

Arnold R. Miller, PhD

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EDUCATION

AB, Chemistry (Mathematics minor), Indiana University, Bloomington
MS, Applied Mathematics, University of Illinois, Urbana-Champaign
PhD, Chemistry, University of Illinois, Urbana-Champaign

EXPERIENCE

Vehicle Projects Inc President	1998 – Current
Fuelcell Propulsion Institute President and Director	1996 – Current
Supersonic Institute President and Founder	2010 – Current
Colorado School of Mines, Joint Center for Fuel-Cell Vehicles Founding Director	1994 – 1998
Colorado School of Mines, Department of Chemistry Research Associate Professor	1993 – 1998
U.S. Air Force Seiler Research Laboratory, Electrochemistry Division Visiting Faculty Associate	1993

PROFESSIONAL SERVICE

Member, Editorial Board, International Journal of Hydrogen Energy	2009 – Current
Member, New Technologies Committee, Locomotive Maintenance Officers Association	2005 – Current

JOURNAL ARTICLES

A. Hoffrichter, A. R. Miller, S. Hillmansen, C. Roberts, “Well-to-wheel analysis for electric, diesel and hydrogen traction for railways.” *Transportation Research Part D: Transport and Environment*, 17 (1), pp.28-34, Jan 2012. DOI:10.1016/J.TRD.2011.09.002

A. R. Miller, “Fluted Tubes and Waisted Circles,” in preparation.

A. R. Miller, “Hydrogen tube vehicle for supersonic transport: 3. Aerodynamics in hydrogen,” in preparation.

A. R. Miller, “Hydrogen tube vehicle for supersonic transport: 2. Speed and energy.” *International Journal of Hydrogen Energy*, 35:11 (2010) 5745-5753.

A. R. Miller, “Rail Vehicles: Fuel Cells.” In: *Encyclopedia of Electrochemical Power Sources*, Vol. 1. Amsterdam: Elsevier; 2009. pp. 313-322. Juergen Garche, Chris Dyer, Patrick Moseley, Zempachi Ogumi, David Rand and Bruno Scrosati, editors.

A. R. Miller, “Hydrogen tube vehicle for supersonic transport: Analysis of the concept.” *International Journal of Hydrogen Energy*, 33:8 (2008) 1995-2006.

D. L. Barnes, T. L. Erickson, K. S. Hess, and A. R. Miller, "System design of a large fuel cell hybrid locomotive." *Journal of Power Sources*, 173:2 (2007) 935-942.

A. R. Miller, J. Peters, B. Smith, and O.A. Velev, "Analysis of fuelcell hybrid locomotives." *Journal of Power Sources*, 157:2 (July 2006) 855-861.

A. R. Miller, "Least-cost hybridity analysis of industrial fuel cell vehicles." *European Fuel Cell News*, Volume 7, January 2001.

A. R. Miller, "Tunneling and mining applications of fuel cell vehicles." *Fuel Cells Bulletin*, 3:22 (July 2000) 5 - 9.

G. C. Donovan, A. R. Miller, and T. J. Moreland, "Pathological functions for Newton's method." *American Mathematical Monthly*, 100 (1993) 53-58.

A. R. Miller, "The distribution of wearout over evolved reliability structures." *Journal of Theoretical Biology*, 136 (1989) 27-46.

A. R. Miller, "A set of test life tables for theoretical gerontology." *Journal of Gerontology*, 43 (1988) B43-49.

A. R. Miller, "Evolutionary reliability theory." In: A. D. Woodhead and K. H. Thompson, eds., *Evolution of Longevity in Animals*, Plenum Press, New York, 1987, pp. 187-192.

A. R. Miller, "A computer model of the evolution of specific maximum lifespan." *Mechanisms of Ageing and Development*, 16 (1981) 37-54.

A. R. Miller, "The electron spin resonance spectrum of a suicidal fungus." *Mechanisms of Ageing and Development*, 12 (1980) 393-397.

J. A. Fulton, T. D. Schlabach, J. E. Kerl, E. C. Toren Jr., and A. R. Miller, "Dual-detector-post-column reactor system for the detection of isoenzymes separated by high-performance liquid chromatography. I. Description and theory." *Journal of Chromatography*, 175 (1979) 269-281.

W. J. le Noble and A.R. Miller, "Chlorine kinetic isotope effects in the methylation of pyridine and 2,6-lutidine." *Journal of Organic Chemistry*, 44 (1979) 889-891.

