John L. Falconer

Mel and Virginia Clark Professor Emeritus
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), interactive simulations, interactive self-study modules, virtual laboratories, digital experiments, and course packages for chemical engineering courses.

Professional Experience: Mel and Virginia Clark Professor Emeritus, 1/2019-
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, 1/1998 - 3/1998
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 – 1996
Professor of Chemical Engineering, University of Colorado, 1985-2019
Associate Professor, 1980 - 1985. Assistant Professor, 1975 - 1980.
Postdoctoral Fellow, Stanford Research Institute, Menlo Park, CA, 9/1974 - 8/1975
Process Research Engineer, Fairchild Semiconductor R & D Lab, Palo Alto, CA, 5/1969- 8/1969

Military Service: Petroleum Laboratory Technician, U. S. Army, Fort Rucker, AL, 8/1969 - 6/1971

Honors and Awards: Thomas and Donna Edgar CACHE Award for Excellence in Chemical Engineering Education from ASEE ChED and CACHE (2021)
American Society of Engineering Education Fellow (2019)
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)
Campus graduation speech, University of Colorado Boulder (December 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: CACHE (Computer Aids for Chemical Engineering) Trustee, 2016-2028; *Chemical Engineering Education* Publication Board, 2017-2024; 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 Development:

Directed development of https://learncheme.com/. This website contains more than 2,450 ConcepTests, 2,150 screencast videos, 290 interactive simulations, 20 quiz-yourself simulations, 100 interactive self-study modules, 3 virtual laboratories, 15 digital experiments, 40 spreadsheets, 3 programming bootcamps, and 3 course packages for chemical engineering courses. The LearnChemE web site had more than one million page views in the last 12 months**.**

The screencast videos have been watched or downloaded more than 50 million times on YouTube (https://www.youtube.com/LearnChemE) and iTunesU, and our YouTube channel has more than 191,000 subscribers.

The interactive *Mathematica* simulations are also on the Wolfram Project Demonstration site: (https://demonstrations.wolfram.com/).

Directed development of the Virtual Catalytic Reactor Laboratory https://virtual-labs.learncheme.com/catalytic-reactor/ (2020). The virtual labs were accessed 27,000 times in 10 months.

Co-PI on NSF grant to develop the AIChE Concept Warehouse website and provided most of the original ConcepTests (https://conceptwarehouse.tufts.edu/cw/)

Carried out major revision in 2016 and continue to maintain the CACHE Teaching Resources Center website (https://cache.org/teaching-resources-center).

Journal Publications: *(Google Scholar cited more than 23,400 times, h-index = 85)*

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 N_2H_4 Decomposition on Al_20_3 Supported Ir Catalyst", **J. Catalysis 43**, 220-233 (1976).
10. Falconer, J. L., Wentrcek, 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 CO_2 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 CO_2", **J. Vacuum Science and Technology A2**, 1000-1003 (1984).
23. Kester, K. B., Falconer, J. L., "CO Methanation on Low Weight Loading Ni/Al_2O_3: 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., "CO_2 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 $BaCO_3$", **Fuel 65**, 400-406 (1986).
33. Kester, K. B., Zagli, E. and Falconer, J. L., "Methanation of CO and CO_2 on Ni/Al_2O_3 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/SiO_2," **J. Catalysis 104**, 424-433 (1987).
37. Saber, J. M., Falconer, J. L., Brown, L. F., "Isotope Exchange and the Sodium-Catalyzed CO_2 Gasification of Carbon," **JCS Chemical Comm**. 445-447 (1987).
38. Agarwala, J. P., Falconer, J. L., "Kinetics of Methylchlorosilane Formation on Zn-Promoted Cu_3Si," **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 CO_2 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/Al_2O_3 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/Al_2O_3," **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/Al_2O_3 Catalysts," **J. Catalysis 115**, 24-33 (1989).
45. Sen, B., Falconer, J.L., "Spillover Sites on a 19% Ni/Al_2O_3 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 $(CH_3)_2HSiCl$ from Si and CH_3Cl," **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 $CaCO_3$ Catalyzed CO_2 Gasification of Carbon," **Carbon 27**, 593-602 (1989).
49. Bailey, K. M., Campbell, T. K., Falconer, J. L., "Potassium Promotion of Ni/Al_2O_3 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/TiO_2", **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/TiO_2 Catalyst," **J. Catalysis 123,** 443-455 (1990).
54. Sen, B. and Falconer, J. L., "Effect of H_2 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 H_2 onto Al_2O_3 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/Al_2O_3 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/Al_2O_3 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/Al_2O_3", **J. Catalysis 132**, 145-156 (1991).
61. Flesner, R. L., Falconer, J. L., "Influence of Adsorbed CH_3O on CO Desorption from Ni/Al_2O_3", **J. Catalysis 133**, 515-526 (1992).
62. Chen, B., Falconer, J. L., "Spillover Rate from Pd to Al_2O_3", **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/La_2O_3 and Pd/SiO_2 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 CH_3O Formed from CO and H_2", **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/Al_2O_3 and Ni/SiO_2", **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 TiO_2 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 WF_6", **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 $CH_3{}^{13}CH_2OH$ on Al_2O_3, Pd/Al_2O_3, and PdO/Al_2O_3 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 Al_2O_3, Pd/Al_2O_3, and PdO/Al_2O_3 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 CH_3OH from CH_4 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/Al_2O_3 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/Al_2O_3 Catalysts", **Applied Catalysis B: Environmental 14,** 23-36 (1997).
101. Coronas, J., Noble, R.D. Falconer, J. L., "Separations of C_4 and C_6 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 TiO_2", **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/TiO_2", **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).
106. Poshusta, J.C., Vu, T.A., Falconer, J.L., Noble, R.D., "Synthesis and Permeation Properties of SAPO-34 Tubular Membranes", **Ind. Eng. Chem. Research 37**, 3924-3929 (1998).
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 TiO_2", **Catalysis Letters 55**, 129-132 (1998).
109. Muggli, D.S., Lowery, K. H., Falconer, J. L., "Identification of Adsorbed Species during Steady-State Photocatalytic Oxidation of Ethanol on TiO_2", **J. Catalysis 180**, 111-122 (1998).
110. Muggli, D.S., Falconer, J.L., "UV-Enhanced Exchange of O_2 with H_2O Adsorbed on TiO_2", **J. Catalysis 181**, 155-159 (1999).
111. Bennett, K.H., Cook, K. D., Falconer, J. L., Noble, R.D., Time-Dependent Permeance of Gas Mixtures Through Zeolite Membranes, **Analytical Chemistry 71**, 1016-1020 (1999).
112. Luo, S., Falconer, J.L. "Aldol Condensation of Acetaldehyde to form High Molecular Weight Compounds on TiO_2", **Catalysis Letters 57**, 89-93 (1999).
113. Poshusta, J.C., Falconer, J.L., Noble, R.D., "Temperature and Pressure Effects on CO_2 and CH_4 Permeation through MFI Zeolite Membranes", **J. Membrane Science 160**, 115-125 (1999).
114. Gump, C.J., Noble, R.D., Falconer, J.L., "Separation of Hexane Isomers through Nonzeolite Pores in ZSM-5 Zeolite Membranes", **Ind. Eng. Chem. Research 38**, 2775-2781 (1999).
115. Luo, S., Falconer, J.L., "Acetone and Acetaldehyde Oligomerization on TiO_2 Surfaces", **J. Catalysis 185**, 393-407 (1999).
116. Muggli, D.S., Falconer, J.L., "Parallel Pathways for Photocatalytic Decomposition of Acetic Acid on TiO_2", **J. Catalysis 187**, 230-237 (1999).
117. Tuan, V.A., Falconer, J.L., Noble, R.D., "Alkali-free ZSM-5 Membranes: Preparation Conditions and Separation Performance", **Ind. Eng. Chem. Research 38**, 3635-3646 (1999).
118. Poshusta, J.C. Tuan, V.A., Pape, E.A., Noble, R.D., Falconer, J.L., Separation of Light Gas Mixtures Using SAPO-34 Membranes", **AIChE Journal 46**, 779-789 (2000).
119. Muggli, D.S. and Falconer, J.L., "Role of Lattice Oxygen in Photocatalytic Oxidation on TiO_2". **J. Catalysis 191**, 318-325 (2000).

