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Education

- Ph.D., Princeton University, 1988 Chemistry (Chemical Physics).
- M.A., Princeton University, 1981 Chemistry (Chemical Physics).
- B.S., Duke University, 1979 (Physics).
- B.S., Duke University, 1979 (Chemistry).

Research Experience

- Senior Technical Staff Member, Princeton Environmental Institute, Princeton University, 1999 – present.
- Senior Research Scientist (25% time), Climate Central, July, 2008 - May, 2009.
- Research Staff Member, Center for Energy and Environmental Studies, Princeton University, 1996 – 1999.
- Research Staff Member, Princeton University, Dept. of Mechanical & Aerospace Engineering, 1990 – 1995.
- Research Scientist, Columbia University, Department of Chemistry, 1988 – 1990.
- Post-Doctoral Fellow, Columbia University, Department of Chemistry, 1985 – 1988.

Patents

US 5,076,194, December 31, 1991; *Safety Deck System*
US 4,699,076, October 13, 1987; *Safety Deck System*
UK GB 2,167,353 B, April 9, 1985; *Kayak Safety Deck System*

Professional Service

- Member, Council of the Princeton University Community, 2015 – .
- Member, External Advisory Board, Sunshine to Petrol (S2P) Project, Sandia National Laboratories, 2008 – 2011.
- Member, Princeton Sustainability Committee, 2006 – present.
- Instructor, ENV ST01, *Toward an Ethical Greenhouse Gas Emissions Trajectory for Princeton University*, Princeton Environmental Institute, Princeton University, fall term, 2006.
- Member, FutureGen Surface Technical Experts Group, FutureGen Alliance, Jan. – Jun. 2006.

Book Chapters

2. *Use of Membranes in Systems for Electric Energy and Hydrogen Production from Fossil Fuels*, by Paolo Chiesa, Matteo C. Romano and Thomas G. Kreutz, in the *Handbook of Membrane Reactors, Volume 2: Reactor Types and Industrial Applications*, Angelo Basile, ed., Woodhead Publishing Limited, Philadelphia, PA, 2013. ISBN-13: 978-0857094155
1. *Biomass and Coal to Fuels and Power*, Robert H. Williams, Guangjian Liu, Thomas G. Kreutz and Eric D. Larson, *Annual Review of Chemical and Biomolecular Engineering* **2**, 259-253 (2011).
[10.1146/annurev-chembioeng-061010-114126](https://doi.org/10.1146/annurev-chembioeng-061010-114126)

Articles in Refereed Journals

48. *Using Molten Carbonate Fuel Cells For Clean Power Generation And CO2 Capture Retrofitting Coal Power Plants And Combined Cycles*, Maurizio Spinelli, Stefano Campanari, Matteo C. Romano, Stefano Consonni, Thomas G. Kreutz, Hossein Ghezeli-Ayagh, Stephen Jolly, Matthew Di Nitto, Accepted for the (reviewed) Proceedings of the ASME 2015 Power and Energy Conversion Conference, PowerEnergy2015, San Diego, CA, June 28-July 2, 2015. Nominated for *Best Paper Award*.

