Reviews*, 50 (2021) 12338-12376.
451. Z. Mao, Z. Xie and J.G. Chen, "Comparison of Heterogeneous Hydroformylation of Ethylene and Propylene over $RhCo_3$/MCM-41 Catalysts", *ACS Catalysis*, 11 (2021) 14575-14585.
452. Z. Lin; S.R. Denny and J.G. Chen, "Transition Metal Carbides and Nitrides as Catalysts for Thermochemical Reactions", *Journal of Catalysis*, 404 (2021) 929-942.
453. Z. Xie, E. Gomez, D. Wang, J.H. Lee, T. Wang and J.G. Chen, "Coupling CO_2 reduction with ethane aromatization for enhancing catalytic stability of iron-modified ZSM-5", *Journal of Energy Chemistry*, 66 (2022) 210-217.
454. C. Tu, H. Fan, D. Wang, N. Rui, Y. Du, S.D. Senanayake, Z. Xie, X. Nie and J.G. Chen, "CO_2-assisted ethane aromatization over zinc and phosphorous modified ZSM-5 catalysts", *Applied Catalysis B: Environmental*, 304 (2022) 120956.
455. A.N. Biswas, L.R. Winter, B. Loenders, Z. Xie, A. Bogaerts and J.G. Chen, Oxygenate Production from Plasma-Activated Reaction of CO_2 and Ethane", *ACS Energy Letters*, 7 (2022) 236-241.
456. J. Bitters Sasson, T. He, E. Nestler, S.D. Senanayake, J.G. Chen and C. Zhang, "Utilizing bimetallic catalysts to mitigate coke formation in dry reforming of methane", *Journal of Energy Chemistry*, 68 (2022) 124-142.
457. Q. Chang, J.H. Lee, Y. Liu, Z. Xie, S. Hwang, N.S. Marinkovic, A.-H. Park, S. Kattel and J.G. Chen, "Electrochemical CO_2 Reduction Reaction over Cu Nanoparticles with Tunable Activity and Selectivity Mediated by Functional Groups in Polymeric Binder", *JACS Au*, 2 (2022) 214-222.
458. A.N. Biswas, Z. Xie and J.G. Chen, "Can CO_2-assisted alkane dehydrogenation lead to negative CO_2 emissions?" *Joule*, 6 (2022) 269-273.
459. Z. Lin, S.C. Ammal, S.R. Denny, S.A. Rykov, K.-E. You, A. Heyden and J.G. Chen, "Unraveling Unique Surface Chemistry of Transition Metal Nitrides in Controlling Selective C-O Bond Scission Pathways of Glycerol", *JACS Au*, 2 (2022) 367-379.
460. Q. Chang, Y. Hong, H.J. Lee, J.H. Lee, D. Ologunagba, Z. Liang, J. Kim, M.J. Kim, J.W. Hong, L. Song, S. Kattel, Z. Chen, J.G. Chen and S.-I. Choi, "Achieving complete electrooxidation of ethanol by single atomic Rh decoration of Pt nanocubes", *Proceedings of the National Academy of Sciences of United States*, 119 (2022) e2112109119.
461. Z. Xie, X. Wang, X. Chen, P. Liu and J.G. Chen, "General Descriptors for CO_2-Assisted Selective C─H/C─C Bond Scission in Ethane", *Journal of the American Chemical Society*, 114 (2022) 4186-4195.
462. S.R. Denny, Z. Lin, W.N. Porter, N. Artrith and J.G. Chen "Machine learning prediction and experimental verification of Pt-modified nitride catalysts for ethanol reforming with reduced precious metal loading", *Applied Catalysis B: Environmental*, 312 (2022) 121380.
463. X. Yang, J.H. Lee, S. Kattel, B. Xu and J.G. Chen, "Tuning Reaction Pathways of Electrochemical Conversion of CO_2 by Growing Pd Shells on Ag Nanocubes", *Nano Letters*, 22 (2022) 4576-4582.
464. H. Mou, Q. Chang, Z. Xie, S. Hwang, S. Kattel and J.G. Chen "Enhancing Glycerol Electrooxidation from Synergistic Interactions of Platinum and Transition Metal Carbides", *Applied Catalysis B: Environmental*, 315 (2022) 121648.

465. B. Liu, Y. Wang, N. Huang, X. Lan, Z. Xie, J.G. Chen and T. Wang, "Heterogeneous Hydroformylation of Alkenes by Rh-based Catalysts", *Chem*, 8 (2022) 2630-2658.
466. Z. Xie, H. Guo, E. Huang, Z. Mao, X. Chen, P. Liu and J.G. Chen, "Catalytic Tandem CO_2-Ethane Reactions and Hydroformylation for C3 Oxygenate Production", *ACS Catalysis*, 12 (2022) 8279-8290.
467. Z. Mao, H. Guo, Z. Xie, P. Liu and J.G. Chen, "Trends and Descriptors of Heterogeneous Hydroformylation Activity and Selectivity of RhM_3 (M = Fe, Co Ni, Cu and Zn) Catalysts", *Catalysis Science & Technology*, 12 (2022) 4988-4992.
