

John L. Falconer

Mel and Virginia Clark Professor
President's Teaching Scholar

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Date and Place of Birth: August 2, 1946 in Baltimore, Maryland

Education: Ph.D. (Chemical Engineering), Stanford University 1974 (1971-74), M.S. 1968

B.E.S. (Chemical Engineering), The Johns Hopkins University, 1967

Research Interests: Zeolite membrane preparation, characterization, and applications. Heterogeneous catalysis and photocatalysis. Adsorption in porous materials. Atomic and molecular layer deposition for catalysts and membranes.

Teaching Interests: Thermodynamics, Kinetics/Reaction Engineering, Active learning with ConcepTests, personal response systems, and peer instruction. Preparation of ConcepTests, screencasts (www.learncheme.com, www.youtube.com/learncheme), and Mathematica interactive simulations for chemical engineering courses.

Professional Experience: Mel and Virginia Clark Professor, 7/2007-12/2018

Chair of Chemical and Biological Engineering, 7/2007-7/2011

Associate Chair of Chemical and Biological Engineering, 7/2005-6/2007

Visiting Professor, Technical University of Delft, Netherlands, 1/98 - 3/98

co-director: NSF-Research Experiences for Undergraduates Program in Membrane and Thin Film Science, 1993 – 2001, in Functional Materials 2003 - 2011

James and Catherine Patten Professor, 1992 - 96

Professor of Chemical Engineering, University of Colorado, 1985-present

Associate Professor, 1980 - 1985. Assistant Professor, 1975 - 1980.

Postdoctoral Fellow, Stanford Research Institute, Menlo Park, CA, 9/74 - 8/75

Process Research Engineer, Fairchild Semiconductor R & D Lab, Palo Alto, CA, 5/69- 8/69

Military Service: Petroleum Laboratory Technician, U. S. Army, Fort Rucker, AL, 8/69 - 6/71

Honors and Awards: ASEE CHED Lifetime Achievement Award (2017)

AIChE Warren K. Lewis Award for Chemical Engineering Education (2015)

AIChE David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education, with J. deGrazia, J.W. Medlin, G.N. Nicodemus (2015)

Chancellor's Award for Excellence in STEM Education (2015)

Department Outstanding Undergraduate Teaching Award (2014)

College of Engineering Dean's Faculty Fellowship (2014-2015)

Johansen-Crosby Lectureship, Michigan State University (2013)

Featured chemical engineering educator in *Chemical Engineering Education* (2013)

Fellow of American Institute of Chemical Engineers (2012)

Chancellor's Award for Excellence in STEM Education (2011)

Boulder Faculty Assembly Award for Excellence in Service (2011)

Hazel Barnes Prize- highest faculty recognition for teaching and research given by the University of Colorado Boulder (2008)

College of Engineering Max S. Peters Outstanding Service Award (2008)

University of Colorado CRCW Faculty Fellowships (2004-05, 1997-98, 1990-91)

2005 ASEE Annual Conference Best Zone Paper Award (with J. deGrazia, A. Weimer)

University of Colorado President's Teaching Scholar (the University's highest teaching recognition, a lifetime appointment, 2000-)

Boulder Faculty Assembly Excellence in Research, Scholarly, and Creative Work Award (1999)

Chemical Manufacturers Association National Catalyst Award for Excellence in Teaching (1997)

ASEE Rocky Mountain Section Outstanding Teaching Award (1997)

Departmental Outstanding Teaching Awards (1988, 1994, 1995, 1997, 1999, 2000)

ACS Colorado Section Award in Chemistry (1992)

College of Engineering Outstanding Advisor Award (1992)

College of Engineering Research Award (1991)

Charles Hutchinson Memorial Teaching Award, College of Engineering (1990)
University of Colorado Summer Research Initiation Fellowship (1975)

Professional Engineer: State of Colorado Reg. Number 16909

Society Memberships and Boards: *Chemical Engineering Education* Publication Board, 2017-2020; CACHE (Computer Aids for Chemical Engineering) Trustee, 2016-2019; Petroleum Research Fund Advisory Board, 2008-2014; AIChE (a director of the Catalysis and Reaction Engineering Division, 2007-2010); American Chemical Society; North American Catalysis Society; American Society of Engineering Education; International Zeolite Membrane Meeting Scientific Committees (2007, 2010, 2013)