47. *Energy and Economic Performance of Novel Integrated Gasifier Fuel Cell Cycles with Carbon Capture*, Andrea Lanzini, Thomas G. Kreutz, Emanuele Martelli and Massimo Santarelli, *International Journal of Greenhouse Gas Control*, **26**, 169–184 (2014). [doi:10.1016/j.ijggc.2014.04.028](https://doi.org/10.1016/j.ijggc.2014.04.028)
46. *Numerical Optimization of Steam Cycles and Steam Generators Designs for Coal to FT Plants*, Emanuele Martelli, Thomas G. Kreutz, Manuele Gatti, Paolo Chiesa and Stefano Consonni, *Chemical Engineering Research and Design*, **91**(8), 1467–1482 (2013). <http://dx.doi.org/10.1016/j.cherd.2013.02.026>
45. *Making Fischer-Tropsch Fuels and Electricity from Coal and Biomass: Performance and Cost Analysis*, Guangjian Liu, Eric D. Larson, Robert H. Williams, Thomas G. Kreutz and Xiangbo Guo, *Energy and Fuels* **25**, 415–437 (2011). [DOI:10.1021/ef101184e](https://doi.org/10.1021/ef101184e)
44. *Shell Coal IGCCs with Carbon Capture: Conventional Gas Quench vs. Innovative Configurations*, Emanuele Martelli, Thomas G. Kreutz, Michiel Carbo, Stefano Consonni, and Daniel Jansen, *Applied Energy* **88**, 3978–3989 (2011). [doi:10.1016/j.apenergy.2011.04.046](https://doi.org/10.1016/j.apenergy.2011.04.046)
43. *Shell Gasifier-Based Coal IGCC with CO₂ Capture and Storage: Partial Water Quench vs. Novel Water-Gas Shift*, Thomas G. Kreutz, Emanuele Martelli, Michiel Carbo, Stefano Consonni, and Daniel Jansen, *Proceedings of ASME Turbo Expo 2010*, Glasgow, UK, (June 14–18, 2010).
42. *Co-production of Synfuels and Electricity from Coal + Biomass with Zero Net Carbon Emissions: an Illinois Case Study*, Eric D. Larson, Giulia Fiorese, Guangjian Liu, Robert H. Williams, Thomas G. Kreutz, and Stefano Consonni, *Energy and Environmental Science*, **3**, 28–42 (2010). [DOI:10.1039/b911529c](https://doi.org/10.1039/b911529c)
41. *Carbon-free Hydrogen and Electricity from Coal: Options for Syngas Cooling in Systems Using a Hydrogen Separation Membrane Reactor*, Luca DeLorenzo, Paolo Chiesa, Thomas Kreutz, and Robert Williams, *Journal of Gas Turbines and Power*, **130**(3), 031401–1 (May, 2008). [doi:10.1115/1.2795763](https://doi.org/10.1115/1.2795763)
40. *Inorganic Membranes for Hydrogen Production and Purification: A Critical Review and Perspective*, G.Q. Lu, J.C. Diniz da Costa, M. Duke, S. Giessler, R. Socolow, R.H. Williams, and T. Kreutz, *Journal of Colloid and Interface Science* **314**, 589–603 (2007). [doi:10.1016/j.jcis.2007.05.067](https://doi.org/10.1016/j.jcis.2007.05.067)
39. *CO₂ Sequestration from IGCC Power Plants by Means of Metallic Membranes*, Paolo Chiesa, Thomas Kreutz, and Giovanni Lozza, *Journal of Gas Turbines and Power*, **129**, 123–134 (2007). [doi:10.1115/1.2181184](https://doi.org/10.1115/1.2181184)
38. *Co-production of Hydrogen, Electricity, and CO₂ from Coal with Commercially Ready Technology. Part B: Economic Analysis*, Thomas Kreutz, Robert Williams, Stefano Consonni, and Paolo Chiesa, *International Journal of Hydrogen Energy*, **30**, 769–784 (2005). [doi:10.1016/j.ijhydene.2004.08.001](https://doi.org/10.1016/j.ijhydene.2004.08.001)
37. *Co-production of Hydrogen, Electricity, and CO₂ from Coal with Commercially Ready Technology. Part A: Performance and Emissions*, Paolo Chiesa, Stefano Consonni, Thomas Kreutz, and Robert Williams, *International Journal of Hydrogen Energy*, **30**, 747–767 (2005). [doi:10.1016/j.ijhydene.2004.08.002](https://doi.org/10.1016/j.ijhydene.2004.08.002)
36. *Ignition of Premixed Hydrogen/Air in Heated Counterflow*, X. L. Zheng, J. D. Blouch, D. L. Zhu, T. G. Kreutz, and C. K. Law, *Proceedings of the Combustion Institute*, **29**, 1637–1644 (2002). [doi:10.1016/S1540-7489\(02\)80201-2](https://doi.org/10.1016/S1540-7489(02)80201-2)
35. *Small-Scale Biomass Fuel Cell/Gas Turbine Power Systems for Rural Areas*, S. Kartha, T. G. Kreutz, and R. H. Williams, *Energy for Sustainable Development*, **IV**(1), 85–89 (2000).
34. *A Cost-Benefit Assessment of BLGCC Technology*, E. D. Larson, G. W. McDonald, W. Yang, W. J. Frederick, K. Iisa, T. G. Kreutz, E. W. Malcolm, and C. A. Brown, *TAPPI Journal*, **83**(6), 1-16 (2000).
33. *Preliminary Economics of Black Liquor-Gasifier/Gas Turbine Cogeneration at Pulp and Paper Mills*, E.