A. R. Miller, "Internal rotation involving a preequilibrium ring inversion." *Journal of Organic Chemistry*, 44 (1979) 1934-1936.

A. R. Miller, "Base-catalyzed carbon-to-oxygen acyl rearrangement via an aromatic transition state." *Journal of Organic Chemistry*, 44 (1979) 1931-1933.

A. R. Miller, "A theoretical relation for the position of the energy barrier between initial and final states of chemical reactions." *Journal of the American Chemical Society*, 100 (1978) 1984-1992.

W. J. le Noble, A. R. Miller, and S. D. Hamann, "A simple, empirical function describing the reaction profile, and some applications." *Journal of Organic Chemistry*, 42 (1977) 338-342.

A. R. Miller, "Sterically stabilized enols. A study employing the internal rotational barriers of the destabilized ketones." *Journal of Organic Chemistry*, 41 (1976) 3599-3602.

A. R. Miller and D. Y. Curtin, "Locked aryl rotation in cis-diaryl-acenaphthenes, torsionally rigid analogues of cis-1, 2-diaryl-cyclopentanes." *Journal of the American Chemical Society*, 98 (1976) 1860-1865.

CONFERENCE PROCEEDINGS

A. R. Miller, "Supersonic Transport with Zero Carbon Emissions." In: Proceedings of Low Carbon Earth Summit 2011 (LCES2011), Dalian, China, 19-26 Oct 2011.

A. R. Miller, "Hydrogen Fuel-Cell Locomotive: Switching and Power-to-Grid Demonstrations." In: Proceedings of 9th World Congress on Railway Research (WCRR-2011), Lille, France, 22-26 May 2011.

A. R. Miller, K. S. Hess, T. L. Erickson, J. L. Dippo and T. Lambrecht, "Testing of the BNSF Fuel-Cell Switch Locomotive: Part 2." In: Proceedings of the Locomotive Maintenance Officers Association (LMOA) Annual Meeting, Montreal, Quebec, Canada, 18-19 October 2010.

M. D. Johnson, A. R. Miller, K. S. Hess, T. L. Erickson, J. L. Dippo and T. Lambrecht, "Vehicle-to-Grid Demonstration of a Fuel-Cell Locomotive." In: Proceedings of the 2010 Fuel Cell Seminar & Exposition, San Antonio, TX, 18-21 October 2010.

A. R. Miller, "Hydrogen Railway Locomotive: Largest Fuel-Cell Land Vehicle." In: Proceedings of 10th International Conference on Clean Energy (ICCE-2010), Famagusta, N. Cyprus, 15-17 September 2010.

A. R. Miller, "Aerodynamics in a Hydrogen Atmosphere: Supersonic Tube Vehicle." In: Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, Nashville, Tennessee, 25-28 July 2010.

A. R. Miller, "Supersonic Hydrogen Tube Vehicle: Mach 2.8 with Low Energy." In: Proceedings of the 5th International Ege Energy Symposium and Exhibition, Denizli, Turkey, 27-30 June 2010.

K. S. Hess, A. R. Miller, T. L. Erickson and J. L. Dippo, "Demonstration of a Hydrogen Fuel-Cell Locomotive." In: Proceedings of the American Public Transportation Association (APTA) Rail Conference 2010, 6-9 June 2010.

A. R. Miller, K. S. Hess, T. L. Erickson and D. L. Dippo, "Hydrogen Fuel-Cell Locomotive for the Los Angeles Basin." In: Proceedings of the NHA Hydrogen Conference and Expo 2010, Long Beach, California, 3-6 May 2010.

A. R. Miller, K. S. Hess, T. L. Erickson and J. L. Dippo, "Fuelcell-Hybrid Shunt Locomotive: Largest Fuelcell Land Vehicle." In: Proceedings of the 2010 Institution of Engineering and Technology's International Conference on Railway Traction Systems (RTS 2010), University of Birmingham, United Kingdom, 13-15 April 2010.

A. R. Miller, M. D. Johnson, K. S. Hess, T. L. Erickson, J. L. Dippo, and T. Lambrecht, "Operation of a fuelcell-hybrid switch locomotive for the Los Angeles Basin: The largest fuel-cell land vehicle." In: Proceedings of 2009 Fuel Cell Seminar, Palm Springs, California, 16-19 November 2009.

A. R. Miller, K. S. Hess, T. L. Erickson, and J. L. Dippo, "Testing of the BNSF fuelcell switch locomotive: Part 1." In: Proceedings of the Locomotive Maintenance Officers Association (LMOA) Annual Meeting, Chicago, Illinois, 16-18 September 2009.