120. Tuan, V.A., Falconer, J.L., Noble, R.D., "Boron-Substituted B-ZSM-5 Membranes: Preparation and Separation Performance", **AIChE Journal 46**, 1201-1208 (2000)
121. Gump, C.J., Lin, X., Falconer, J.L., Noble, R.D., "Experimental Configuration and Adsorption Effects on the Permeation of C_4 Isomers through ZSM-5 Zeolite Membranes", **J. Membrane Science 173**, 35-52 (2000)
122. Flanders, C.L., Tuan, V.A., Noble, R.D., Falconer, J.L., "Separation of C_6 isomers by vapor permeation and pervaporation through ZSM-5 membranes", **J. Membrane Science 176**, 43-53 (2000)
123. Kumakiri, I., M. Nomura, T. Yamaguchi, S. Nakao, R.D. Noble, J.L. Falconer, "Preparation of Zeolite Membranes and Methods to Control the Intercyrstalline Pore Structure", **Function and Materials 20**, 48-57 (2000).
124. Aoki, K., Tuan, V.A., Falconer, J.L , Noble, R.D., "Gas Permeation Properties of Ion-Exchanged ZSM-5 Zeolite Membranes", **Microporous Mesoporous Materials 39**, 485-492 (2000).
125. Miremadi, B., Yadav, T., Zhang, J.Z., Falconer, J.L., " Low-Temperature Hydrogen Production Using Electrically-Activated Catalysts", **Chem. Comm**. **19**, 1875-1876 (2000).
126. Tuan, V.A., Noble, J.L., Falconer, J.L., "Isomorphous substitution of Al, Fe, B, and Ge into MFI-zeolite membranes" **Microporous Mesoporous Materials**, 41, 269-280 (2000).
127. Bennett, K.H., K.D. Cook, J.L. Falconer, and R.D. Noble, "Expanding Simultaneous Process Mass Spectrometric Analysis," **J. Process Anal. Chem. 5**, 42-49 (2000).
128. Lee, G.D., Falconer, J.L., "Participation of Lattice Oxygen in Photocatalytic Decomposition of Formic Acid on TiO_2 ", **Catalysis Letters**, **70**, 145-148 (2000).
129. Gump, C.J., Tuan, V.A., Noble, R.D., Falconer, J.L., "Aromatic Permeation through Crystalline Molecular Sieve Membranes", **Ind. Eng. Chem. Research 40**, 565-577 (2001)
130. Blount, M.C., Buchholz, J.A., Falconer, J.L., "Photocatalytic Decomposition of Aliphatic Alcohols, Acids, and Esters", **J. Catalysis 197**, 303-314 (2001).
131. Tuan, V. A., S. Li, R. D. Noble, J. L. Falconer, "Preparation and Pervaporation Properties of a MEL Zeolite Membrane", **Chem. Comm**., pp. 583-584 (2001).
132. Gade, S.K., V.A. Tuan, C.J. Gump, R.D. Noble, J.L. Falconer, "Highly Selective Separations of n-hexane from Branched, Cyclic, and Aromatic Isomer using B-ZSM-5 Membranes", **Chem. Comm**., p. 601-602 (2001).
133. Li, S., V. A. Tuan, J. L. Falconer, R. D. Noble, "Separation of 1,3-Propanediol from Glycerol and Glucose using a X-Type Zeolite Membrane", **Ind. Eng. Chem. Research 40**, 1952-1959 (2001).
134. Poshusta, J.C., Noble, R.D. Falconer, J.L., Characterization of SAPO-34 Membranes by Water Adsorption", **J. Membrane Science 186**, 25-40 (2001).
135. Lee, G.D., Tuan, V.A., Falconer, J.L., "Photocatalytic Oxidation and Decomposition of Acetic Acid on Titanium Silicalite", **Environmental Sci. Technol. 35**, 1252-1258 (2001)
136. Blount, M.C., Falconer, J.L., "Characterization of Adsorbed Species on TiO_2 after Photocatalytic Oxidation of Toluene", **J. Catalysis 200**, 21-33 (2001)
137. Li, S., V.A. Tuan, J. L. Falconer, R. D. Noble, "Effects of Zeolite Membrane Structure on the Separation of 1,3-Propanediol from Glycerol and Glucose by Pervaporation", **Chemistry of Materials 13**, 1865-1873 (2001).
138. Li, S., V.A. Tuan, J. L. Falconer, R. D. Noble, "Separation of 1,3-Propanediol from Solutions by Pervaporation using a ZSM-5 Zeolite Membrane", **J. Membrane Science 191**, 53-59 (2001).
139. Blount, M.C., D. H. Kim, J.L. Falconer, " Transparent Thin-Film TiO_2 Photocatalysts with High-Activity", **Environmental Sci. Technol. 35**, 2988-2994 (2001).
140. Li, S., V. A. Tuan, R. D. Noble, J.L. Falconer, "Pervaporation of Water/THF Mixtures using Zeolite Membranes" , **Ind. Eng. Chem. Research 40**, 4577-4585 (2001)
141. Kalipcilar, H., J. L. Falconer, R. D. Noble "Preparation of B-ZSM-5 Membranes on a Monolith Support" **J. Membrane Science 194**, 141-144 (2001)
142. Li, S., V.A. Tuan, R.D. Noble, J. L. Falconer, "A Ge-Substituted ZSM-5 Zeolite Membrane for Separation of Acetic Acid from Water", **Ind. Eng. Chem. Research 40**, 6165-6171 (2001)**.**
143. Tuan, V. A., S. Li, J. L. Falconer, R. D. Noble, "Separating Organics from Water by Pervaporation with Isomorphously-Substituted MFI Zeolite Membranes", **J. Membrane Science 196**, 111-123 (2002).
144. Li, S., V. A. Tuan, J. L. Falconer, R. D. Noble, "ZSM-11 Membranes: Characterization and Pervaporation Performance for Alcohol/Water Mixtures" **AIChE Journal 48**, 269-278 (2002).
145. Tanaka, K., H. Kita, K.-I. Okamoto, R.D. Noble, J.L. Falconer, "Isotopic-Transient Permeation Measurements in Steady-State Pervaporation through Polymeric Membranes", **J. Membrane Science 197**, 173-183 (2002).