468. A.N. Biswas, Z. Xie, R. Xia, S. Overa, F. Jiao and J.G. Chen, "Tandem Electrocatalytic-Thermocatalytic Reaction Scheme for CO_2 Conversion to C_3 Oxygenates", *ACS Energy Letters*, 7 (2022) 2904-2910.
469. I. Ro, J. Qi, S. Lee, M. Xu, X. Yan, Z. Xie, G. Zakem, A. Morales, J.G. Chen, X. Pan, D.G. Vlachos, S. Caratzoulas and P. Christopher, "Bifunctional hydroformylation on heterogeneous Rh-WO_x pair site catalysts", *Nature*, 609 (2022) 287-292.
470. Q. Chang, Y. Liu, J.-H. Lee, D. Ologunagba, S. Hwang, Z. Xie, S. Kattel, J.H. Lee and J.G. Chen, "Metal-coordinated Phthalocyanines as Platform Molecules for Understanding Isolated Metal Sites in Electrochemical Reduction of CO_2", *Journal of the American Chemical Society*, 144 (2022) 16131-16138.
471. Z. Yin, J. Yu, Z. Xie, S.-W. Yu, L. Zhang, T. Akauola, J.G. Chen, W. Huang, L. Qi and S. Zhang "Hybrid Catalyst Coupling Single-Atom Ni and Nanoscale Cu for Efficient CO_2 Electroreduction to Ethylene", *Journal of the American Chemical Society*, 144 (2022) 20931-20938.
472. P. Cao, X. Quan, X. Nie, K. Zhao, Y. Liu, S. Chen, H. Yu and J. G. Chen, "Metal single-site catalyst design for electrocatalytic production of hydrogen peroxide at industrial-relevant currents", *Nature Communications*, 14 (2023) 172.
473. H. Guo, Z. Xie, X. Wang, J.G. Chen and P. Liu, "Descriptor-based Identification of Bimetallic-derived Catalysts for Selective Activation of Ethane with CO_2", *EES Catalysis*, 1 (2023) 17-25.
474. A.N. Biswas, L.R. Winter, Z. Xie and J.G. Chen, "Utilizing CO_2 as a Reactant for C_3 Oxygenate Production via Tandem Reactions", *JACS Au*, 3 (2023) 293-305.
475. X. Yang, B. Xu, J.G. Chen and X. Yang, "Recent Progress in Electrochemical Nitrogen Reduction on Transition Metal Nitrides", *ChemSusChem*, 16 (2023) e202201715.
476. Z. Xie, S. Hwang and J.G. Chen, "Reduction-induced metal/oxide interfacial sites for selective CO_2 hydrogenation", *SmartMat*, 4 (2023) e1201.
477. Z. Lin, S. Deshpande, S.R. Denny, W.N. Porter, C. Wang, J. Marlowe, P. Christopher, W. Zheng, S. Caratzoulas, D.G. Vlachos and J.G. Chen, "Mechanistic understanding of ring-opening of tetrahydrofurfuryl alcohol over WOx-modified Pt model surfaces and powder catalysts", *ACS Catalysis*, 13 (2023) 8014-8024.
478. L.R. Winter and J.G. Chen, "Challenges and opportunities in plasma-activated reactions of CO_2 with light alkanes", *Journal of Energy Chemistry* (Future Article), 84 (2023) 424-427.
479. Y. Wang, B. Xue, B. Li, N. Libretto, Z. Xie, H. Shen, C. Wang, D. Raciti, N. Marinkovic, H. Zong, W. Xie, Z. Li, G. Zhou, J. Vetik, J.G. Chen, J. Miller, G. Wang and C. Wang, "CO Electroreduction on Single-Atom Copper", *Science Advances*, 9 (2023) eade3557.
480. S. Garg, A.N. Biswas and J.G. Chen, "Opportunities for CO_2 upgrading to C_3 oxygenates using tandem electrocatalytic-thermocatalytic processes", *Carbon Future*, 1 (2023) 9200002.

481. Z. Xie and J.G. Chen, “Bimetallic-derived catalytic structures for CO_2-assisted ethane activation”, *Accounts of Chemical Research,* 56 (2023) 2447-2458.
482. K.K. Turaczy, W. Liao, H. Mou, N.N. Nichols, P. Liu and J.G. Chen, “Correlating experimentally determined hydrogen binding energy with hydrogen evolution activity over metal monolayers on molybdenum nitride”, *ACS Catalysis,* 13 (2023) 14268-14276.
483. Y. Yuan, W.N. Porter and J.G. Chen, “Comparison of Direct and CO_2-Oxidative Dehydrogenation of Propane”, *Trends in Chemistry,* 5 (2023) 840-852.
484. P. Zhai, Z. Xie, E. Huang, D.R. Aireddy, H. Yu, D.A. Cullen, P. Liu, J.G. Chen and K. Ding, “CO_2-Mediated Oxidative Dehydrogenation of Propane Enabled by Pt-Based Bimetallic Catalysts”, *Chem*, 9 (2023) 3268-3285.