A. R. Miller, "Beyond aircraft: Supersonic hydrogen tube vehicle." In: Proceedings of the World Hydrogen Technologies Convention, New Delhi, India, 26-28 August 2009.

A. R. Miller, "Supersonic hydrogen tube vehicle: Speed and energy comparisons with road, rail, air, and maglev transport." In: Proceedings of the HYPOTHESIS (Hydrogen-Power theoretical and Engineering Solutions International Symposium) VIII Conference, Lisbon, Portugal, 1-3 April 2009.

M. D. Johnson, A. R. Miller, J. L. Dippo, A. Bollman, and F. H. Holcomb, "Fuel-cell hybrid switch locomotive: Emissions reduction." In: Proceedings of the 9th International Colloquium on Environmentally Preferred Advanced Power Generation, Newport Beach, California, 10-12 February 2009.

A. R. Miller, K. S. Hess, and T. L. Erickson, "Maintenance of the BNSF fuelcell-hybrid switch locomotive." In: Proceedings of the Locomotive Maintenance Officers Association (LMOA) Annual Meeting and Global Railway Tech 2008, Chicago, Illinois, 21- 24 September 2008.

A. R. Miller, K. S. Hess, D. L. Barnes, and T. L. Erickson, "Zero-emission, hydrogen-fuelcell locomotive for urban rail." In: Proceedings of the 8th World Congress on Railway Research, Seoul, South Korea, 18-22 May 2008.

A. R. Miller, "Fuelcell hybrid switcher locomotive: Engineering design." In: Proceedings of the Locomotive Maintenance Officers Association (LMOA) Annual Meeting, Chicago, Illinois, 10-15 September 2007.

A. R. Miller, K. S. Hess, D. L. Barnes, and T. L. Erickson, "System design of a large fuelcell hybrid locomotive." ASME Fifth International Fuelcell Science, Engineering & Technology Conference, New York City, New York, 18-20 June 2007.

A. R. Miller, D. L. Barnes, M. C. Betournay, G. Desrivieres, and M. Laflamme, "Fuel cell aspects and future developments needed for mining." In: Proceedings of the First International Symposium in Fuel Cells Applied to Mining (CIM), Montreal, Canada, 29 April 2007.

A. R. Miller, K. S. Hess, and D. L. Barnes, "Comparison of practical hydrogen-storage volumetric densities." In: Proceedings of the NHA Annual Hydrogen Conference San Antonio, Texas, 19-22 March 2007.

A. R. Miller, D. L. Barnes, W. Norris, and O. Velev, "Fuelcell mine loader." In: Proceedings of the Fuel Cell Seminar 2006, Honolulu, Hawaii, 13-17 November 2006.

A. R. Miller, D. H. Dacosta, and M. Golben, "Reversible metal-hydride storage for a fuelcell mine loader." In: Proceedings of the Hydrogen Production & Storage Forum, Vancouver, British Columbia, 11-13 September 2006.

A. R. Miller and J. Peters, "Fuelcell hybrid locomotives: Applications and benefits." In: Proceedings of the Joint Rail Conference 2006, Atlanta, Georgia, 5-6 April 2006.

A. R. Miller, "Fuelcell locomotives." In: Proceedings of the Locomotive Maintenance Officers Association (LMOA) Annual Meeting, Chicago, Illinois, 18-20 September 2005.

A. R. Miller, D. L. Barnes, J. Gongola, B. Hoff, R. La Roche, and O. Velev, "Fuelcell-battery hybrid mine loader." In: Proceedings of the 2004 Fuel Cell Seminar, San Antonio, Texas, 3-5 November 2004.

A. R. Miller, D. L. Barnes, M. C. Bétournay, G. Desrivieres, and P. Laliberté, "Fuelcell mine vehicle program update." In: Proceedings of the Mining Diesel Emissions Conference, Markham, Canada, 6-8 November 2001.

A. R. Miller, "Least-Cost Hybridity Analysis of industrial fuel cell vehicles." In: Proceedings of Hybrid Vehicles 2000, Windsor, Ontario / Romulus, Michigan, 11-12 September 2000.

A. R. Miller, "Commercialization of fuelcell underground locomotives." In: Proceedings of the Intertech's Commercializing Fuel Cell Vehicles 2000, Berlin, Germany, 12-14 April 2000.