Short Course Instructor: Polymer Reactor Engineering, Center for Professional Advancement: 1992-1998 (9 times): Amsterdam, The Netherlands; East Brunswick, NJ; Houston, TX

Consultant: Boeing Satellite Systems, El Segundo, CA, 2009; Chemical and Metals Industry, Hudson, CO, 2005; Intellectual Capital Management Group, Palo Alto, CA, 2004-2005; Boulder Center for Science and Policy, Boulder, CO, 1996,1997,1999; TDA Research, Wheatridge, CO, 1995; Weyerhaeuser, St. Louis, MO, 1994; Bend Research, Inc., Bend, OR, 1989-1992; Econalytic Systems, Boulder, CO, 1989, 1991; Elkem Metals, Norway, 1989, New York, 1987, 1989; Solar Energy Research Institute, Colorado, Texas, 1987; 3M Corp., St Paul, MN, 1983-84.

Educational Resources Developed

Our website www.learncheme.com contains teaching materials that we developed for chemical engineering education including more than 2,000 ConcepTests, 1,450 screencast videos, and 150 interactive simulations. Course packages are also available for three chemical engineering courses: thermodynamics, kinetics, and material and energy balances. *The videos have been watched or downloaded more than 18 million times* on YouTube (<http://www.youtube.com/LearnChemE>) and iTunesU, and our YouTube channel has more than 68,500 subscribers. The interactive *Mathematica* simulations are on the Wolfram Project Demonstration site: (<http://demonstrations.wolfram.com/>). The AIChE Concept Warehouse website (http://jimi.cbee.oregonstate.edu/concept_warehouse/), which was developed under a joint NSF grant, has more than 2,000 ConcepTests.

Journal Publications: (*Web of Science: cited more than 11,750 times, h-index = 60; Google Scholar cited more than 15,750 times, h-index = 69*)

1. McCarty, J., Falconer, J. L., Madix, R. J., "Decomposition of Formic Acid on Ni(110) I. Flash Decomposition from the Clean Surface and Flash Desorption of Reaction Products", **J. Catalysis** **30**, 235-249 (1973).
2. Madix, R. J., Falconer, J. L., McCarty, J. G. "Surface Microcatalysis: The Enhanced Selectivity of Ni(110) (4x5)C for Dehydrogenation of Formic Acid", **J. Catalysis** **31**, 316-318 (1973).
3. Falconer, J. L., McCarty, J. G., Madix, R. J., "Surface Explosion: HCOOH on Ni(110)", **Surface Science** **42**, 329-330 (1974).
4. Falconer, J. L., Madix, R. J., "The Kinetics and Mechanism of the Autocatalytic Decomposition of HCOOH on Clean Ni(110)", **Surface Science** **46**, 473-504 (1974).
5. Falconer, J. L., McCarty, J. G., Madix, R. J., "The Explosive Decomposition of Formic Acid on Clean Ni(110)", **Jap. J. App. Phys. Suppl.** **2**, 525-528 (1974).
6. Falconer, J. L., Madix, R. J., "Flash Desorption Activation Energies: DCOOH Decomposition and CO Desorption from Ni(110)", **Surface Science** **48**, 393-405 (1975).
7. Falconer, J. L., Madix, R. J., "Surface Stabilized Reaction Intermediate: Formic Anhydride", **Surface Science** **51**, 546-548 (1975).
8. Madix, R. J., Falconer, J. L., Susko, A., "The Autocatalytic Decomposition of Acetic Acid on Ni(110)", **Surface Science** **54**, 6-20 (1976).
9. Falconer, J. L., Wise, H., "Temperature Programmed Desorption Spectroscopy of N₂H₄ Decomposition on Al₂O₃ Supported Ir Catalyst", **J. Catalysis** **43**, 220-233 (1976).
10. Falconer, J. L., Wentreck, P. R., Wise, H., "Surface Interactions on Alumina Supported Iridium Catalysts: Oxygen and Carbon Monoxide", **J. Catalysis** **45**, 248-255 (1976).
11. Falconer, J. L., Madix, R. J., "Desorption Rate Isotherms in Flash Desorption Analysis", **J. Catalysis** **48**, 262-268 (1977).
12. Falconer, J. L., Madix, R. J., "The Desorption Kinetics of Water and Formic Acid from Ni(110) Following Low Temperature Adsorption", **J. Catalysis** **51**, 47-63 (1978).
13. Zagli, A. E., Falconer, J. L., and Keenan, C. A., "Methanation on Supported Nickel Catalysts Using Temperature Programmed Heating", **J. Catalysis** **56**, 453-467 (1979).