- D. Larson, S. Consonni, and T. G. Kreutz, *ASME Journal of Engineering for Gas Turbines and Power*, **122**, 255-261 (2000). [doi:10.1115/1.483203](https://doi.org/10.1115/1.483203)
32. *Combined Biomass and Black Liquor-Gasifier/Gas Turbine Cogeneration at Pulp and Paper Mills*, E. D. Larson, T. G. Kreutz, and S. Consonni, *ASME Journal of Engineering for Gas Turbines and Power*, **121**, 394-400 (1999). [doi:10.1115/1.2818486](https://doi.org/10.1115/1.2818486)
 31. *A Comparison of Hydrogen, Methanol and Gasoline as Fuels for Fuel Cell Vehicles: Implications for Vehicle Design and Infrastructure Development*, J. Ogden, M. Steinbugler, and T. Kreutz, *Journal of Power Sources*, **79**, 143-168, (1999). PII: S0378.7753(99)00057-9
 30. *Fuels for Fuel Cell Vehicles: Vehicle Design and Infrastructure Issues*, J. Ogden, T. Kreutz, and M. Steinbugler, Society of Automotive Engineers Technical Paper No. 982500, October 1998.
 29. *Black Liquor-Gasifier/Gas Turbine Cogeneration*, S. Consonni, E. D. Larson, T. G. Kreutz, and N. Berglin, *ASME Journal of Engineering for Gas Turbines and Power*, **120**, 442-449 (1998).
 28. *Ignition in Nonpremixed Counterflowing Hydrogen versus Heated Air: Computational Study with Skeletal and Reduced Chemistry*, T. G. Kreutz and C. K. Law, *Combust. Flame*, **114**, 436 (1998).
 27. *Ignition of Hydrogen-Enriched Methane by Heated Air*, C. G. Fotache, T. G. Kreutz, and C. K. Law, *Combust. Flame*, **110**, 429 (1997).
 26. *On Ignition in Counterflowing CO/H₂ versus Heated Air*, J. Y. D. Trujillo, T. G. Kreutz and C. K. Law, *Combust. Sci. Tech.*, **127**, 1 (1997).
 25. *Ignition of Counterflowing Methane versus Heated Air under Reduced and Elevated Pressures*, C. G. Fotache, T. G. Kreutz, and C. K. Law, *Combust. Flame*, **108**, 442 (1997).
 24. *On the Extinction of Counterflow Diffusion Flames under Velocity Oscillations*, J. S. Kistler, C. J. Sung, T. G. Kreutz, C. K. Law, and M. Nishioka, Proceedings of the Twenty-Sixth Symposium (International) on Combustion, The Combustion Institute, Pittsburgh, 1996.
 23. *Ignition in Nonpremixed Counterflowing Hydrogen versus Heated Air: Computational Study with Detailed and Simplified Chemistry*, T. G. Kreutz and C. K. Law, *Combust. Flame*, **104**, 157 (1996).
 22. *An Experimental Study of Ignition in Nonpremixed Counterflowing Hydrogen versus Heated Air*, C. G. Fotache, T. G. Kreutz, D. L. Zhu, and C. K. Law, *Combust. Sci. Tech.*, **109**, 373 (1995).
 21. *Experimental and Theoretical Velocity Profiles for Pure Rotational Scattering in CO₂-Hot Hydrogen Atom Collisions*, C. K. Ni, T. G. Kreutz, and G. W. Flynn, *J. Chem. Phys.* **99**, 7381 (1995).
 20. *The Role of Kinetic Versus Thermal Feedback in Nonpremixed Ignition of Hydrogen Versus Heated Air*, T. G. Kreutz, M. Nishioka, and C. K. Law, Proceedings of the Twenty-Fifth Symposium (International) on Combustion, The Combustion Institute, Pittsburgh, 1994.
 19. *Ignition in Nonpremixed Counterflowing Hydrogen versus Heated Air: I. Computational Study with Detailed and Simplified Chemistry*, T. G. Kreutz and C. K. Law, Selected as the Best Paper at the 1993 Technical Meeting of the Joint Central and Eastern States Sections of the Combustion Institute, New Orleans, LA, March 15-17, 1993.
 18. *Intrinsic Transport and Chemistry Coupling in Combustion Processes*, C. K. Law, F.N. Egolfopoulos, and T. G. Kreutz, Proceedings of the 6th Toyota Conference on Turbulence and Molecular Processes in Combustion, Shizuoka-ken, Japan, 11-14 October 1992.
 17. *Experimental and Theoretical Velocity Profiles for Pure Rotational Scattering in CO₂-Hot Hydrogen Atom Collisions*, C. K. Ni, T. G. Kreutz, and G. W. Flynn, *J. Chem. Phys.* **99**, 7381 (1995).