485. W.N. Porter, H.A. Mera, W. Liao, Z. Lin, P. Liu, J.R. Kitchin and J.G. Chen, “Controlling Bond Scission Pathways of Isopropanol on Fe- and Pt-Modified Mo_2N Model Surfaces and Powder Catalysts”, *ACS Catalysis*, 14 (2024) 1653-1662.
486. Z. Xie, E. Huang, S. Garg, S. Hwang, P. Liu and J.G. Chen, “CO_2 fixation into carbon nanofibers using electrochemical-thermochemical tandem catalysis”, *Nature Catalysis,* 7 (2024) 98-109.
487. L. Jiang, K. Li, W.N. Porter, H. Wang, G. Li and J.G. Chen, “Role of H_2O in catalytic conversion of C1 molecules”, *Journal of the American Chemical Society,* 146 (2024) 2857-2875.
488. H. Mou, J.J. Jeong, B. Lamichhane, S. Kattel, Z. Zhuang, J.H Lee, Q. Chang and J.G. Chen, “Trends in Electrocatalytic Activity and Stability of Transition Metal Nitrides”, *Chem Catalysis*, 4 (2024) 100867.
489. Y. Yuan, Z. Xie, K.K. Turaczy, S. Hwang, J. Zhou and J.G. Chen, “Controlling product distribution of polyethylene hydrogenolysis using bimetallic RuM_3 (M = Fe, Co, Ni) catalysts”, *Chem & Bio Engineering*, 1 (2024) 67-75.
490. S. Garg, Z, Xie and J.G. Chen, “Tandem Reactors and Reactions for CO_2 Conversion”, *Nature Chemical Engineering*, 1 (2024) 139-148.
491. X. Zhao, C. Karakaya, M. Qian, R. Zou, W. Zhang, Z. Lu, D. Maiti, A. Samanta, W. Wan, X. Liu, A. Tiplea, Y. Li, S. Cui, C. Wang, H. Lei, S. Bankston, S. Yilmaz, J.G. Chen and S. Ozcan, “3D printing synthesis of catalysts”, *Materials Today Sustainability*, 26 (2024) 100746.
492. H. Mou, F. Lu, Z. Zhuang, Q. Chang, L. Zhang, X. Chen, Y. Zhang and J.G. Chen, "Glycerol Electrooxidation over Precision-Synthesized Gold Nanocrystals with Different Surface Facets”, *Precision Chemistry*, 2 (2024) 103-111.
493. W. Zhang, H. Yao, R. Khare, P. Zhang, B. Yang, W. Hu, J. Hu, D.M. Camaioni, H. Wang, S. Kim, M.-S. Lee, M.L. Sarazen, J.G. Chen and J.A. Lercher, “Chloride and hydride transfer as keys to catalytic upcycling of polyethylene into liquid alkanes”, *Angewandte Chemie International Edition,* 136 (2024) e202319580.
494. R.J. Meyer, S.R. Bare, G.A. Canning, J.G. Chen, P.M. Chu, A.S. Hock, A.S. Hoffman, A.M. Karim, S.D. Kelly, Y. Lei, E. Stavitski and C.J. Wrasman, “Recommendations to Standardize Reporting, Execution and Interpretation of XAS Measurements”, *Journal of Catalysis*, 432 (2024) 115369.
495. S.-W. Yu, S. Kwon, Y. Chen, Z. Xie, X. Lu, K. He, S. Hwang, J.G. Chen, W.A. Goddard and S. Zhang, “Construction of a Pt-CeOx Interface for the Electrocatalytic Hydrogen Evolution Reaction”, *Advanced Functional Materials*, 34 (2024) 2402966.
496. W.N. Porter, K.K. Turaczy, M. Yu, H. Mou and J.G. Chen “Transition metal nitride catalysts for selective conversion of oxygen-containing molecules”, *Chemical Science,* 15 (2024) 6622-6642.

497. W.J. Shaw, M.K. Kidder, S.R. Bare, M. Delferro, J.R. Morris, F.M. Toma, S.D. Senanayake, T. Autrey, E.J. Biddinger, S. Boettcher, P.F. Britt, R.C. Brown, R.M. Bullock, J.G. Chen, C. Daniel, P.K. Dorhout, R.A. Efroymson, et al. "A U.S. Perspective to Close the Carbon Cycle to Defossilize Difficult to Electrify Segments of our Economy", *Nature Reviews Chemistry*, 8 (2024) 376-400.
498. Y. Yuan, E. Huang, S. Hwang, P. Liu and J.G. Chen, "Converting Carbon Dioxide into Carbon Nanotubes by Reacting with Ethane", *Angewandte Chemie International Edition*, 63 (2024) e202404047.
499. P. Cao, X. Zhao, Y. Liu, H. Zhang, K. Zhao, S. Chen, H. Yu, F. Dong, N.N. Nichols, J.G. Chen and X. Quan, "Highly Efficient Acidic Electrosynthesis of Hydrogen Peroxide at Industrial-Level Current Densities Promoted by Alkali Metal Cations", *Angewandte Chemie International Edition*, 63 (2024) e202406452.