14. Falconer, J. L., Zagli, A. E., "Adsorption and Methanation of Carbon Dioxide on a Nickel/Silica Catalyst", **J. Catalysis** **62**, 280-285 (1980).
15. Zagli, A. E., Falconer, J. L., "Carbon Dioxide Adsorption and Methanation on Ruthenium", **J. Catalysis** **69**, 1-8 (1981).
16. Zagli, A. E., Falconer, J. L., "Catalyst Preparation for Highly-Dispersed and Highly-Reduced Nickel Catalysts", **Applied Catalysis** **4**, 135-143 (1982).
17. Frank, T. C., Falconer, J. L., "Surface Composition of Copper-Silicon Alloys", **Applications of Surface Science** **14**, 359-374 (1983).
18. Falconer, J. L., Schwarz, J.A., "Temperature-Programmed Desorption and Reaction: Applications to Supported Catalysts", **Catalysis Reviews** **25**, 141-227 (1983).
19. Falconer, J. L., Bischke, S. D., Hanna, G. J., "Electron-Enhanced CO₂ Adsorption and Stabilization on Aluminum Films", **Surface Science** **131**, 455-462 (1983).
20. Ozdogan, S. Z., Gochis, P. D., Falconer, J. L., "Carbon and Carbon Monoxide Hydrogenation on Nickel; Support Effects", **J. Catalysis** **83**, 257-266 (1983).
21. Saber, J. M., Falconer, J. L., Brown L. F., "Carbon-Catalyzed Exchange of Carbon Dioxide and Potassium Carbonate", **JCS Chemical Communications** **6**, 376-378 (1984).
22. Pitts, J. R., Bischke, S. D., Falconer J. L., Czanderna, A. W., "Oxide Formation on Aluminum in the Presence of keV Electrons and CO₂", **J. Vacuum Science and Technology** **A2**, 1000-1003 (1984).
23. Kester, K. B., Falconer, J. L., "CO Methanation on Low Weight Loading Ni/Al₂O₃: Multiple Reaction Sites", **J. Catalysis** **89**, 380-391 (1984).
24. Saber, J. M., Falconer, J. L., Brown, L. F., "Carbon Dioxide Gasification of Carbon: Isotope Study of Carbonate Catalysis", **J. Catalysis** **90**, 65-74 (1984).
25. Bischke, S. D., Oen, A. C., Falconer, J. L., "CO₂ Oxidation of Aluminum: Electron Beam Effects", **Appl. Surface Science** **20**, 97-108 (1984).
26. Frank, T. C., Kester, K. B., Falconer, J. L., "Catalytic Formation of Silanes on Copper-Silicon Alloys", **J. Catalysis** **91**, 44-53 (1985).
27. Frank, T. C. Falconer, J. L., "Silane Formation on Silicon: Reaction Kinetics and Surface Analysis", **Langmuir** **1**, 104-110 (1985).
28. Bischke, S. D., Goodman, D. W., Falconer, J. L., "Carbon Monoxide Methanation over Nickel/Alumina Thin-Film Model Catalysts", **Surface Science** **150**, 351-357 (1985).
29. Chai, G. Y., Falconer, J. L., "Alkali Promoters on Supported Nickel: Effect of Support, Preparation and Alkali Concentration", **J. Catalysis** **93**, 152-160 (1985).
30. Frank, T. C., Kester, K. B., Falconer, J. L., "Surface Analysis of Methylchlorosilane Formation Catalysts", **J. Catalysis** **95**, 396-405 (1985).
31. Britten, J. A., Brown, L. F., Falconer, J. L., "Effect of Nonreacting Gases on the Desorption of Reaction-created CO from Graphite", **Carbon** **23**, 627-633 (1985).
32. Ersolmaz, C., Falconer, J. L., "Gasification of Carbon with BaCO₃", **Fuel** **65**, 400-406 (1986).
33. Kester, K. B., Zagli, E. and Falconer, J. L., "Methanation of CO and CO₂ on Ni/Al₂O₃ Catalysts: Effects of Ni Loading", **Applied Catalysis** **22**, 311-319 (1986).
34. Ramirez, W. F., Oen, A. C., Strobel, J. F., Falconer, J. L. Evans, H. E., "Surface Composition of Berea Sandstone", **SPEFE Journal**, p. 23-30, February (1986).
35. Saber, J. M., Falconer, J. L. Brown, L. F., "Interaction of Potassium Carbonate with Surface Oxides of Carbon," **Fuel** **65**, 1356-1359 (1986).
36. Falconer, J. L., Burger, L. C., Corfa, I. P., Wilson, K. G., "Temperature-Programmed Decomposition of Deuterated Formic Acid on Ni/SiO₂," **J. Catalysis** **104**, 424-433 (1987).
37. Saber, J. M., Falconer, J. L., Brown, L. F., "Isotope Exchange and the Sodium-Catalyzed CO₂ Gasification of Carbon," **JCS Chemical Comm.** 445-447 (1987).
38. Agarwala, J. P., Falconer, J. L., "Kinetics of Methylchlorosilane Formation on Zn-Promoted Cu₃Si," **Int. J. Chemical Kinetics** **19**, 519-537 (1987).
39. Shi, Q.-C., Falconer, J. L., Chen, T. P., "Chrysocolla as a Methanation Catalyst," **Applied Catalysis** **36**, 95-107 (1988).
40. Saber, J. M., Kester, K. B., Falconer, J. L. Brown, L. F., "A Mechanism for Sodium Catalyzed CO₂ Gasification of Carbon," **J. Catalysis** **109**, 329-346 (1988).
41. Corn, S. H., Falconer, J. L., Czanderna, A. W., "The Copper-Silicon Interface: Composition and Interdiffusion," **J. Vacuum Science and Technology** **A6**, 1012-1016 (1988).
42. Glugla, P. G., Bailey, K. M., Falconer, J. L., "Isotopic Identification of Surface Site Transfer on Ni/Al₂O₃ Catalysts," **J. Physical Chemistry** **92**, 4474-4478 (1988).