146. V. A. Tuan, S. Li, J. L. Falconer, R. D. Noble, "In-Situ Crystallization of Beta Zeolite Membranes and their Permeation and Separation Properties" **Chemistry of Materials 14**, 489-492 (2002).
147. T.C. Bowen, J.L. Falconer, R.D. Noble, A.I. Skoulidas, D.S. Sholl, "A Comparison of Atomistic Simulations and Experimental Measurements of Light Gas Permeation Through Zeolite Membranes" **Ind. Eng. Chem. Research 41**, 1641-1650 (2002).
148. Li, S., V. A. Tuan, J.L. Falconer, R. D. Noble, "X-Type Zeolite Membranes: Preparation, Characterization and Pervaporation Separation Performance", **Microporous Mesoporous Materials 53**, 59-70 (2002).
149. Gardner, T. Q., A. I. Flores, R. D. Noble, J. L. Falconer, "Measurement of Adsorption and Diffusion Properties of H-ZSM-5 Zeolite Membranes by a Transient Technique", **AIChE Journal 48**, 1155-1167 (2002).
150. Kalipcilar, H., T. C. Bowen, J.L. Falconer, R.D. Noble, "Synthesis of SSZ-13 type zeolite membranes on tubular supports", **Chemistry of Materials 14**, 3458-3464 (2002).
151. Gardner, T. Q., J. B. Lee, R. D. Noble, J.L. Falconer, "Adsorption and Diffusion Properties of Butanes in ZSM-5 Zeolite Membranes" **Ind. Eng. Chem. Research 41**, 4094-4105 (2002).
152. Blount, M.C., Falconer, J.L., "Steady State Surface Species during Toluene Photocatalysis", **Applied Catalysis B: Environmental 39**, 39-50 (2002)
153. Gardner, T.Q., J. L. Falconer, R.D. Noble, "Adsorption and diffusion properties of zeolite membranes by transient permeation", **Desalination 147**, 435-440 (2002).
154. Bowen, T.C., S. Li, V.A. Tuan, J.L. Falconer, R.D. Noble, "Pervaporation of aqueous organic mixtures through Ge-ZSM-5 zeolite membranes", **Desalination 147**, 327-329 (2002)
155. Bowen, T.C., H. Kalipcilar, J.L. Falconer, R.D. Noble, "Separation of C_4 and C_6 isomer mixtures and alcohol-water solutions by monolith supported B-ZSM-5 membranes", **Desalination 147**, 331-332 (2002).
156. Kalipcilar, H., S.K. Gade, R.D. Noble, J.L. Falconer, "Synthesis and Separation Properties of B-ZSM-5 Zeolite Membranes on Monolith Supports", **J. Membrane Science 210**, 113-127 (2002)
157. Li, S., Tuan, V.A., Noble, R.D., Falconer, J.L., "Properties and Separation Performance of Ge-ZSM-5 membranes" **Microporous Mesoporous Materials 58**, 137-154 (2003).
158. Bowen, T. C., H. Kalipcilar, J.L. Falconer, R.D. Noble, "Pervaporation of organic/water mixtures through B-ZSM-5 zeolite membranes on monolith supports", **J. Membrane Science 215**, 235-247 (2003)
159. Gardner, T. Q., J.L. Falconer, R.D. Noble, M. Zieverink, "Analysis of Transient Permeation Fluxes into and out Membranes for Adsorption Measurements" **Chem. Eng. Science 58**, 2103-2112 (2003).
160. Tuan, V. A., L. L. Weber, J. L. Falconer, R. D. Noble, "Synthesis of B-Substituted Beta Zeolite Membranes", **Ind. Eng. Chem. Research 42**, 3019-3021 (2003).
161. Tuan, V.A., S. Li, R.D. Noble, J.L. Falconer, "MTBE Adsorption on All-Silica Zeolite Beta", **Environmental Sci. Technol. 37**, 4007-4010 (2003).
162. Sommer, S., T. Melin, J.L. Falconer, R.D. Noble, "Transport of C_6 Isomers through ZSM-5 Zeolite Membranes" **J. Membrane Science 224**, 51-67 (2003).
163. Bowen, T.C., S. Li, J.L. Falconer, R.D. Noble, "Driving Force for Pervaporation through Zeolite Membranes", **J. Membrane Science 225**, 165-176 (2003).
164. Skoulidas, A.I., T.C. Bowen, J.L. Falconer, R.D. Noble, D.S. Sholl, "Comparing Atomistic Simulations and Experimental Measurements for CH_4/CF_4 Mixture Permeation through Silicalite Membranes", **J. Membrane Science 227**, 123-136 (2003).
165. Preis, S., J.L. Falconer, "Gas-Phase Photocatalytic Oxidation of Motor Fuel Oxygenated Additives", **J. Water Science Technol. 49**, 141-145 (2004).
166. Kulprathipanja, A. and J.L. Falconer, "Partial Oxidation of Methanol for Hydrogen Production using ITO/Al_2O_3 Nanoparticle Catalysts", **Applied Catalysis A 261**, 77-86 (2004).
167. Bowen, T.C., Wyss, J.C., Noble, R.D., Falconer, J.L., "Inhibition during Multicomponent Diffusion through ZSM-5 Zeolite", **Ind. Eng. Chem. Research 43**, 2598-2601 (2004).
168. Bowen, T.C., Wyss, J.C., Noble, R.D., Falconer, J.L, "Measurements of Diffusion through a Zeolite Membrane using Isotopic-Transient Pervaporation", **Microporous Mesoporous Materials 71**, 199-210 (2004).
169. Kulprathipanja, A., G. O. Alptekin, J.L. Falconer, J.D. Way, "The Effect of Water Gas Shift Gases on Pd-Cu Alloy Membranes", **Ind. Eng. Chem. Research 43**, 4188-4198 (2004).
170. Li, S., J.L. Falconer, R.D. Noble, "SAPO-34 Membranes for CO_2/CH_4 Separation", **J. Membrane Science 241**, 121-135 (2004).
171. Gardner, T.Q., J.L. Falconer, R.D. Noble, "Characterization of ZSM-5 and ZSM-11 Zeolite Membranes by Transient Permeation of Butanes", **AIChE Journal 50**, 2816-2834 (2004).