16. *Translationally and Rotationally Resolved Excitation of CO₂ (00⁰2) by Collisions with Hot Hydrogen Atoms*, F. A. Khan, T. G. Kreutz, G. W. Flynn, and R. E. Weston, Jr., *J. Chem. Phys.* **98**, 6183 (1993).
15. *Diode Laser Probe of Vibrational, Rotational, and Translational Excitation of CO₂ following Collisions with O(¹D): Inelastic Scattering*, L. Zhu, T. G. Kreutz, A. S. W. Hewitt, and G. W. Flynn, *J. Chem. Phys.* **93**, 3277 (1990).
14. *Analysis of Translational, Rotational, and Vibrational Energy Transfer in Collisions between CO₂ and Hot Hydrogen Atoms; The 3-Dimensional 'Breathing' Ellipsoid Model*, T. G. Kreutz and G. W. Flynn, *J. Chem. Phys.* **93**, 452 (1990).
13. *Collisional Excitation of CO₂ (01¹1) by Hot Hydrogen Atoms: Alternating Intensities in State Resolved Vibrational, Rotational, and Translational Energy Transfer*, F. A. Khan, T. G. Kreutz, J. A. O'Neill, C. X. Wang, G. W. Flynn, and R. E. Weston, Jr., *J. Chem. Phys.* **93**, 445 (1990).
12. *State Resolved Vibrational, Rotational, and Translational Energy Deposition in CO₂ (00⁰1) Excited by Collisions with Hot Hydrogen Atoms*, F.A. Khan, T. G. Kreutz, G. W. Flynn, and R. E. Weston, Jr., *J. Chem. Phys.* **92**, 4867 (1990).
11. *Inversion of Experimental Data to Generate State-to-State Cross Sections for Ro-Vibrationally Inelastic Scattering of CO₂ by Hot Hydrogen Atoms*, T. G. Kreutz, F. A. Khan, and G. W. Flynn, *J. Chem. Phys.* **92**, 347 (1990).
10. *Probing the O(¹D) + CO₂ Reaction with Second Derivative Modulated Diode Laser Spectroscopy*, A. J. Sedlacek, D. R. Harding, R. E. Weston, Jr., T. G. Kreutz, and G. W. Flynn, *J. Chem. Phys.* **91**, 5837 (1989).
9. *An Analytical Preaveraging Approximation for the Evaluation of Matrix Elements*, T. G. Kreutz and H. Rabitz, *Chem. Phys.* **139**, 427 (1989).
8. *Mass Effects and Channel Coupling Sensitivity in Vibrational Energy Transfer*, T. G. Kreutz, L. Eno, and H. Rabitz, *J. Chem. Phys.* **90**, 1711 (1989).
7. *Hierarchical Fitting and Scaling Models for Rotationally Inelastic Cross Sections*, T. G. Kreutz and H. Rabitz, *J. Chem. Phys.* **90**, 1701 (1989).
6. *Understanding the Dynamic Behavior of Molecular Vibrational States*, T. G. Kreutz and G. W. Flynn, *Advances in Laser Science-III, Optical and Engineering Series 9*, AIP Conference Proceedings No. 172, Andrew C. Tam, James L. Gole, and William C. Stwalley, Eds., pp. 280–289 (1988).
5. *A Time Domain Photoacoustic Study of the Collisional Relaxation of Vibrationally Excited H₂*, T. G. Kreutz, J. Gelfand, R. B. Miles, and H. Rabitz, *Chem. Phys.* **124**, 359 (1988).
4. *Sensitivity Analysis of Mass Effects in Rotational Energy Transfer*, T. G. Kreutz, L. Eno, and H. Rabitz, *J. Chem. Phys.* **88**, 6322 (1988).
3. *Temperature Dependence of Rotationally Resolved Excitation of CO₂ (00⁰1) by Collisions with Hot Hydrogen Atoms*, F. A. Khan, T. G. Kreutz, L. Zhu, G. W. Flynn, and R. E. Weston, Jr., *J. Phys. Chem.* **92**, 6171 (1988).
2. *IR Diode Laser Study of Vibrational Energy Distribution in CO₂ Produced by UV Excimer Laser Photofragmentation of Pyruvic Acid*, J.A. O'Neill, T. G. Kreutz, and G. W. Flynn, *J. Chem. Phys.* **87**, 4598 (1987).
1. *Diode Laser Absorption Probe of Vibrational-Vibrational Energy Transfer in CO₂*, T. G. Kreutz, J. A. O'Neill, and G. W. Flynn, *J. Phys. Chem.* **91**, 5540 (1987).