43. Sen, B., Falconer, J. L., "Detection of Activated Adsorption Sites and a CO-H Surface Complex on Ru/Al₂O₃," **J. Catalysis** **113**, 444-452 (1988).
44. Glugla, P. G., Bailey, K. M., Falconer, J. L., "Activated Formation of a H-CO Complex on Ni/Al₂O₃ Catalysts," **J. Catalysis** **115**, 24-33 (1989).
45. Sen, B., Falconer, J.L., "Spillover Sites on a 19% Ni/Al₂O₃ Catalyst," **J. Catalysis** **117**, 404-415 (1989).
46. Campbell, T. C., Falconer, J. L., "Carbon Dioxide Hydrogenation on Potassium-Promoted Nickel Catalysts," **Applied Catalysis**, **50**, 189-198 (1989).
47. Magrini, K. M., Falconer, J. L., Koel, B. E., "Direct Formation of (CH₃)₂HSiCl from Si and CH₃Cl," **J. Physical Chemistry** **93**, 5563-5568 (1989).
48. Chang, J. S., Adcock, J. P., Lauderback, L. L., Falconer, J. L., "TPR and SIMS Studies of CaCO₃ Catalyzed CO₂ Gasification of Carbon," **Carbon** **27**, 593-602 (1989).
49. Bailey, K. M., Campbell, T. K., Falconer, J. L., "Potassium Promotion of Ni/Al₂O₃ Catalysts," **Applied Catalysis** **54**, 159-175 (1989).
50. Chang, J. S., Lauderback, L. L., Falconer, J. L., "A SIMS Study of the Interaction of Potassium Carbonate with Carbon Black," **J. Catalysis** **122**, 1-21 (1990).
51. Sen, B., Falconer, J. L., "Site Transfer and a Support-Bound H-CO Complex on Ni/TiO₂", **J. Catalysis** **122**, 68-79 (1990).
52. Schwarz, J. A., Falconer, J. L., "Application of Transient Techniques: Methanation on Supported Nickel Catalysts", **Catalysis Today** **7**, 1-92 (1990).
53. Mao, T.F., Falconer, J.L., "Methanation Sites on a Pt/TiO₂ Catalyst," **J. Catalysis** **123**, 443-455 (1990).
54. Sen, B. and Falconer, J. L., "Effect of H₂ Pressure on TPR on Supported Ni Catalysts", **J. Catalysis** **125**, 35-44 (1990).
55. Sen, B., Falconer, J. L., Mao, T.-F., Yu, M., Flesner R. L., "Spillover of CO and H₂ onto Al₂O₃ Surfaces," **J. Catalysis** **126**, 465-476 (1990).
56. Chen, B., Falconer, J. L., Bailey, K. M., Sen, B., "Methanation Sites on a Low Loading Ni/Al₂O₃ Catalyst," **Applied Catalysis** **66**, 283-300 (1990).
57. Chen, B., Falconer, J. L., Chang, L., "Formation and Decomposition of a Methoxy Species on a Ni/Al₂O₃ Catalyst", **J. Catalysis** **127**, 732-743 (1991).
58. Chang, J.-S., Lauderback, L. L., Falconer, J. L., "AES and SIMS Analysis of Potassium/ Graphite Surfaces", **Carbon** **29**, 645-652 (1991).
59. Magrini, K. A., Gebhard, S. C., Koel, B. E., Falconer, J. L., "Methyl Chloride and Trichlorosilane Adsorption on Cu(110)", **Surface Science**, **248**, 93-103 (1991).
60. Hsiao, E. C., Falconer, J. L., "Adsorption Sites on Pd/Al₂O₃", **J. Catalysis** **132**, 145-156 (1991).
61. Flesner, R. L., Falconer, J. L., "Influence of Adsorbed CH₃O on CO Desorption from Ni/Al₂O₃", **J. Catalysis** **133**, 515-526 (1992).
62. Chen, B., Falconer, J. L., "Spillover Rate from Pd to Al₂O₃", **J. Catalysis** **134**, 737-741 (1992).
63. Jiang, L. Q., Koel, B. E. and Falconer, J. L., "Effects of Surface Modifiers (K_(a), O_(a), H_(a)) on the Adsorption Kinetics of CO on Pt(111)", **Surface Science** **273**, 273-284 (1992).
64. Kester, K. B., Chen, B., Falconer, J. L., "Temperature-Programmed Methanation on Pd/La₂O₃ and Pd/SiO₂ Catalysts", **J. Catalysis** **138**, 294-305 (1992).
65. Flesner, R. L., Falconer, J. L., "The Role of Spillover in Carbon Monoxide Hydrogenation over Alumina-Supported Platinum", **J. Catalysis** **139**, 421-434 (1993).
66. Gokhale, Y. V., Noble, R. D., Falconer, J. L., "Analysis of a Catalytic Membrane Reactor for Butane Dehydrogenation", **J. Membrane Science**, **77**, 197-206 (1993).
67. Noble, R. D., Falconer, J. L., Jia, M. D., Perkins, T. W., "Separations of Methanol-Hydrogen Mixtures using Inorganic Membranes", **J. Membrane Science** **79**, 123-125 (1993).
68. Chen, B., Falconer, J. L., "Trapping of CH₃O Formed from CO and H₂", **Catalysis Letters**, **19**, 55-65 (1993).
69. Chen, B., Falconer, J. L., "Alcohol Decomposition by Reverse Spillover", **J. Catalysis**, **144**, 214-226 (1993).
70. Jiang, L. Q., Avoyan, A., Koel, B. E., Falconer, J. L., "Methylcyclohexane to Benzene Conversion over K-Promoted Pt(111)", **J. American Chemical Society** **115**, 12,106-12,110 (1993).
71. Chen, B., Falconer, J. L., "Hydrogenation of Organic Oxygenates on Ni/Al₂O₃ and Ni/SiO₂", **J. Catalysis** **147**, 72-81 (1994).
72. Potochnik, S. J., Falconer, J. L., "The Effect of Zinc Promoter on Enhanced Diffusion During Catalytic Formation of Methylchlorosilanes", **J. Catalysis** **147**, 101-106 (1994).