500. S. Garg, Z. Xie, A.X. Lam and J.G. Chen, "Tandem Electrocatalytic-Thermocatalytic Conversion of CO_2 to Aromatic Hydrocarbons", *ACS Energy Letters*, 9 (2024) 2990-2996.
501. X. Han, T. Mou, A. Islam, S. Kang, Q. Chang, Z. Xie, X. Zhao, K. Sasaki, J.A. Rodriguez, P. Liu, and J.G. Chen, "Theoretical Prediction and Experimental Verification of IrO_x Supported on Titanium Nitride for Acidic Oxygen Evolution Reaction", *Journal of the American Chemical Society*, 146 (2024) 16499-16510.
502. D.A. Bushiri, A.F. Baxter, O. Odunjo, D.V. Fraga Alvarez, Y. Yuan, J.G. Chen and D.V. Esposito, "Oxide Encapsulated Ruthenium Oxide Catalysts for Selective Oxygen Evolution in Unbuffered pH Neutral Seawater", *ACS Applied Energy Materials*, 7 (2024) 5479-5489.
503. W.N. Porter, W. Liao, M. Yu, Y. Yuan, Z. Lin, P. Liu and J.G. Chen "Using ethanol and isopropanol as biomass model compounds for understanding bond scission mechanisms over Cu/Mo_2N catalysts", *Applied Catalysis B*, 358 (2024) 124362.
504. Y. Yuan, E. Huang, S. Hwang, P. Liu and J.G. Chen, "Confining Platinum Clusters in Indium-Modified ZSM-5 Zeolite to Promote Propane Dehydrogenation", *Nature Communications*, 15 (2024) 6529.
505. W.N. Porter1, K. Kisslinger, Y. Yuan and J.G. Chen, "Influence of support on Rh-Co bimetallic catalysts for ethylene hydroformylation", *Journal of Catalysis*, 438 (2024) 115733.
506. T. Mou, D.A. Bushiri, D.V. Esposito, J.G. Chen and P. Liu, "Rationalizing Acidic Oxygen Evolution Reaction over IrO_2: Essential Role of Hydronium Cation", *Angewandte Chemie International Edition*, 63 (2024) e202409526.
507. Z. Xie and J.G. Chen, "Comparison of approaches for CO_2 sequestration as solid carbon products", *CCS Chemistry*, 6 (2024) 2855-2865.
508. D.R. Shah, A. Tucker, Z. Xie, J.G. Chen and C.W. Jones, "Evolution of Fe Sites in Conversion of CO_2 to Methanol to Aromatics in Tandem H-[Fe]-ZSM-5/ZnO-ZrO_2 Catalysts", *CCS Chemistry*, 6 (2024) 2895-2907.
509. G. Li, A. Priyadarsini, Z. Xie, S. Kang, Y. Liu, X. Chen, S. Kattel and J.G. Chen, "Achieving Higher Activity of Acidic Oxygen Evolution Reaction using Atomically Thin Layer of IrOx over Co_3O_4", *Journal of the American Chemical Society*, 147 (2025) 7008-7016.
510. Z. Xie, E. Huang, K.K. Turaczy, S. Garg, S. Hwang, P.R. Kasala, P. Liu and J.G. Chen, "Biogas sequestration to carbon nanofibers via tandem catalytic strategies", *Nature Chemical Engineering*, 2 (2025) 118-129.

511. N.N. Nichols, X. Han, S. Kang, H. Zhao, S. Kattel and J.G. Chen, "Platinum and Gold Supported on Transition Metal Nitrides for Hydrogen Evolution in Alkaline Electrolyte", *Energy & Fuels*, 39 (2025) 5587–5593.
512. W. Zhang, S. Kim, M.L. Sarazen, M. He, J.G. Chen and J.A. Lercher, "Advances and Challenges in Low-temperature Upcycling of Waste Polyolefins via Tandem Catalysis", *Angewandte Chemie International Edition*, 64 (2025) e202500559.
513. Y. Yuan, T. Mou, S. Hwang, W.N. Porter, P. Liu and J.G. Chen "Controlling Reaction Pathways of Ethylene Hydroformylation using Isolated Bimetallic Rhodium-Cobalt Sites", *Journal of the American Chemical Society*, 47 (2025) 12185-12196.
514. Q. Wang, S.-F. Hung, K. Lao, X. Huang, F. Li, H.B. Tao, H.B. Yang, W. Liu, W. Wang, L. Zhang, J. Zhang, Y. Cheng, Y. Liu, J. Chen, Y. Xu, C. Su, J.G. Chen and B. Liu, "Breaking the linear-scaling limit in multi-electron-transfer catalysis through intermediate spillover", *Nature Catalysis*, 8 (2025) 378-388.