A. R. Miller, H. A. Burse, G. C. Story, M. C. Bétournay, and G. J. Thomas, "Underground fuelcell locomotives and their applications." In: Proceedings of the Fuel Cells 2000 Conference, Lucerne, Switzerland, 10-14 July 2000.

A. R. Miller, "The fuel cell as a replacement for the diesel engine in underground mining." In: Proceedings of the Canadian Mining Diesel Conference, Toronto, Ontario, 21-22 October 1998.

A. R. Miller, T. J. Moreland, G. C. Donovan, and E. P. Richards, "Birth clustering." In: Proceedings of the Social Statistics Section, American Statistical Association, Anaheim, California, 6-9 August 1990.

A. R. Miller and E. P. Richards, "Statistical analysis of medical malpractice costs: Analysis of incident reporting times." In: Proceedings of the Business and Economic Statistics Section, American Statistical Association, Washington, D.C., August 1989.

CONFERENCE PRESENTATIONS AND SESSION CHAIRMANSHIPS

- A. R. Miller, "Supersonic Transport with Zero Carbon Emissions." 19-26 Oct 2011
Clean and Sustainable Energy: Hydrogen Energy; Session Chair, Space and Aeronautic Applications
Low Carbon Earth Summit 2011
Dalian, China
- A. R. Miller, "Hydrogen Fuel-Cell Locomotive: Switching and Power-to-Grid Demonstrations." 22-26 May 2011
9th World Congress on Railway Research
Best Presentation Award: Challenge B – An environmentally friendly railway
Lille, France
- "Hydrogen Railway Locomotive: Largest Fuel-Cell Land Vehicle" 15-17 Sep 2010
10th International Conference on Clean Energy (ICCE-2010)
Famagusta, N. Cyprus
- Session Chair, Alternative Transportation Fuels Session 15-17 Sep 2010
10th International Conference on Clean Energy (ICCE-2010)
Famagusta, N. Cyprus
- "Aerodynamics in a Hydrogen Atmosphere: Supersonic Tube Vehicle" 25-28 Jul 2010
46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit
and 8th Annual International Energy Conversion Engineering Conference
Nashville, Tennessee
- "Supersonic Hydrogen Tube Vehicle: Mach 2.8 with Low Energy" 27-30 Jun 2010
5th International Ege Energy Symposium and Exhibition (IEESE-5)
Denizli, Turkey
- Session Chair, Recent Advances in Hydrogen I 27-30 Jun 2010
Session Chair, Recent Advances in Hydrogen II
5th International Ege Energy Symposium and Exhibition (IEESE-5)
Denizli, Turkey
- "Hydrogen Fuel-Cell Railway Locomotive for the Los Angeles Basin" 3-6 May 2010
National Hydrogen Association Conference and Expo
Long Beach, CA
- "Fuelcell-Hybrid Shunt Locomotive: Largest Fuelcell Land Vehicle" 13-15 Apr 2010
Institution of Engineering and Technology's International Conference
on Railway Traction Systems (RTS 2010)
Birmingham, United Kingdom

- Session Chair, Modelling and Simulation Session 13-15 Apr 2010
Institution of Engineering and Technology's International Conference
on Railway Traction Systems (RTS 2010)
Birmingham, United Kingdom
- "Operation of a fuelcell-hybrid switch locomotive for the Los Angeles Basin:
The largest fuel-cell land vehicle." 16-19 Nov 2009
2009 Fuel Cell Seminar
Palm Springs, California
- Panel Discussion Member, Heavy-duty Vehicles and Off-road Applications 29 Sep 2009
Staff Workshop for the 2010-2011 Investment Plan
California Energy Commission
Sacramento, California
- "Keynote Address: Present and Future Hydrogen-Fuelcell Locomotives" 26-28 Aug 2009
World Hydrogen Technologies Conference (WHTC) 2009
New Delhi, India
- "Largest Fuelcell Land Vehicle: A Hybrid Shunt Locomotive for Los Angeles" 13-16 May 2009
EVS-24 International Battery, Hybrid and Fuel Cell Electric Vehicle Symposium
Stavanger, Norway
- "Fuelcell-Hybrid Switch Locomotive for Los Angeles: Test Results (Part 1)" 31 May-3 Jun 2009
Hydrogen + Fuel Cells 2009
Vancouver, British Columbia
- "Hydrogen-Fuelcell Hybrid Switch Locomotive for the Los Angeles Basin" 25-28 Apr 2009
American Short Line and Regional Railroad Association (ASLRRA) Convention
Las Vegas, Nevada
- "Supersonic Hydrogen Tube Vehicle: Speed and Energy Comparisons with Road,
Rail, Air, and Maglev Transport" 1-3 Apr 2009
HYPOTHESIS VIII (Hydrogen-Power Theoretical and Engineering Solutions
International Symposium)
Lisboa, Portugal
- "The BNSF Fuelcell-Hybrid Switch Locomotive for the Los Angeles Basin" 23-25 Mar 2009
Faster Freight-Cleaner Air 2009
Long Beach, California
- "Hydrogen Fuelcell Rail Vehicles: Past, Present, and Future" 31 Oct-6 Nov 2008
ASME International Mechanical Engineering Congress & Exposition
Boston, Massachusetts
- "Maintenance of the BNSF Fuelcell-Hybrid Switch Locomotive" 21-24 Sep 2008
Locomotive Maintenance Officers Association Meeting
Chicago, Illinois
- "Hydrogen Fuelcell Rail Vehicles: Past, Present, and Future" 15-19 Jun 2008
17th World Hydrogen Energy Conference
Brisbane, Australia