73. Jia, M.-D., Chen, B., Noble, R. D., Falconer, J. L., "Ceramic-Zeolite Composite Membranes and their Application for separation of Vapor/Gas Mixtures", **J. Membrane Science**, **90**, 1-10 (1994).
74. Floquet, N., Yilmaz, S., Falconer, J. L., "Interaction of Copper Catalysts and Si(100) for the Direct Synthesis of Methylchlorosilanes", **J. Catalysis** **148**, 348-368 (1994).
75. Larson, S. A., Falconer, J. L., "Characterization of TiO₂ Photocatalysts used in Trichloroethene Oxidation", **Applied Catalysis B: Environmental** **4**, 325-342 (1994).
76. Bell, D. A., Falconer, J. L., Lu, Z., McConica, C. M., "Electron Beam-Induced Deposition of Tungsten", **J. Vacuum Science and Technology B**, **12**, 2976-2679 (1994).
77. Flesner, R. L., Falconer, J. L., "Hydrogen Exchange with Adsorbed Methanol and Methoxy on Nickel/Alumina", **J. Catalysis** **150**, 301-310 (1994).
78. Bell, D. A., Falconer, J. L., Lu, Z., McConica, C. M., "Corrosion of Reactor Wall Surfaces by WF₆", **J. Electrochem. Society** **141**, 2884-2888 (1994).
79. Conner, W. C. Jr., Falconer, J. L., "Spillover in Heterogeneous Catalysis", **Chemical Reviews** **95**, 759-788 (1995).
80. Bell, D. A., Falconer, J. L., McConica, C. M., "Desorption of Tungsten Fluorides from Tungsten", **J. Electrochem. Society** **142**, 2401-2404 (1995).
81. Gokhale, Y., Noble, R. D., Falconer, J. L., "Effect of Reactant Loss and Membrane Selectivity on a Dehydrogenation Reaction in a Membrane-Enclosed Catalytic Reactor", **J. Membrane Science** **103**, 235-242 (1995).
82. Noble, R.D., Falconer, J.L., "Silicalite-1 Composite Membranes" **Catalysis Today** **25**, 209-212 (1995).
83. Bai, C., Jia, M. D., Falconer, J. L., Noble, R. D., "Preparation and Separation Properties of Silicalite Composite Membranes", **J. Membrane Science** **105**, 79-87 (1995).
84. Larson, S. A., Widegren, J. A., Falconer, J. L. "Transient Studies of 2-Propanol Photocatalytic Oxidation on Titania", **J. Catalysis** **157**, 611-625 (1995).
85. Yilmaz, S., Floquet, N., Falconer, J. L., "Effect of Silicon Oxide Thickness on the Direct Reaction of Dimethyldichlorosilane", **J. Catalysis** **159**, 31-40 (1996).
86. Funke, H. H., Kovalchick, M. G. Falconer, J. L., Noble, R. D., "Separation of Hydrocarbon Isomer Vapors with Silicalite Zeolite Membranes", **Ind. Eng. Chem. Research** **35**, 1575-1582 (1996).