172. Bowen, T.C., R.D. Noble, J.L. Falconer, "Fundamentals and Applications of Pervaporation through Zeolite Membranes", **J. Membrane Science 245**, 1-33 (2004).
173. Li, S., G. Alvarado, J.L. Falconer, R.D. Noble, "Effect of Impurities on CO_2/CH_4 Separation in SAPO-34 Membranes", **J. Membrane Science 251**, 59-66 (2005)
174. Kulprathipanja, A., G. O. Alptekin, J.L. Falconer, and J.D. Way, "Pd and Pd-Cu Membranes: Inhibition of H_2 Permeation by H_2S", **J. Membrane Science 254**, 49-62 (2005).
175. Li, S., Martinek, J.G., Falconer, J.L., Noble, R.D., "High-Pressure CO_2/CH_4 Separation Using SAPO-34 Membranes " **Ind. Eng. Chem. Research 44**, 3220-3228 (2005).
176. M. Hong, J.L. Falconer, R.D. Noble, "Modification of B-ZSM-5 and SAPO-34 Membranes for H_2 Separation by Catalytic Cracking of Methyldiethoxysilane", **Ind. Eng. Chem. Research 44**, 4035-4041 (2005).
177. M. Yu, J.L. Falconer, R.D. Noble, "Adsorption of Liquid Mixtures on Silicalite-1 Zeolite: a Density-Bottle Method", **Langmuir 21**, 7390-7397 (2005).
178. Arruebo, M., J.L. Falconer, R. D. Noble, "Separation of binary C_5 and C_6 hydrocarbon mixtures through MFI zeolite membranes", **J. Membrane Science 269**, 171-176 (2006).
178. S. Preis, J.L. Falconer, R. del Prado Asensio, N.C. Santiago, A. Kachina, J. Kallas, "Photocatalytic oxidation of gas-phase methyl *tert*-butyl ether and *tert*-butyl alcohol", **Applied Catalysis B: Environmental**, **64**, 79-87 (2006).
179. J.G. Martinek, T.Q. Gardner, R.D. Noble, J.L. Falconer. "Modeling Transient Permeation of Binary Mixtures through Zeolite Membranes", **Ind. Eng. Chem. Research 45**, 6032-6043 (2006).
180. S. Li, J. L. Falconer, and R.D. Noble, "Improved SAPO-34 membranes for CO_2/CH_4 separations", **Advanced Materials 17**, 2601-2603 (2006).
181. M. Yu, J. Hunter, J.L. Falconer, R.D. Noble, "Adsorption of benzene mixtures on silicalite-1 and NaX zeolites", **Microporous Mesoporous Materials 96**, 376-385 (2006).
182. S. Li, J.L. Falconer, R.D. Noble, R. Krishna, "Interpreting Unary, Binary, and Ternary Mixture Permeation across SAPO-34 Membrane with Loading-Dependent Maxwell-Stefan Equations, **J. Physical Chemistry C 111**, 5075-5082 (2007).
183. M. Yu, J.L. Falconer, R.D. Noble, R. Krishna, "Modeling Transient Behavior of Polar Organic Mixtures across a MFI Zeolite Membrane using Maxwell-Stefan Equations", **J. Membrane Science 293**, 167-173 (2007).
184. S. Li, R. Krishna, J.L. Falconer, R.D. Noble, "Modeling Permeation of CO_2-CH_4 and CO_2-N_2 Mixtures across SAPO-34 Membrane with Maxwell-Stefan Equations", **Ind. Eng. Chem. Research 46**, 3904-3911 (2007).
185. M. Yu, T.J. Amundsen, M. Hong, J. L. Falconer, R.D. Noble, "Flexible Nanostructure of MFI Zeolite Membranes " **J. Membrane Science 298**, 182 -189 (2007).
186. M. Yu, J.L. Falconer, T.J. Amundsen, M. Hong, R.D. Noble. "A Controllable Nanometer-Sized Valve", **Advanced Materials 19**, 3032-3036 (2007).
187. M. Hong, S. Li, J.L. Falconer, R.D. Noble, "Ion-Exchanged SAPO-34 Zeolite Crystals and Membranes" **Microporous Mesoporous Materials 106**, 140-146 (2007).
188. T.Q. Gardner, J.G. Martinek, J.L. Falconer, and R.D. Noble, "Enhanced Flux through Double-Sided Membranes", **J. Membrane Science 303,** 112-117 (2007).
189. M. Hong, S. Li, .J.L. Falconer, R.D. Noble, "Hydrogen Purification using a SAPO-34 Membrane", **J. Membrane Science 307**, 277-283 (2008).
190. M.A. Carreon, S. Li, J.L. Falconer, R.D. Noble, "SAPO-34 Seeds and Membranes Prepared using Multiple Templates", **Advanced Materials 20**, 729-732 (2008)
191. M. Yu, S. Lu, J.L. Falconer, R.D. Noble, "Reversible H_2 Storage with a SPO-34 Membrane" **Microporous Mesoporous Materials 110**, 579-582 (2008).
192. S. Li, J.L. Falconer, R.D. Noble, "SAPO-34 Membranes for CO_2/CH_4 Separations: Effect of Si/Al Ratio", **Microporous Mesoporous Materials 110**, 310-317 (2008).
193. M. Yu, J. Wyss, R.D. Noble, J.L. Falconer, "2,2-Dimethylbutane Adsorption and Diffusion in Zeolite Crystals and Membranes" **Microporous Mesoporous Materials 111**, 24-31 (2008)
194. M.A. Carreon, S. Li, J.L. Falconer, R.D. Noble, "Alumina Supported SAPO-34 Membranes for CO_2/CH_4 Separation", **J. American Chemical Society 130**, 5412-5413 (2008).
195. R. Krishna, S. Li, J.M. van Baten, J.L. Falconer, R. D. Noble, "Investigation of slowing-down and speeding-up effects in binary mixture permeation across SAPO-34 and MFI membranes" **Separation & Purification Technology 60**, 230-236 (2008).