Meeting Presentations and Articles in Unrefereed Journals

75. *A Case for Negative CO₂ Emissions via Biomass-based Electricity with CCS*, Tom Kreutz, Andlinger Center for Energy and the Environment, 2016 E-filiates Partnership Retreat, Princeton, NJ, 28-29 Jan. 2016.
74. *Sustainable biofuels with net negative greenhouse gas emissions via pyrolysis or gasification*, Johannes C. Meerman, Thomas G. Kreutz, Eric D. Larson and Robert H. Williams, TCBiomass 2015, Chicago, IL, 2-5 Nov. 2015.
73. *Design/Cost Study and Commercialization Analysis for Synthetic Jet Fuel Production at a Mississippi site from Lignite and Woody Biomass with CO₂ Capture and Storage via EOR*, Eric Larson, Tom Kreutz, Hans Meerman, Robert Williams, Chris Greig and Steve Baxley, 2015 International Pittsburgh Coal Conference, Pittsburgh, PA, 5-8 Oct. 2015.
72. *Co-processing Biomass and Natural Gas Into Clean Transportation Fuels at Small Scale*, A.K. Hailey, J.C. Meerman, T.G. Kreutz, E.D. Larson, and Y-L. Loo, CMI Annual Meeting, Princeton University, April 2015.
71. *Grid-Scale Energy Storage for Burgeoning Renewable Energy: Challenges and Opportunities - An Energy Technology Distillate from the Andlinger Center for Energy and the Environment*, Contributors: Craig Arnold, Greg Davies, Thomas Kreutz, Warren Powell, Michael Schwartz, Robert Socolow, and Daniel Steingart, Dec. 2013.
70. *Prospective Economics of CO₂ Capture and Activation to Transportation Fuels*, Thomas G. Kreutz and Robert Socolow, the 12th Annual Carbon Capture, Utilization and Sequestration Conference, Pittsburgh, PA, 13-16 May 2013.
69. *Design Criteria and Optimization of Heat Recovery Steam Cycles for High-Efficiency, Coal-Fired, Fischer-Tropsch Plants*, Emanuele Martelli, Thomas G. Kreutz, Manuele Gatti, Paolo Chiesa and Stefano Consonni, GT2012-69661, ASME Turbo Expo 2012, Copenhagen, DK, 11-15 June 2012.
68. *Techno-Economic Analysis of Integrated Gasification Fuel Cell Power Plants Capturing CO₂*, Andrea Lanzini, Thomas G. Kreutz and Emanuele Martelli, GT2012-69579, ASME Turbo Expo 2012, Copenhagen, DK, 11-15 June 2012.
67. *Numerical Optimization of Steam Cycles and Steam Generators for a Coal to FT Plant*, Emanuele Martelli, Thomas G. Kreutz, Manuele Gatti, Paolo Chiesa and Stefano Consonni, 22nd European Symposium on Computer Aided Process Engineering, London, UK, 17-20 June 2012.
66. *Energy, Environmental, and Economic Analyses of Design Concepts for the Co-Production of Fuels and Chemicals with Electricity via Co-Gasification of Coal and Biomass*, Eric D. Larson, Robert H. Williams, Thomas G. Kreutz, Andrea Lanzini, Ilkka Hannula, and Guangjian Liu, final report to the National Energy Technology Laboratory under DE-FE0005373, 30 June 2012.
65. *A Role for Systems Analysis in Developing Future Energy Systems*, Thomas G. Kreutz, Keynote presentation for the SOFCOM Kickoff Meeting, Politecnico di Torino, Torino, Italy, 1 Dec. 2011.
64. *Prospects for Producing Low Carbon Transportation Fuels from Captured CO₂ in a Climate Constrained World*, Thomas G. Kreutz, 10th Annual Conference on Carbon Capture & Sequestration, Pittsburgh, PA, 4 May 2011.
63. *Prospects for Producing Low Carbon Transportation Fuels from Captured CO₂ in a Climate Constrained World*, Thomas G. Kreutz, AIChE Spring National Meeting, Chicago, IL, 16 March 2011.
62. *Low-C Power from Fossil Fuel and Biomass with Synthetic Fuels Coproduction*, Robert H. Williams,