87. Cordi, E. M., Falconer, J. L., "Decomposition and Oxidation Of CH₃¹³CH₂OH on Al₂O₃, Pd/Al₂O₃, and PdO/Al₂O₃ Catalysts", **Catalysis Letters** **38**, 45-51 (1996).
88. Baertsch, C. D., Funke, H. H., Falconer, J. L., Noble, R. D., "Permeation of Aromatic Hydrocarbon Vapors through Silicalite Zeolite Membranes", **J. Physical Chemistry** **100**, 7676-7679 (1996).
89. Smetana, J. F., Falconer, J. L., Noble, R. D., "Separation of Methyl Ethyl Ketone from Water by Pervaporation Using a Silicalite Membrane", **J. Membrane Science** **114**, 127-130 (1996).
90. Funke, H. H., Argo, A. M., Baertsch, C. D., Falconer, J. L., Noble, R. D., "Separation of Close-Boiling Hydrocarbons with Silicalite Zeolite Membranes", **J. Chem. Soc., Faraday Transactions** **92**, 2499-2502 (1996).
91. Liu, Q., Noble, R. D., Falconer, J. L., Funke, H. H., "Organics/Water Separation by Pervaporation with a Zeolite Membranes", **J. Membrane Science** **117**, 163-174 (1996).
92. Cordi, E. M., Falconer, J. L., "Oxidation of Volatile Organic Compounds on Al₂O₃, Pd/Al₂O₃, and PdO/Al₂O₃ Catalysts", **J. Catalysis** **162**, 104-117 (1996).
93. Muggli, D. S., Larson S. A., and Falconer, J. L., "Photocatalytic Oxidation of Ethanol using Transient Reaction", **J. Physical Chemistry** **100**, 15,886-15,889 (1996).
94. Liu, Q., Rogut, J., Chen, B., Falconer, J. L., and Noble, R. D., "Improved Yield of CH₃OH from CH₄ Oxidation in a Non-Isothermal Reactor", **Fuel** **75**, 1748-1754 (1996).
95. Funke, H. H., Argo, A. M., Falconer, J. L., Noble, R.D., "Separations of Cyclic, Branched, and Linear Hydrocarbons Mixtures through Silicalite Membranes", **Ind. Eng. Chem. Research** **36**, 137-143 (1997).
96. Cordi, E. M., Falconer, J. L., "Oxidation of Volatile Organic Compounds on a Ag/Al₂O₃ Catalyst", **Applied Catalysis A** **151**, 179-191 (1997).
97. Larson, S. A., Falconer, J. L., "Initial Reaction Steps in Photocatalytic Oxidation of Aromatics", **Catalysis Letters** **44**, 57-65 (1997).
98. Coronas, J., Falconer, J. L., and Noble, R.D., "Characterization and Permeation Properties of ZSM-5 Composite Membranes", **AIChE Journal** **43**, 1797-1812 (1997).
99. Funke, H. H., Fender, K. R., Green, K. M., Wilwerding, J. L., Sweitzer, B. A., Falconer, J. L., Noble, R. D. "Influence of Adsorbed Molecules on The Permeation Properties of Silicalite Membranes", **J. Membrane Science** **129**, 77-82 (1997)