196. M. Yu, J.L. Falconer, R.D. Noble, "Characterizing non-zeolitic pore volume of MFI membranes by temperature-programmed desorption", **Microporous Mesoporous Materials 113**, 224-230 (2008).
197. M. Yu, J.L. Falconer, R.D. Noble, "Characterizing Non-Zeolitic Pores in MFI Zeolite Membranes", **Ind. Eng. Chem. Research 47**, 3943-3948 (2008).
198. J.B. Lee, H.H. Funke, R.D. Noble, J.L. Falconer, "High Selectivities in Defective MFI Membranes", **J. Membrane Science 321**, 309-315 (2008).
199. H. Funke, A. Derk, J.L. Falconer, "Converting Methane to Liquid Fuels with UV Irradiation", **Ind. Eng. Chem. Research 47**, 6568- 6572 (2008).
200. K.D. Hammond, M. Hong, G.A. Tompsett, S.M. Auerbach, J.L. Falconer, W.C. Conner, Jr., "High Resolution Physical Adsorption on Supported Borosilicate MFI Zeolites: Comparison with Powdered Samples" **J. Membrane Science 325**, 413-419 (2008).
201. S.G. Sorenson, J.R. Smyth, M. Kocirik, A. Zikanova, J.B. Lee, J.L. Falconer, R.D. Noble, "Adsorbate-Induced Expansion of Silicalite-1 Crystals", **Ind. Eng. Chem. Research 47,** 9611-9616 (2008)
202. M. Yu, H. Funke, J.L. Falconer, R.D. Noble, "High Density, Vertically-Aligned Carbon Nanotube Membranes", **ACS Nano 9**, 225-229 (2009).
203. B. Tokay, J.L. Falconer, R.D. Noble, "Alcohol and Water Adsorption and Capillary Condensation in MFI Zeolite Membranes", **J. Membrane Science 334**, 23-29 (2009).
204. A. Avila, Y. Zhang, H.H. Funke, J.L. Falconer, R.D. Noble, "Concentration polarization in SAPO-34 membranes at high pressures", **J. Membrane Science 335**, 32-36 (2009).
205. J.B. Lee, H.H. Funke, R.D. Noble, J.L. Falconer, "Adsorption-Induced Expansion of Defects in MFI Membranes", **J. Membrane Science 341**, 238-245 (2009).
206. S.G. Sorenson, J.R. Smyth, R.D. Noble, J.L. Falconer, "Correlation of Crystal Lattice Expansion and Membrane Properties for MFI Zeolites" **Ind. Eng. Chem. Research 48**, 10021-10024 (2009).
207. Y. Zhang, S. Li, M.A. Carreon, H.H. Funke R.D. Noble, J.L. Falconer, "Scale-up of SAPO-34 Membranes for CO_2/CH_4 Separation", **J. Membrane Science 352**, 7-13 **(**2010).
208. W.T. Gibbons, Y. Zhang, J.L. Falconer, R.D. Noble, "Inhibiting Crystal Swelling in MFI Zeolite Membranes", **J. Membrane Science 357**, 54-61 (2010).
209. S.G. Sorenson, E.A. Payzant, R.D. Noble, J.L. Falconer, "Influence of Crystal Expansion/ Contraction on Zeolite Membrane Permeation" **J. Membrane Science 357**, 98-104 (2010).
210. Y. Zhang, A.M. Avila, H.F. Funke, J.L. Falconer, R.D. Noble, "Blocking Defects in SAPO-34 Membranes with Cyclodextrin" **J. Membrane Science 358,** 7-12 (2010).
211. M. Yu, H.H. Funke, J.L. Falconer, R.D. Noble, "Gated Ion Transport through Dense Carbon Nanotube Membranes" **J. American Chemical Society 132**, 8285-8290 (2010).
212. Y. Zhang, B. Tokay, H.H. Funke, J.L. Falconer, R.D. Noble, "Template Removal from SAPO-34 Crystals and Membranes", **J. Membrane Science 363**, 29-35 (2010).
213. K.L. Miller, C.W. Lee, J.L. Falconer, J.W. Medlin, "Effect of Water on Formic Acid Photocatalytic Decomposition on TiO_2 and Pt/TiO_2" **J. Catalysis 275,** 294-299 (2010).
214. S. G. Sorenson, A. Payzant, W.T. Gibbons, B. Soydas, H. Kita, E. R.D. Noble, J.L. Falconer, "Influence of Zeolite Crystal Expansion/Contraction on NaA Zeolite Membrane Separations", **J. Membrane Science**, 366, 413-420 (2011).
215. M. Yu, J.L. Falconer, R.D. Noble, "Hydrogen Separation using Ultrathin Microporous Al_2O_3 Supported by SAPO-34 Membranes" **J. American Chemical Society 133**, 1748-1750 (2011).
216. K.L. Miller, C.B. Musgrave, J.L. Falconer, J.W. Medlin, "Effects of Water and Formic Acid Adsorption on the Electronic Structure of Anatase $TiO_2(101)$" **J. Physical Chemistry C 115**, 2738-2749 (2011).
217. K.L. Miller, J.L. Falconer, J.W. Medlin, "Effect of Water on the Adsorbed Structure of Formic Acid on TiO_2 Anatase (101)" **J. Catalysis 278,** 321-328 (2011).
218. X. Liang, J. Li, M. Yu, C.N. McMurray, J.L. Falconer, A.W. Weimer, "Stabilization of supported metal nanoparticles using an ultrathin porous shell" **ACS Catalysis 1,** 1162-1165 (2011).
219. M. Yu, R.D. Noble, J.L. Falconer, Zeolite Membranes: Microstructure Characterization and Permeation Measurements, **Accounts Chemical Research 44**, 1196-1206 (2011).
220. H.H. Funke, B. Tokay, Y. Zhang, R.F. Zhou, E. Ping, J.L. Falconer, R.D. Noble, "Spatially–Resolved Gas Permeation through SAPO–34 Membranes" **J. Membrane Science 409**, 212-221 (2012).
221. E. Ping, R. Zhou, H.H. Funke, J.L. Falconer, R.D. Noble, "Seeded-gel Synthesis of SAPO-34 single channel and monolith membranes for CO_2/CH_4 separations" **J. Membrane Science 415,** 770-775 (2012).
222. T.D. Gould, A.M. Lubers, B. Neltner, A.W. Weimer, J.L. Falconer, J.W. Medlin, "Synthesis of Supported Ni Catalysts by Atomic Layer Deposition" **J. Catalysis 303**, 9-15 (2013).

223. R. Zhou, E.W. Ping, H.H. Funke, J.L. Falconer, R.D. Noble, "Improving SAPO-34 Membrane Synthesis", **J. Membrane Science 444**, 384-393 (2013).
224. C.T. Nam, J.L. Falconer, L.M. Duc, W.-D. Yang, "Morphology, Structure and Adsorption of Titanate Nanotubes prepared using a Solvothermal Method", **Materials Research Bulletin 51**, 49-55 (2014)
225. H.H. Funke, M. Chen, A. Prakash, J.L. Falconer, R.D. Noble, "Separating Molecules by Size in SAPO-34 Membranes", **J. Membrane Science 456**, 185-191 (2014).
226. T.D. Gould, A.W. Weimer, J.L. Falconer, J.W. Medlin, "Stabilizing Ni Catalysts by Molecular Layer Deposition for Harsh Dry Reforming Conditions", **ACS Catalysis 4,** 2714-2717 (2014).
227. T. Wu, M. Diaz, Y. Zheng, R. Zhou, H.H. Funke, J.L. Falconer, R.D. Noble, "Influence of Propane on CO_2/CH_4 and N_2/CH_4 Separations in CHA Zeolite Membranes", **J. Membrane Science 473**, 201-209 (2015).
228. T.D. Gould, A.W. Weimer, J.L. Falconer, J.W. Medlin, "Enhanced Dry Reforming on Ni and Ni-Pt Catalysts Synthesized by Atomic Layer Deposition", **Applied Catalysis A 492**, 107-116 (2015).
229. T.D. Gould, A. Lubers, A. Corpus, A.W. Weimer, J.L. Falconer, J.W. Medlin, "Controlling Nanoscale Properties of Supported Platinum Catalysts through Atomic Layer Deposition", **ACS Catalysis 5**, 1344-1352 (2015).
230. S.A. Van Norman, J.W. Tringe, J.D. Sain, R. Yang, J.L. Falconer, A.W. Weimer, "Using atomic layer deposited tungsten to increase thermal conductivity of a packed bed", **Applied Physics Letters 106**, 153102-1 to 153102-5 (2015).
231. H.H. Funke, Y. Luo, M.Z. Chen, G.C. Anderson, J.L. Falconer, R.D. Noble, "Measuring Mixture Adsorption by Temperature-Programmed Desorption", **Ind. Eng. Chem. Research 54**, 5159-5164 (2015).
232. N. Chisholm, H.H. Funke, J.L. Falconer, R.D. Noble, "Increasing H_2/N_2 separation selectivity in CHA zeolite membranes by adding a third gas", **J. Membrane Science 496**, 118-124 (2015).
233. Y. Luo, H.H. Funke, J.L. Falconer, R. D. Noble, "Adsorption of CO_2, CH_4, C_3H_8, and H_2O in SSZ-13, SAPO-34, and T-Type Zeolites", **Ind. Eng. Chem. Research 55**, 9749-9757 (2016)
234. N.O. Chisholm, H.H. Funke, R.D. Noble, J.L. Falconer, "Effect of toluene adsorption on permeation through SAPO-34 membranes", **J. Membrane Science 560**, 108-114 (2018).
235. N.O. Chisholm, H.H. Funke, R.D. Noble, J.L. Falconer, "Carbon Dioxide/Alkane Separations in a SSZ-13 Membrane" **J. Membrane Science 568**, 17-21 (2018).
236. L.D. Ellis, S.T. Parker, J. Hu, S.F. Zaccarine, M.J. Stellato, H.H. Funke, C. Sievers, S. Pylypenko, J.L. Falconer, J.W. Medlin, "Tuning gas adsorption selectivity and diffusion rates in zeolite 5A with phosphonic acid monolayers" **Cell Reports Physical Science**, 100036 (2020).
237. X. Zhou, J.L. Falconer, J.W. Medlin, "Mechanism of Selectivity Control for Zeolites Modified with Organic Monolayers" **Microporous and Mesoporous Materials 337**, 111913, 1-7 (2022).
238. X. Zhou, J.L. Falconer, J.W. Medlin, "Competitive Adsorption between Propylene and Propane on Zeolite 5A and the influence of Organic Phosphonic Acid Coatings", **Separation and Purification Technology 346**, 127435 (2024).
239. X. Zhou, J.L. Falconer, J.W. Medlin, "Organic-Coated Zeolites for Selective Gas Adsorption: Effect of Functional Group Identity and Coating Density" **Separation and Purification Technology 363,** 132040 (2025).