Guangjian Liu, Eric D. Larson and Thomas G. Kreutz, *ACS Fuel Division Symposium on Fuels, Chemicals, Materials, and Energy from Biomass, Coal, and Natural Resources*, Anaheim California, 27–31 March 2011.

61. *Prospects for Producing Low Carbon Transportation Fuels from Captured CO₂ in a Climate Constrained World*, Thomas G. Kreutz, 10th International Conference on Greenhouse Gas Technologies (GHGT-10), Amsterdam, The NE, Sept. 19–23, 2010.
60. *Alternatives for Decarbonizing Existing USA Coal Power Plant Sites*, Robert H. Williams, Guangjian Liu, Thomas G. Kreutz and Eric D Larson, 10th International Conference on Greenhouse Gas Technologies (GHGT-10), Amsterdam, NE, Sept. 19–23, 2010.
59. *Design/Economics of Low-Carbon Power Generation from Natural Gas and Biomass with Synthetic Fuels Co-Production*, Guangjian Liu, Robert H. Williams, Eric D. Larson and Thomas G. Kreutz, 10th International Conference on Greenhouse Gas Technologies (GHGT-10), Amsterdam, NE, Sept. 19–23, 2010.
58. *Electricity and Synfuels from Coal and Biomass with CCS: A Strategy for Simultaneously Addressing C Mitigation and Energy Security Challenges*, Robert H. Williams, Guangjian Liu, Eric D. Larson and Thomas G. Kreutz, *Proceedings of International Conference on Global Dynamics in the Green Energy Industry A New Engine of Growth*, East-West Center and Korea Energy Economics Institute, Honolulu, Hawaii, 19–20 August 2010.
57. *Performance and Power Cost for Lignite: Comparing Fluidized Bed and Entrained Flow Gasifiers*, Guangjian Liu, Thomas G. Kreutz, Eric D. Larson and Robert H. Williams, *Proceedings of the 9th Annual DOE/NETL Conference on Carbon Capture and Sequestration*, PA, 10–13 May, 2010.
56. *An Integrated Framework for Comparative Techno-Economic Evaluations of Plants that Convert Coal and/or Biomass to Power and/or Synthetic Liquid Transportation Fuels*, Thomas Kreutz, Eric D. Larson, Guangjian Liu, Robert H. Williams, and Robert Socolow, 8th Annual DOE/NETL Conference on Carbon Capture and Sequestration, Pittsburgh, PA, May 4–7, 2009.
55. *CO₂ Slurries for Transport and Pressurization of Low Rank Coals in IGCC Power Plants with CCS*, Michiel C. Carbo, Thomas G. Kreutz, Robert H. Williams, Ruud W. van den Brink, Daniel Jansen, Robert H. Socolow, Adrian H.M. Verkooijen, 8th Annual DOE/NETL Conference on Carbon Capture and Sequestration, Pittsburgh, PA, May 4–7, 2009.
54. *Comparison of Coal IGCC with and without CO₂ Capture and Storage: Shell gasification with standard vs. partial water quench*, Emanuele Martelli, Thomas Kreutz, Stefano Consonni, 9th International Conference on Greenhouse Gas Technologies (GHGT-9), Washington, DC, November 16–20, 2008.
53. *Co-production of Synfuels and Electricity from Coal + Biomass with zero net Carbon Emissions: an Illinois Case Study*, E.D. Larson, G. Fiorese, G. Liu, R.H. Williams, T.G. Kreutz, S. Consonni, 9th International Conference on Greenhouse Gas Technologies (GHGT-9), Washington, DC, November 16–20, 2008.
52. *Fischer-Tropsch Fuels from Coal and Biomass: Strategic Advantages of Once-Through (“Polygeneration”) Configurations*, Robert H. Williams, Eric D. Larson, Guangjian Liu, and Thomas G. Kreutz, 9th International Conference on Greenhouse Gas Technologies (GHGT-9), Washington, DC, November 16–20, 2008.
51. *Fischer-Tropsch Fuels from Coal and Biomass*, Thomas G. Kreutz, Eric D. Larson, Guangjian Liu, Robert H. Williams, 25th Annual International Pittsburgh Coal Conference, Pittsburgh, PA, 29 Sept. – 2 Oct. 2008.