100. Cordi, E. M., O'Neill, P.J., Falconer, J. L., "Oxidation of Volatile Organic Compounds on CuO/Al₂O₃ Catalysts", **Applied Catalysis B: Environmental** **14**, 23-36 (1997).
101. Coronas, J., Noble, R.D. Falconer, J. L., "Separations of C₄ and C₆ Isomers in ZSM-5 Tubular Membranes", **Ind. Eng. Chem. Research** **37**, 166-176 (1998).
102. Muggli, D.S., McCue, J.T., Falconer, J.L., "Mechanism of the Photocatalytic Oxidation of Ethanol on TiO₂", **J. Catalysis** **173**, 470-483 (1998).
103. Muggli, D.S., Falconer, J.L., "Catalyst Design to Change Selectivity of Photocatalytic Oxidation", **J. Catalysis** **175**, 213-219 (1998).
104. Falconer, J.L. and Magrini-Bair, K.A. "Photocatalytic and Thermal Catalytic Oxidation of Acetaldehyde on Pt/TiO₂", **J. Catalysis** **179**, 171-178 (1998).
105. Cook, K.D., Bennett, K.H., Haddix, M.L., Keator, E.A., Falconer, J.L., Seebach, G.L., "Process Mass Spectrometric Monitoring of Isomer Hydrocarbon Gases", **J. Process Analytical Spectroscopy** **3**, 115-124 (1998).
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107. Lin, X, Falconer, J.L., Noble, R.D., "Parallel Pathways for Transport in ZSM-5 Zeolite Membranes", **Chemistry of Materials** **10**, 3716-3723 (1998).
108. Muggli, D.S., Keyser, S.A., Falconer, J.L., "Photocatalytic Decomposition of Acetic Acid on TiO₂", **Catalysis Letters** **55**, 129-132 (1998).
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