- “Zero-Emission, Hydrogen-Fuelcell Locomotive for Urban Rail” 18-22 May 2008
World Congress on Railway Research 2008
Seoul, Korea
- “Fuelcell and Fuelcell-Hybrid Vehicles for Mining” 20-24 Apr 2008
Mine Design, Operations & Closure Conference
Butte, Montana
- “Fuelcell Locomotives for Zero-Emissions Urban Rail” 23-25 Oct 2007
Railroad Environmental Conference
Urbana, Illinois
- “Near-term Fuelcell Locomotives for Urban Rail Applications” 25-27 Sep 2007
Tenth Grove Fuelcell Symposium
London, England
- “Fuelcell Hybrid Switcher Locomotive: Engineering Design” 13-14 Sep 2007
Locomotive Maintenance Officers Association Meeting
Chicago, Illinois
- “System Design of a Large Fuelcell Hybrid Locomotive” 18-20 Jun 2007
ASME Fifth International Fuelcell Science, Engineering & Technology Conference
New York City, New York
- “Fuelcell Locomotives for Seaports and Power-to-Grid Applications” 30 May-1 Jun 2007
Second European Ele-Drive Transportation Conference (EET 2007)
Brussels, Belgium
- “Fuelcell Hybrid Switcher Locomotive for Seaports” 29 Apr-2 May 2007
Hydrogen and Fuelcells 2007
Vancouver, British Columbia
- “Fuelcell Aspects and Future Developments Needed for Mining” 29 Apr 2007
First International Symposium in Fuelcells Applied to Mining (CIM)
Montreal, Quebec
- “Comparison of Practical Hydrogen-Storage Volumetric Densities” 19-22 Mar 2007
NHA Annual Hydrogen Conference
San Antonio, Texas
- “Fuelcell Locomotives for Urban Rail Applications” 26-28 Feb 2007
Faster Freight - Cleaner Air 2007
Long Beach, California
- “Fuelcell Mine Loader” 13-17 Nov 2006
Fuel Cell Seminar 2006
Honolulu, Hawaii
- “Variable Hybridity Fuelcell Locomotive” 25-26 Oct 2006
H₂Expo International Conference and Trade Fair on Hydrogen and Fuel Cell Technologies
Hamburg, Germany

- “Ammonia Fuel for Rail Transportation” 9-10 Oct 2006
Ammonia Conference 2006
Denver, Colorado
- “Variable Hybridity Fuelcell-Battery Switcher” 17-20 Sep 2006
Locomotive Maintenance Officers Association Meeting
Chicago, Illinois
- “Reversible Metal-Hydride Storage for a Fuelcell Mine Loader” 11-13 Sep 2006
Intertech-Pira Hydrogen Forum
Vancouver, British Columbia
- “Technical Issues in Development of a Variable Hybridity Fuelcell Locomotive” 6-7 Jun 2006
Hydrogen Train and Hydrail Conference
Herning, Denmark
- “Fuelcell Hybrid Locomotives: Applications and Benefits” 4-6 Apr 2006
Joint Rail Conference 2006
Atlanta, Georgia
- “Fuelcell Hybrid Locomotives for Urban Switchyards” 30 Jan-1 Feb 2006
Faster Freight - Cleaner Air 2006
Long Beach, California
- “Analysis of Fuelcell Hybrid Locomotives” 3-6 Oct 2005
Ninth Grove Fuel Cell Symposium
London, England
- “Fuelcell Locomotives” 18-20 Sep 2005
Locomotive Maintenance Officers Association Meeting
Chicago, Illinois
- “Technical Challenges of Large Fuelcell Vehicles” 4-8 Jul 2005
European Fuel Cell Forum
Lucerne, Switzerland
- “Fuel Cell Rail” 8 May 2005
First International Hydrail Conference
Charlotte, North Carolina
- “Ammonia Fuelcell Locomotives” 8-10 Mar 2005
Global Alternative Fuels Forum 2005
Berlin, Germany
- “Fuel Cell Locomotive” 29 Nov-2 Dec 2004
France Deutschland Fuel Cell Conference
Belfort, France
- “Fuelcell Locomotives for Commercial and Military Railways” 3-5 Nov 2004
2004 Fuel Cell Seminar
San Antonio, Texas