Patents:

1. M.D. Jia, R.D. Noble, and J.L. Falconer, "Ceramic-Zeolite Composite Membranes and Use for Separation of Vapor/Gas Mixtures", U.S. Patent No. 5,464,798, November 7, 1995.
2. J. L. Falconer, S.M. George, A.W. Ott, J.W. Klaus, R.D. Noble, and H.H. Funke, "Modification of Zeolite or Molecular Sieve Membranes Using Atomic Layer Controlled Chemical Vapor Deposition", U.S. Patent No. 6,043,177, March 28, 2000.
3. H.H. Funke, J.W. Klaus, S.M. George, A.W. Ott, J.L. Falconer, and R.D. Noble, "Modified Zeolite Membrane", U.S. Patent No. 6,051,517, April 18, 2000.
4. V.A. Tuan, R.D. Noble, and J.L. Falconer, "Isomorphously Substituted Molecular Sieve Membranes", U.S. Patent No. 6,767,384 , July 27, 2004.
5. V.A. Tuan, R.D. Noble, and J.L. Falconer, "Isomorphously Substituted Molecular Sieve Membranes", U.S. Patent No. 7,070,734, July 11, 2006.
6. S. Li, S. Arvidson, J.L. Falconer, R.D. Noble, "High-Selectivity Supported SAPO Membranes", U.S. Patent 7,316,727, January 8, 2008.
7. S. Li, J.L. Falconer, R.D. Noble "Membranes for Highly Selective Separations" Eurasian Patent No. 011728, August 28, 2009.
8. S. Li, J.L. Falconer, R.D. Noble, "High Selectivity Supported SAPO Membranes" Singapore Patent 200606129-5, February 27, 2009.

9. S. Li, J.L. Falconer, R.D. Noble, “High Selectivity Supported SAPO Membranes” Canada, 2009.
10. S. Li, J.L. Falconer, R.D. Noble “Membranes for Highly Selective Separations”, U.S. Patent 7,828,875, November 9, 2010.
11. S. Li, S.A. Arvidson, J.L. Falconer, R.D. Noble, Membranes for Highly Selective Separations”, U.S. Patent 8.067,327, November 29, 2011.
12. S. Li, J.L. Falconer, R.D. Noble, “High Selectivity Supported SAPO Membranes” Australia Patent 2007249452, April 5, 2012.
13. S. Li, J.L. Falconer, R.D. Noble, “High Selectivity Supported SAPO Membranes” Indonesia Patent W0020080351, September 18, 2012.
14. J.L. Falconer, M. Carreon, S. Li, R.D. Noble, “Synthesis of Zeolites and Zeolite Membranes Using Multiple Structure Directing Agents”, U.S. Patent 8,302,782, November 6, 2012.
15. S. Li, J.L. Falconer, R.D. Noble, “High Flux and Selectivity SAPO-34 Membranes for CO_2/CH_4 Separations”, U.S. Patent 8,409,326, April 2, 2013.
16. S. Li, J.L. Falconer, R.D. Noble, “High Flux and Selectivity SAPO-34 Membranes for CO_2/CH_4 Separations”, Eurasia Patent 018045, May 30, 2013.
17. S. Li, J.L. Falconer, R.D. Noble, “High Flux and Selectivity SAPO-34 Membranes for CO_2/CH_4 Separations”, Council for the Arab States of the Gulf, Patent 0002334, February 17, 2013.
18. S. Li, J.L. Falconer, R.D. Noble, “High Flux and Selectivity SAPO-34 Membranes for CO_2/CH_4 Separations”, `Australia Patent 2,650,846, February 25, 2014
19. J.L. Falconer, R.D. Noble, B. Tokay, Y. Zhang, “High flux SAPO-34 membranes for CO_2/CH_4 Separation and Template Removal Method”, US Patent 8,679,227, March 25, 2014.
20. M.A. Carreon, Z. Diaz, J.L. Falconer, H.H. Funke, S. Li, B.D. Murray, R.D. Noble , P.J. Williams, “Method of Making a High-Performance Supported Gas Separation Molecular Sieve Membrane Using a Shortened Crystallization Time.”, U.S. Patent 8,685,143, April 1, 2014.
21. A.W. Weimer, X. Liang, J. Li, J.L. Falconer, M. Yu, “Ultra-thin metal oxide and carbon-metal oxide films prepared by atomic layer deposition (ALD).” US Patent 9090971, July 28, 2015.
22. J.L. Falconer, J.W. Medlin, L.D. Ellis, H.H. Funke, S. Parker, “Functionalzation of Zeolites”, US Patent 11,918,974, March 5, 2024.