50. *CO₂ Capture in IGCC Plants via Cryogenic Separation*, S. Consonni, F. Vigano', T. Kreutz, and L. De Lorenzo, Sixth Annual Conference on Carbon Capture and Sequestration, Pittsburgh, PA, May 7–10, 2007. *Paper withheld by BP to allow filing of international patents; paper to be presented at the Seventh Annual Conference on Carbon Capture and Sequestration, Pittsburgh, PA, May 5-8, 2008.*
49. *An Opportunity for Enhanced Oil Recovery in Texas using CO₂ from IGCC+CCS Fueled with Mixtures of Petcoke and Low Rank Coals*, R. H. Williams and T. G. Kreutz, Sixth Annual Conference on Carbon Capture and Sequestration, Pittsburgh, PA, May 7–10, 2007.
48. *Research on Hydrogen Separation Membranes at Princeton University*, T.G. Kreutz, Invited Presentation at BP Sunbury Research Center, London, UK, 6 December 2006.
47. *A Potential Role for “Slipstream” H₂ from Coal IGCC with CO₂ Capture and Storage in an Emerging H₂ Economy for Transportation*, Thomas G. Kreutz, Invited Presentation at Lawrence Livermore National Laboratory, Livermore, CA, May 25, 2005.
46. *Carbon-free Hydrogen and Electricity from Coal: Options for Syngas Cooling in Systems Using a Hydrogen Separation Membrane Reactor*, Luca DeLorenzo, Paolo Chiesa, Thomas Kreutz, and Robert Williams, Proceedings of ASME Turbo Expo 2005, Reno, NV, June 6-9, 2005. *Won “Best Paper” award in Coal, Biomass & Alternative Fuels section.*
45. *A Potential Role for “Slipstream” H₂ from Coal IGCC with CO₂ Capture and Storage in an Emerging H₂ Economy for Transportation*, Thomas G. Kreutz, Invited presentation at University of Davis, Institute for Transportation Studies, Davis, CA, May 24, 2005.
44. *A Potential Role for “Slipstream” H₂ from Coal IGCC with CO₂ Capture and Storage in an Emerging H₂ Economy for Transportation*, Thomas G. Kreutz, Proceedings of the Fourth Annual Conference on Carbon Sequestration, Alexandria, VA, May 2–5, 2005.
43. *The Potential of Hydrogen in a Carbon-Constrained Future*, Thomas G. Kreutz, 2005 AAAS Annual Meeting, Symposium: “Sustainability - Energy for a Future without Carbon Emissions”, Washington, DC, 19 February, 19, 2005. Invited presentation.
42. *Competition Between Coal and Natural Gas in Producing H₂ and Electricity under CO₂ Emission Constraints*, Thomas Kreutz, and Robert Williams, Proceedings of the 7th International Meeting on Greenhouse Gas Control (GHGT-7), Vancouver, Canada, 5–9 September 2004.
41. *Carbon-free Hydrogen and Electricity from Coal: Options for Syngas Cooling in Systems Using a Hydrogen Separation Membrane Reactor*, Luca De Lorenzo, Thomas G. Kreutz, Paolo Chiesa, and Robert H. Williams, Proceedings of the Third Annual Conference on Carbon Sequestration, Alexandria, VA, May 3–6, 2004.
40. *In Pursuit of a H₂ Economy for Mitigating Climate Change...How Important is Advancing the State-of-the-Art in H₂ Production from Fossil Fuels?*, Thomas G. Kreutz, Invited Presentation at the Global Climate and Energy (GCEP) Energy Workshop: “Carbon-Free Production of Hydrogen”, Stanford University, Palo Alto, California, April 26, 2004.
39. *Production of H₂ and Electricity from Coal with CO₂ Capture and Storage*, Strategic Initiatives for Coal & Power Workshop, Office of Coal and Power Systems, Office of Fossil Energy U.S. Department of Energy, The Aspen Institute’s Wye Conference Center, The River House, July 14-16, 2003. Invited presentation.
38. *Perspectives on Hydrogen from Fossil Fuels for CO₂ Mitigation*, Aspen Global Change Institute, Workshop: "Energy Options and Paths to Climate Stabilization", Aspen, Colorado, July 6-11, 2003. Invited presentations.