Selected Invited Talks and Department Seminars:

Keynote Lecture, 29th North American Catalysis Meeting (NAM), Atlanta, June 2025
ExxonMobil Lecture, Chemical Engineering, University of Massachusetts, April 2025
Endowed Lecture, Chemical Engineering, University of Texas at Austin, April 2025
Lindsay Lecture, Chemical Engineering, Texas A&M University, April 2025
Department Seminar, Chemical Engineering, University of Washington at Seattle, March 2025
Department Seminar, Chemical Engineering, Washington University in St Louis, March 2025
Department Seminar, Chemical Engineering, University of Connecticut, February 2025
Department Seminar, Chemical Engineering, Stanford University, February 2025
Plenary Talk, AIChE Annual Meeting, San Diego, October 2024
Invited Talk, American Chemical Society Annual Meeting, Denver, August 2024
Great Mind Forum, University of Science & Technology of China, July 2024
Dai AnBang Lecture, Chemistry & Chemical Engineering, Nanjing University, July 2024
Invited Lecture, Gordon Research Conference on Catalysis, New Hampshire, June 2024
Sussman Lecture, Chemical Engineering, Tufts University, April 2024
Department Seminar, Pacific Northwest National Laboratory, March 2024
Invited Talk, Catalysis Society of Metropolitan New York, February 2024
Department Seminar, Chemical Engineering, Washington State University, October 2023
Industry Seminar (virtual), Aramco Research Center, June 2023
Invited Talk, Electrochemical Society Annual Meeting, Boston, May 2023
Department Seminar (virtual), Chemical Engineering, UC-Irvine, April 2023
PPG Distinguished Lectureship Seminar, Chemical Engineering, Univ. Wisconsin, April 2023
Distinguished Lectureship Seminar (virtual), National University of Singapore, April 2023
Department Seminar, Chemistry, Duke University, April 2023
Keynote Talk, American Chemical Society Annual Meeting, Indianapolis, March 2023
Department Seminar, Chemical Engineering, Carnegie Mellon University, March 2023
Industry Seminar, W.R. Grace & Co., February 2023
Invited Talk, AIChE Annual Meeting, Phoenix, November 2022
Department Seminar, Chemical Engineering, Rutgers University, October 2022
Department Seminar, College of Engineering, Brown University, October 2022
Invited Talk, American Chemical Society Annual Meeting, Chicago, August 2022
Keynote Lecture (virtual), 12th International Conference on Environmental Catalysis, Osaka, August 2022
Keynote Lecture (virtual), Hong Kong Poly Univ. 85th Anniversary Workshop, July 2022

Invited Talk (virtual), DOE Hydrogen Program 2022 Annual Merit Review, June 2022
Plenary Lecture (virtual), Canadian Symposium on Catalysis, Vancouver, May 2022
Department Seminar, Chemical Engineering, Virginia Tech, April 2022
Invited Talk, American Chemical Society Annual Meeting, San Diego, March 2022
Department Seminar, Chemical Engineering, Univ. Houston, March 2022
Plenary Lecture (virtual), DOE/BES Roundtable on Foundational Science for CO_2 Removal Technologies, March 2022
Industry Seminar (virtual)**,** LyondellBasell, Houston Technology Center, February 2022
Kurt Wohl Memorial Lecture, Chemical Engineering, Univ. Delaware, November 2021
Invited Talk (virtual), CACS Symposium, AIChE Annual Meeting, Boston, November 2021
Invited Talk (virtual), Summit on Decarbonization of the AG Sector, ORNL, September 2021
Invited Talk (virtual), American Chemical Society Annual Meeting, Atlanta, August 2021
Invited Talk (virtual), National Renewable Energy Laboratory, July 2021
Department Seminar (virtual), Chemistry, Queen's Univ., Canada, May 2021
Department Seminar (virtual), Chemical Engineering, Univ. Notre Dame, April 2021
Department Seminar (virtual), Chemical Engineering, Texas Tech. Univ. March 2021
Plenary Session Talk (virtual), US-UK Joint Symposium on Operando Catalysis, March 2021
Department Seminar (virtual), Materials Sci. & Engineering, Nanyang Tech. Univ. March 2021
Department Seminar (virtual), Mechanical Engineering, Univ. Texas, February 2021
Department Seminar (virtual), Chemistry, Univ. Virginia, February 2021
Department Seminar (virtual), École Polytechnique Fédérale de Lausanne, November 2020
Invited Talk (virtual), Pacific Northwest National Laboratory, November 2020
Department Seminar (virtual), Chemical Engineering, Louisiana State Univ. October 2020
Department Seminar (virtual), Chemical Engineering, Oklahoma State Univ. October 2020
Department Seminar (virtual), Chemical Engineering, Univ. Michigan, September 2020
Colloquium, Center for Functional Nanomaterials, BNL, March 2020
Distinguished Seminar, Chemical Engineering, Northeastern University, February 2020
Henry Bent Distinguished Lecture, Chemical Engineering, University of Missouri, Oct. 2019
Plenary Session Talk, DOE Catalysis Science Program Annual PI Meeting, July 2019