Educational Publications (peer reviewed)

1. J.L. Falconer and Britten, J. A., "Kinetics and Catalysis Demonstrations", **Chemical Engineering Education 18**, 140-144 (1984).
2. L.F. Brown and Falconer, J. L., "Simplifying Chemical Reactor Design By Using Molar Quantities Instead of Fractional Conversion," **Chemical Engineering Education 21**, 24-29 (1987).
3. J.L. Falconer, "The Influence of Catalysts on Thermodynamic Equilibrium", **Chemical Engineering Education 26**, 180-182 (1992).
4. J.L. Falconer and Huvard, G.S., “Important Concepts in an Undergraduate Kinetics/Reactor Design Course”, **Chemical Engineering Education 33**, 138-141 (1999).
5. J.L. Falconer, “Use of ConcepTests and Instant Feedback in Thermodynamics”, **Chemical Engineering Education 38**, 64-67 (2004).
6. J.L. Falconer, “Conceptests for a Chemical Engineering Thermodynamics Course”, **Chemical Engineering Education 41**, 107-114 (2007).
7. J.L. Falconer, J. deGrazia, J.W. Medlin, M. Holmberg, “Using Screencasts in Chemical Engineering Courses”, **Chemical Engineering Education 43**, 302-305 (2009).
8. J.L. Falconer, G. Nicodemus, J. deGrazia, J.W. Medlin, “Chemical Engineering Screencasts”, **Chemical Engineering Education 46**, 58-62 (2012).
9. M.D. Koretsky, J.L. Falconer, B.J. Brooks, D.M. Gilbuena, D.L. Silverstein, C. Smith , R.L. Miller, M. Miletic. “The AIChE Concept Warehouse: A Web-Based Tool to Promote Concept-Based Instruction”, **Advances in Engineering Education** 4, 1-27 (2014).
10. J.L. Falconer and G. Nicodemus, “Interactive Mathematica Simulations in Chemical Engineering Courses”, **Chemical Engineering Education 48(3)**, 165-174 (2014).
11. J.L. Falconer, J. Will Medlin, G. Nicodemus, K. Hoeferkamp, J. deGrazia, “A Thermodynamics Course Package in OneNote”, **Chemical Engineering Education 48(4),** 209-214 (2014).
12. J.L. Falconer, “Combining Interactive Thermodynamics Simulations with Screencasts and ConcepTests”, **Chemical Engineering Education 50(1)**, 63-69 (2016).
13. J.L. Falconer, “Why Not Try Active Learning?”, **AIChEJ 62**, 4174-4181 (2016) (invited article).
14. J.L. Falconer, M.A. Henson, “Where to Start when Teaching a New Course or Updating an Older Course?”, **Chemical Engineering Education 52**, 192 (2018).

15. J. L. Falconer, J. deGrazia, J.W. Medlin, K. McDanel, "LearnChemE.com: Teaching/Learning Resources for Chemical Engineering", **Chemical Engineering Education 52**, 182-186 (2018).
16. J.L. Falconer, J. deGrazia, "Grading exams and homework more efficiently and effectively", **Chemical Engineering Education 53(2),** 100 (2019).
17. J.L. Falconer, "Interactive Quiz-Yourself Simulations" **Chemical Engineering Education 53,** 220-222 (2019).
18. J.L. Falconer, "Teaching Tip: Are our Students Studying Effectively" **Chemical Engineering Education 54**, 31 (2020).
19. J.L. Falconer, K.R. Bourland, J. deGrazia, M. Medlin, "Teaching Tip: Interactive Self-Study Modules for Chemical Engineering" **Chemical Engineering Education 54,** 171 (2020).
20. J.L. Falconer and N. Hendren, "Virtual Catalytic Reactor Laboratory", **Chemical Engineering Education 55**, 183-188 (2021).

Educational Proceedings and Reviews

1. Falconer, J. L., "Kinetics and Reaction Engineering", **The Engineering Handbook** (R.C. Dorf, Ed.), CRC Press, p. 785-786 (1995).
2. Falconer, J. L., "Review of Elements of Chemical Reaction Engineering", **Chemical Engineering Education 22**, 7 (1987).
3. M. Koretsky, D.L. Silverstein, R.L. Miller, J.L. Falconer "Integration of Conceptual Learning throughout the Core Chemical Engineering Curriculum", **118th ASEE Annual Meeting Proceedings**, 4 pages (2011).
4. M. Koretsky, R.L. Miller, J.L. Falconer, M.J. Prince, M.A. Vigeant, S.J. Krause, D.L. Silverstein, "Educational Methods and Tools to Encourage Conceptual Learning", **118th ASEE Annual Meeting Proceedings**, 9 pages (2011).
5. G. Nicodemus, J.L. Falconer. J.W. Medlin, "Incorporating Screencasts in Chemical Engineering Courses: Online Videos as Course Supplements and Student Feedback, " **118th ASEE Annual Meeting Proceedings**, Vancouver, Canada, 5 pages (2011).
6. M.D. Koretsky, D.L. Silverstein, J. Falconer, and R. L. Miller, "Collaborative Research: Integration of Conceptual Learning throughout the Core Chemical Engineering Curriculum – Year 1" **Proceedings of the 2012 American Society for Engineering Education Annual Conference & Exposition** (2012).
7. B.J. Brooks, D.M. Gilbuena, J.L. Falconer, D,.L. Silverstein, R.L. Miller, and M. D. Koretsky, "Preliminary Development of the AIChE Concept Warehouse,", **Proceedings of the 2012 American Society for Engineering Education Annual Conference & Exposition** (2012).
8. M.D. Koretsky, J.L. Falconer, D.L. Silverstein, R.L. Miller, D.M. Gilbuena, B.J. Brooks , C. Smith, "Collaborative Research: Integration of Conceptual Learning throughout the Core Chemical Engineering Curriculum – Year 2", **Proceedings of the 2013 American Society for Engineering Education Annual Conference & Exposition** (2013).
9. G. D. Nicodemus, J.L. Falconer, J.W. Medlin, J. deGrazia, K, McDanel, "Resources to Implement Flipped Chemical Engineering Classrooms: Course Packages", **Proceedings of American Society of Engineering Education**, **(**2014).
10. M.D. Koretsky, J.L. Falconer, B.J. Brooks, D.M. Gilbuena, D.L. Silverstein, C. Smith , R.L. Miller, M. Miletic, "Collaborative Research: Integration of Conceptual Learning through the Core Chemical Engineering Curriculum-Year 3", **Proceedings of American Society of Engineering Education** (2014).
11. G. D. Nicodemus, J.L. Falconer, J.W. Medlin, J. deGrazia, K, McDanel, "Screencasts for Enhancing Chemical Engineering Education", **Proceedings of American Society of Engineering Education** (2014).
12. G.D. Nicodemus, J.L. Falconer, "Interactive Simulations for Chemical Engineering", **Proceedings of American Society of Engineering Education** (2014).
13. M.D. Koretsky, J.L. Falconer, B.J. Brooks, D.M. Gilbuena, D.L. Silverstein, C. Smith , R.L. Miller, M. Miletic, "Collaborative Research: Integration of Conceptual Learning through the Core Chemical Engineering Curriculum-Year 4", **Proceedings of American Society of Engineering Education** (2015).
14. J.L. Falconer, J. deGrazia, J.W. Medlin, G.D. Nicodemus, K.P. McDanel, M. Medlin, "Teaching/Learning Resources for Chemical Engineering" **Proceedings of American Society of Engineering Education** (2015).
15. J.L. Falconer, G.D. Nicodemus, "Interactive Mathematica simulations for Chemical Engineering", **Proceedings of American Society of Engineering Education** (2015).