- “Fuelcell Locomotives for Commercial and Military Railways” 10 Jun 2004
Fuel Cell 2004 Conference
Denver, Colorado
- “Defense Fuelcell Locomotive Project” 29 Mar 2004
Military Fuel Cells Conference
Las Vegas, Nevada
- “Defense Fuelcell Locomotive Project” 26 Feb 2004
WestStart Clean Heavy-Duty Vehicle Conference
Palm Springs, California
- “DOD Fuelcell Locomotive Project” 20 Oct 2003
Military Fuel Cells Conference
Alexandria, Virginia
- “The Fuel Cell Locomotive Project” 7 Oct 2003
Railways and Environment Workshop
Winnipeg, Canada
- “Loader and Army Locomotive Projects” 4 Jul 2003
European Fuel Cell Forum’s Fuel Cells 2003
Lucerne, Switzerland
- “The Fuelcell Mining Vehicles Development Program: An Update” 5 May 2003
Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Conference and Exhibition
Montréal, Canada
- “Fuelcell Locomotives” 4 Jul 2002
European Fuel Cell Forum’s Fuel Cells 2002
Lucerne, Switzerland
- “Fuelcell-Powered Skidsteer Loader” 21-22 Feb 2002
Touchstone Energy’s New and Emerging Technologies Conference
Tucson, Arizona
- “Fuelcell Mine Vehicle Update” 6-8 Nov 2001
Mining Diesel Emissions Conference
Markham, Canada
- “Fuelcell Mine Loader” 8- 9 Mar 2001
Salt Institute Annual Meeting
Naples, Florida
- “Fuelcell Mine Loader” 14-16 Feb 2001
Randol Mexico Mining Conference 2001
Puerto Vallarta, Mexico
- “The Fuelcell Locomotive of the Fuelcell Propulsion Institute” 7 Nov 2000
International Seminar of Fuel Cells for Transportation
Mexico City, Mexico

- “Tunneling and Mining Applications of Fuel Cell Vehicles” (poster session) 1-3 Nov 2000
2000 Fuel Cell Seminar
Portland, Oregon
- “Least-Cost Hybridity Analysis of Industrial Fuel Cell Vehicles” 11-12 Sep 2000
Intertech Conference on Hybrid Vehicles
Windsor, Canada
- “Underground Fuelcell Locomotives and their Applications” 1-14 Jul 2000
European Fuelcell Forum’s Fuel Cells 2000
Lucerne, Switzerland
- “Fuel Cell Powered Shuttle Cars” 9 Jun 2000
Central Appalachian Section, Society of Mining Engineers
Abingdon, Virginia
- “Commercialization of Fuelcell Underground Locomotives” 1-14 Apr 2000
Intertech Conference’s Commercializing Fuel Cell Vehicles 2000
Berlin, Germany
- “Fuelcell Vehicles as a Solution to Health and Safety Problems in Underground Mining” May 1999
Mines and Aggregates Safety and Health Association (MASHA)
Sudbury, Ontario
- "The Fuel Cell as a Replacement for the Diesel Engine in Underground Mining" 21-22 Oct 1998
Canadian Mining Diesel Conference
Toronto, Ontario
- "Ammonia Fuel Cell Vehicles" 23-24 Jan 1996
World Car Conference 96
Riverside, California
- “Birth Clustering” 6-9Aug 1990
Social Statistics Section, American Statistical Association
Anaheim, California
- “Statistical analysis of medical malpractice costs: Analysis of incident reporting times” Aug 1989
Business and Economic Statistics Section, American Statistical Association
Washington, D.C.