Department Seminar, Materials Science & Engineering, Jilin University, May 2019
Invited Talk, DOE Workshop on Earth Abundant Catalysts, Rockville, MD, April 2019
Plenary Lecture, Great Plains Catalysis Society Annual Meeting, April 2019
Invited Talk, ExxonMobil Symposium at American Chemical Society Meeting, April 2019
Department Seminar, Chemical Engineering, University of Cincinnati, March 2019
Burwell Lecture, Michigan Catalysis Society, November 2018
Invited Talk, Canadian Chemical Engineering Annual Meeting, Toronto, October 2018
Invited Talk, AIChE Annual Meeting, Pittsburgh, October 2018
Department Seminar, Materials Science & Engineering, Cornell University, October 2018
Burwell Lecture, Southeastern Catalysis Society Annual Symposium, Atlanta, September 2018
Keynote Lecture, 7th EuCheMS Chemistry Congress, Liverpool, August 2018
Department Seminar, Chemical Engineering, ECUST, July 2018
DongWu Lectureship, Energy Institute, Suzhou University, July 2018
Catalysis Forum Lectureship, Department of Chemistry, Peking University, July 2018
Burwell Lecture, Pittsburgh-Cleveland Catalysis Society Annual Meeting, June 2018
Keynote Lecture, Rocky Mountain Catalysis Society Symposium, June 2018
Plenary Lecture, Canadian Symposium on Catalysis, Saskatoon, May 2018
Department Seminar, Chemical Engineering, Zhejiang University, May 2018
Invited Talk, Chinese Chemical Society Annual Meeting, Hangzhou, May 2018
Department Seminar, College of Chemistry and Engineering, Nanjing University, May 2018

Department Seminar, Chemical Engineering, Tianjin University, May 2018
Department Seminar, College of Materials Science, Nankai University, Tianjin, May 2018
Burwell Lecture, Southwest Catalysis Club Annual Symposium, Houston, April 2018
Department Seminar, Chemical Engineering, University of Oklahoma, March 2018
Department Seminar, Department of NanoEngineering, UC San Diego, January 2018
Keynote Lecture, New England Catalysis Society Annual Meeting, December 2017
Burwell Lecture, Metropolitan New York Catalysis Society, November 2017
Department Seminar, Chemical Engineering, Purdue University, November 2017
Burwell Lecture, Chicago Catalysis Club, November 2017
Eastman Lectureship, Chemical Engineering, UC Berkeley, October 2017
Burwell Lecture, Philadelphia Catalysis Club, October 2017
Department Seminar, Chemical Engineering, University of Buffalo, October 2017
Department Seminar, Chemical Engineering, Washington State University, September 2017
Burwell Lecture, Pacific Coast Catalysis Society Annual Meeting, Davis, CA, September 2017
Keynote Lecture, 17th Congress of Asian Pacific Confederation of Chemical Engineering, Hong Kong, August 2017
Department Seminar, Chemical Engineering, Hong Kong Univ. Science & Tech, August 2017
Department Seminar, Chemical Engineering, South China Univ. Technology August 2017
Keynote Lecture, 91st ACS Colloid & Surface Science Symposium, New York, July 2017
Department Seminar, Chemistry, Wuhan University, June 2017
Zhang Dayu Award Lectureship, Dalian Institute of Chemical Physics, Dalian, June 2017
Plenary Lecture, 2nd International Conference on Applied Surface Science, Dalian, June 2017
Keynote Lecture, 25th North American Catalysis Meeting (NAM), Denver, June 2017
Invited Talk, Electrochemical Society Annual Meeting, New Orleans, May 2017
Department Seminar, Chemical Engineering, North Carolina State University, March 2017
Department Seminar, Chemical Engineering, Tianjin University, January 2017
Invited Talk, American Vacuum Society (John Yates Symposium), Nashville, November 2016
Department Seminar, Energy Sciences Institute, Yale University, November 2016
Invited Talk, American Chemical Society Annual Meeting, Philadelphia, August 2016
Keynote Lecture, Post-ICC Conference on Nano and Interfacial Catalysis, Dalian, July 2016
Invited Talk, 16th International Congress of Catalysis Conference, Beijing, July 2016
Plenary Lecture, Conference on Plasma Applications for Catalysis, Tianjin, June 2016
TsingFen Lecture, Chemistry Department, Tsinghua University, June 2016
Department Seminar, Chemical Science and Engineering, Tongji University, June 2016
Department Seminar, Chemical Engineering, University of Tennessee, April 2016
Invited Talk, American Chemical Society Annual Meeting, San Diego, March 2016
Department Seminar, Materials Sci. & Engineering, Stony Brook University, February 2016
Invited Talk, Catalysis Club of Philadelphia, January 2016
Department Seminar, Chemical Engineering, Zhejiang University, January 2016
Invited Talk, AIChE Annual Meeting, Salt Lake City, November 2015
Department Seminar, Chemical Engineering, Lehigh University, November 2015
Keynote Lecture, Sino-USA Annual Chemical Engineering Meeting, Shanghai, October 2015