Book Chapters

1. Magrini, K. M., and Falconer, J. L., "Selective Formation of Dimethyldichlorosilane on Silicon Surfaces", **Catalyzed Direct Reactions of Silicon** (K. M. Lewis and D. Rethwisch, editors), p. 265-277 Elsevier (1993).

2. Magrini, K. M., Falconer, J. L., and Koel, B. E., "Model Reaction Studies of the Direct Synthesis of Methylchlorosilanes", **Catalyzed Direct Reactions of Silicon** (K. M. Lewis and D. Rethwisch, editors), p. 249-264 Elsevier (1993).
3. Lewis, K. M., McLeod, D., Kanner, B., Falconer, J. L., and Frank, T. C., "Surface Chemical Studies of the Mechanism of the Direct Synthesis of Methylchlorosilanes", **Catalyzed Direct Reactions of Silicon** (K. M. Lewis, and D. Rethwisch, editors) p. 333-440 Elsevier (1993).
4. Larson, S. A. and Falconer, J. L. "Characterization of TiO_2 Used in Liquid Phase and Gas Phase Photooxidation of Trichloroethylene", **Photocatalytic Purification and Treatment of Water and Air** (D.F. Ollis and H. Al-Ekabi, editors), p 473-479, Elsevier (1993).
5. Falconer, J. L., Noble, R. D. and Sperry, D. P., "Catalytic Membrane Reactors", **Membrane Separations Technology: Principles and Applications**, p 669-712, Elsevier (R.D. Noble and S.A. Stern, ed.) (1995).
6. Falconer, J. L., "Glossary of Terminology used in Catalysis", **Catalysis: Science and Technology**, **Vol. 10,** Springer-Verlag KG, p. 177-209, (1996).

Research Proceedings

1. Ramirez, W. F., Oen, A. C., Strobel, J. F., Falconer, J. L., and Evans, H.E., "Surface Composition of Berea Sandstone", **Proceedings, Society of Petroleum Engineers**, SPE 11972, pp. 1-10 (1983).
2. Falconer, J. L., Bailey, K. M., and Gochis, P. D., "CO Hydrogenation on Alkali-Promoted Nickel Catalysts", **Catalysis of Organic Reactions**, Chemical Industries Vol. 22, pp. 135-150, Marcel Dekker, Inc., New York (1985).
3. Saber, J. M., Falconer, J. L. and Brown, L. F., "Interaction of Potassium Carbonate with Surface Oxides of Carbon," **Proceedings of Symposium on Fundamentals of Catalytic Coal and Carbon Gasification**, p. 90-99 (1986).
4. Bailey, K. M., Chai, G. Y., and Falconer, J. L., "Characterization of Multiple Reaction Sites on Ni/Al_2O_3 Catalysts," **Proceedings, 9th International Congress on Catalysis Vol. 3**, (M.J. Phillips and M. Ternan, Eds.) p. 1090-1097 (1988).
5. Sen, B. and Falconer, J. L., "Formation of a H-CO Complex on the Support of Ni/TiO_2," **Proceedings of Second International Conference on Spillover**, (Ed. K.-H. Steinberg) p 106-115, Leipzig, DDR (1989).
6. Bell, D. A., Lu, Z., Falconer, J. L., and McConica, C. M. "Reactions of WF_6 with Stainless Steel", **Tungsten and Other Advanced Metals for ULSI Applications in 1990,** (eds., G.M. Smith and R. Blumenthal) Materials Research Society, 31-37 (1991).
7. Yilmaz, S. and Falconer, J. L. "The Rochow Synthesis on Single Crystal Silicon", **Proceedings of Silicon for Chemical Industry,** Geiranger, Norway, p. 99-110 (1992).
8. Falconer, J. L., Chen, B., Larson, S. A., and Hsiao, E. C., "Reaction Sites on the Al_2O_3 Support of Pd/Al_2O_3", **Proceedings of 10th International Congress on Catalysis**, Budapest, Hungary, (eds., L. Guczi, F. Solymosi, and P. Tetenyi) p 1887-1890 (1993).
9. Bell, D. A., Falconer, J. L., and McConica, C. M., "Desorption of Tungsten Pentafluoride from Tungsten", **Advanced Metallization for ULSI Applications, 1992,** Materials Research Society (eds., T.S. Cale and F.S. Pintchouski) pp. 153-158 (1993).
10. Chen, B. and Falconer, J. L., "The Role of Spillover in the Hydrogenation of Oxygenates on Ni/Al_2O_3", **Studies in Surface Science and Catalysis, Vol. 27,** 171-175, Elsevier (1993).
11. Flesner, R. L., Kester, K. B., Chen, B. and Falconer, J. L., "Spillover to Form CH_3O on Pt/Al_2O_3 and Pd/La_2O_3", **Studies in Surface Science and Catalysis, Vol. 27,** 277-280, Elsevier (1993).
12. Falconer, J. L. and Noble, R. D., "Direct Conversion of Methane to Methanol in a Non-Isothermal Catalytic Membrane Reactor", **Proceedings of the Fuels Technology Contractors Review Meeting,** 102 (1994).
13. Yilmaz, S., Floquet, N., and Falconer, J. L., "Influence of Catalyst and Oxide Thickness during Dimethyldichlorosilane Formation on Si(100)", **Silicon for the Chemical Industry II,** p. 137-146, (H.A. Oye, H.M. Rong, L. Nygaard, G. Schussler, and J. Kr. Tuset, editors) Tapir Publishers (1994).
14. Poshusta, J.C., Falconer, J.L., and Noble, R.D., "Temperature and Pressure Effects in CO_2/CH_4 Permeation in Zeolite Membranes", **Proceedings of the Fifth International Conference on Inorganic Membranes**, 132-134 (1998).
15. Lin, X., R.D. Noble, and J.L. Falconer, "Characterization and Modification of Zeolite Membranes", **Proceedings of the Fifth International Conference on Inorganic Membranes**, 282-285 (1998).
16. Nomura, M., T. Yamaguchi, S.-I. Nakao, R.D. Noble, and J.L. Falconer, " Modification of Silicalite and ZSM-5 Membranes by Counterdiffusion CVD Technique", **Proceedings of the Fifth International Conference on Inorganic Membranes**, 572-575 (1998)

17. Blount, M.C. and Falconer, J.L., "Photocatalytic Oxidation of Toluene on Platinum/Titania Catalysts" **Proceedings 12th International Congress on Catalysis**, **Studies in Surface Science and Catalysis, vol. 130**, 1967-1972 (2000).
18. Bowen, T.C., J.C. Wyss, M. Yu, J.L. Falconer, R. D. Noble, "Diffusion Measurements during Pervaporation through a Zeolite Membrane", **Proceedings 8th International Conference on Inorganic Membranes**, eds. F.T. Akin and Y.S. Lin, Adams Press, Chicago, 188-191 (2004).
19. Preis, S., Falconer, J.L., Kolinko, P., Kozlov, D., Vorontsov, A., Gas-phase Photocatalytic Oxidation of Unsymmetrical Dimethyl Hydrazine. Oxidation Technologies for Water and Wastewater Treatment. Special topic: Recalcitrant and Anthropogenic Micropollutants. **Proc. 4th Int. Water Assoc. Specialist Conf.**, Goslar, Germany, 470-473 (2006).