37. *Co-production of Hydrogen, Electricity and CO₂ from Coal using Commercially-Ready Technology*, Paolo Chiesa, Stefano Consonni, Thomas G. Kreutz, and Robert H. Williams, Proceedings of the Second Annual Conference on Carbon Sequestration, Alexandria, VA, May 5–8, 2003.
36. *Analysis of Hydrogen and Co-Product Electricity Production from Coal with Near Zero Pollutant and CO₂ Emissions using an Inorganic Hydrogen Separation Membrane Reactor*, Paolo Chiesa, Thomas G. Kreutz, and Robert H. Williams, Proceedings of the Second Annual Conference on Carbon Sequestration, Alexandria, VA, May 5–8, 2003.
35. *Production of Hydrogen and Electricity from Coal, with CO₂ Capture*, T.G. Kreutz, R. H. Williams, R. H. Socolow, P. Chiesa, and G. Lozza, Proceedings of the 6th International Meeting on Greenhouse Gas Control (GHGT-6), October 1–4, 2002, Kyoto, Japan.
34. *Fuels For Fuel Cell Vehicles*, Joan M. Ogden, Thomas G. Kreutz, Margaret M. Steinbugler, Chapter in *Technology, Humans and Society*, edited by Richard Dorf, Academic Press, 2001.
33. *Prospective Technical and Economic Assessment of Natural Gas-Fueled, PEMFC Cogeneration Systems for Residential Applications*, T. G. Kreutz and J. M. Ogden, Proceedings of the 2000 Fuel Cell Seminar, Portland, OR, October 30–November 2, 2000.
32. *Assessment of Hydrogen-Fueled Proton Exchange Membrane Fuel Cells for Distributed Generation and Cogeneration*, T. G. Kreutz and J. M. Ogden, Proceedings of the U.S. D.O.E. Hydrogen R&D Program Review Meeting, San Ramon, Ca, May 9–11, 2000.
31. *Prospective Performance and Economics of Residential Cogeneration using Natural Gas-Fuelled PEMFC Power Systems*, T. G. Kreutz and J. M. Ogden, Proceedings of the 11th Annual U.S. Hydrogen Meeting, Vienna, VA, Feb. 29 – Mar. 2, 2000.
30. *Prospective Economics of Residential-Scale, Natural Gas-Fueled, PEMFC Cogeneration Systems*, T. G. Kreutz and J. M. Ogden, Proceedings of the 1999 CARAT Forum, Troy, MI, September 23, 1999.
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