Chemical Engineering Forum Lecture, Tsinghua University, October 2015
Invited Talk, American Chemical Society Annual Meeting, Boston, August 2015
Industry Seminar, SABIC Technology Center, June 2015
Parravano Memorial Award Lecture, Michigan Catalysis Society Annual Meeting, May 2015
Invited Talk, Southwest Catalysis Club Annual Meeting, April 2015
Department Seminar, Chemical Engineering, University of Houston, April 2015
Department Seminar, Chemical Engineering, University of California, Riverside, April 2015

Nano@Wayne Seminar, Wayne State University, April 2015
George Olah Award Lecture, American Chemical Society Meeting, Denver, March 2015
Department Seminar, Chemical Engineering, Villanova University, March 2015
Distinguished Speaker Seminar, University of Alabama at Huntsville, March 2015
Invited Tutorial Talk, AIChE Annual Meeting, Atlanta, November, 2014
Department Seminar, Chemical Engineering, University of South Florida, October 2014
Keynote Lecture, American Chemical Society Annual Meeting, San Francisco, August 2014
Department Seminar, Dalian Institute of Chemical Physics, July 2014
Department Seminar, Chemistry Department, Nanjing University, June 2014
Department Seminar, Mechanical Engineering, Shanghai Jiaotong University, June 2014
Department Seminar, Chemistry Department, Columbia University, May 2014
Industry Seminar, BASF Company, New Jersey, May 2014
Department Seminar, Materials Science and Engineering, Tsinghua University, April 2014
Department Seminar, Chemical Engineering, Princeton University, April 2014
Eastman Catalysis Lectureship, University of South Carolina, April 2014
Department Seminar, Chemical Engineering, University of Pittsburgh, April 2014
Industry Seminar, ExxonMobil Research and Engineering, New Jersey, April 2014
Department Seminar, Chemical Engineering, Ohio State University, March 2014
Invited Talk, American Chemical Society Annual Meeting, Dallas, March 2014
Invited Talk, Annual Meeting of Material Research Society (MRS), Boston, December 2013
Department Seminar, Chemical Engineering, City College of New York, October 2013
Department Seminar, Chemical Engineering, Rutgers University, October 2013
Invited Talk, New York Catalysis Club, October 2013
Department Seminar, Chemical Engineering, Johns Hopkins University, September 2013
Physical Chemistry Forum Lecture, Peking University, July 2013
Industry Seminar, ExxonMobil Strategic Research Laboratory, March, 2013
Keynote Lecture, Laboratory for Surface Modification Symposium, Rutgers Univ. March, 2013
Department Seminar, Chemistry, Tufts University, February, 2013
Invited Talk, AIChE Annual Meeting, Pittsburgh, October, 2012
Department Seminar, Chemical Engineering, Tsinghua University, October 2012
Department Seminar, Chemical Engineering, Xi'an Jioatong University, October 2012
Invited Lecture, Chinese National Science Foundation Planning Meeting, October 2012
Keynote Lecture, American Chemical Society Annual Meeting, Philadelphia, August 2012
Invited Lecture, Gordon Research Conference on Catalysis, New Hampshire, June 2012
Department Seminar, Chemical Engineering, Univ. Texas at Austin, April 2012
Industry Seminar, Celanese Ltd., April 2012
Department Seminar, Chemical Engineering, Univ. Kansas, October 2011
Invited Talk, DOE/BES Contractors' Meeting, October 2011
Invited Talk, National Academies Chemical Sciences Roundtable, September 2011
Plenary Lecture, Annual Meeting of the Chicago Catalysis Club, May 2011
Invited Lecture, American Chemical Society Annual Meeting, Anaheim, March 2011
Invited Lecture, New York Catalysis Club, March 2011
Plenary Lecture, Chemical Heritage Foundation, Philadelphia, September 2010
Invited Talk, American Chemical Society Annual Meeting, Boston, August 2010
Invited Lecture, Philadelphia Catalysis Club, May 2010
Industry Seminar, ExxonMobil Chemicals, May 2010
Department Seminar, Chemical Engineering, Univ. Virginia, April 2010
Frontier Seminar in Catalysis, Pacific Northwest National Laboratory, March 2010
Department Seminar, Chemical Engineering, Columbia Univ. February 2010

Invited Lecture, Workshop on Design of Catalytic Materials, Univ. Notre Dame, January 2010
Invited Lecture, Chicago Catalysis Club, November 2009
Department Seminar, Argonne National Laboratory, November 2009
Industry Seminar, British Petroleum, November 2009
Department Seminar, Chemical Engineering, Tsinghua University, September 2009
Invited Talk, American Chemical Society Annual Meeting, Washington, DC, August 2009
Keynote Lecture, New England Catalysis Club Annual Meeting, April 2009
Invited Lecture, Michigan Catalysis Club, April 2009
Invited Talk, American Chemical Society Annual Meeting, Salt Lake City, March 2009
Department Seminar, New Jersey Institute of Technology, February 2009
Department Seminar, Univ. Wisconsin at Madison, January 2009
Industry Seminar, Air Liquide, November 2008
Department Seminar, Department of Chemical Engineering, Purdue Univ. September 2008
Industry Seminar, W.R. Grace, August 2008
Invited Lecture, Gordon Research Conference on Fuel Cells, July 2008
Industry Seminar, BASF, March 2008
Department Seminar, Department of Chemistry, Lehigh Univ. December 2007
Invited, Basic Research Needs for Energy, AIChE Meeting, Salt Lake City, November 2007
Department Seminar, Chemical Engineering, Pennsylvania State Univ. October 2007
Industry Seminar, Eastman Chemicals, September 2007
Keynote Lecture, North American Catalysis Meeting, Houston, June 2007
Department Seminar, Dalian Institute of Chemical Physics, China, May 2007
Distinguished Lecture in Catalysis, Pacific Northwest National Laboratory, March 2007
Department seminar, Department of Chemistry, Univ. Ottawa, January 2007
Keynote Lecture, ExxonMobil Research Symposium, October 2006
Keynote Lecture, American Chemical Society Annual Meeting, San Francisco, September 2006
Industry Seminar, ABB Lummus, June 2006
Invited Lecture, National Synchrotron Light Source Annual Meeting, May 2006
Industry Seminar, Headwaters Nanotechnology Inc. April 2006
Keynote Lecture, Annual Meeting of New York Catalysis Club, March 2006
Department Seminar, Department of Chemical Engineering, Ohio State Univ. December 2005
Distinguished Lecture in Nanocatalysis, Chemical Engineering, Tufts Univ. November 2005
Department Seminar, Chemical Engineering, Univ. Pennsylvania, October 2005
Department Seminar, Chemical Engineering, City College of New York, September 2005
Industry Seminar, ExxonMobile Research and Engineering, June 2005
Invited Talk, American Chemical Society, San Diego, March 2005
Industry Seminar, W.L. Gore Associates, November 2004
Invited Lecture, Center of Surface Science, Rutgers University, October 2004
Keynote Lecture, American Vacuum Society Annual Meeting, Anaheim, October 2004
Department Seminar, Chemistry Department, Brookhaven National Laboratory, August 2004
Invited Talk, American Chemical Society Annual Meeting, Philadelphia, August 2004
Industry Seminar, BOC Company, July 2004
Invited Lecture, Gordon Research Conference on Catalysis, New Hampshire, June 2004
Hua-Ying Distinguished Lecture, Nanjing Univ. May 2004
Department Seminar, Chemical Engineering, Virginia Tech, March 2004
Industry Seminar, DuPont Experimental Station, October 2003
Invited Talk, American Chemical Society Annual Meeting, New York, September 2003
Plenary Lecture, 2nd International Conference on Elementary Processes in Molecules,

Puerto Rico, May 2003
Department Seminar, Chemical Engineering, North Carolina State Univ. March 2003
Department Seminar, Department of Chemistry, Texas A&M Univ. November 2002
Department Seminar, Chemical Engineering, Yale Univ. October 2002
Department Seminar, Department of Chemistry, Peking Univ. October 2002
Invited Talk, American Chemical Society Annual Meeting, Boston, August 2002
Industry Seminar, ExxonMobil Research and Engineering, July 2002
Invited Talk, American Chemical Society Annual Meeting, Orlando, April 2002
Department Seminar, Department of Chemistry, BrynMawr College, February, 2002
Department Seminar, Chemical Engineering, Carnegie Mellon Univ. December 2001
Invited Lecture, Annual Synchrotron User Meeting, Brookhaven National Lab, May 2001
Department Seminar, Department of Chemistry, Temple University, April 2001
Department Seminar, Oak Ridge National Laboratory, June 2001
Invited Lecture, DOE "Catalysis Futures Workshop", Berkeley, March 2001
Industry Seminar, Johnson Matthey Company, March 2001
Invited Lecture, Pacifichem Meeting, Honolulu, December 2000
Invited Lecture, Pittsburgh Catalysis Club Annual Meeting, December 2000
Keynote Lecture, American Vacuum Society Conference, Boston, October 2000
Industry Seminar, Rohm and Haas Company, October 2000
Invited Lecture, Philadelphia Catalysis Club, September 2000
Industry Seminar, Lyondell Company, September 2000
Invited Lecture, Surface Science Center, University of Pittsburgh, August 2000
Department Seminar, Department of Materials Science, Drexel University, January 2000
Invited Talk, North American Catalysis Meeting, Boston, May 1999
Department Seminar, Department of Chemistry, University of Illinois at Chicago, May 1998
Invited Talk, American Chemical Society Annual Meeting, Dallas, April 1998
Keynote Lecture, North American Meeting of the Catalysis Society, Chicago, May 1997
Invited Talk, American Chemical Society Annual Meeting, San Francisco, April 1997
Invited Lecture, Gordon Research Conference on Reactions at Surfaces, February 1997
Invited Lecture, Gordon Research Conference on Catalysis, New London, NH, June 1996
Invited Talk, Pacifichem Meeting, Honolulu, December 1995