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FUEL CELL CONNECTION – May 2004 Issue

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News on U.S. Government Fuel Cell Programs

1. Sandia National Lab Develops New PEMFC

Sandia National Laboratory is developing a new type of polymer electrolyte membrane for micro fuel cells, which could operate at temperatures as high as 140 degrees C, and produce a peak power of 1.1 watts per square centimeter at 80 degrees C. The new material, Sandia Polymer Electrolyte Alternative (SPEA), can deliver higher power outputs with methanol and hydrogen than Nafion, the current state-of-the-art PEM material for fuel cells.

<http://www.newswise.com/p/articles/view/504831/>

2. PNNL Researchers Demonstrate Quick-Starting Compact Steam Reformer

Researchers at Pacific Northwest National Laboratory have demonstrated a compact steam reformer that can produce large amounts of hydrogen-rich gas from a liquid fuel in only 12 seconds. Past problems with fuel reformers for fuel cells have included start up times of about 15 minutes, which would be unacceptable for vehicle applications.

http://www.ornl.gov/info/news/pulse/pulse_v158_04.htm

3. LANL Creates Hydrogen & Fuel Cell Research Institute

Los Alamos National Laboratory has created the Institute for Hydrogen and Fuel Cell Research, a partnership between the Lab's Chemistry and Materials Science and Technology divisions, to address technical issues and solutions to enable hydrogen and fuel cell technologies.

http://www.ems.org/rls/2004/05/21/los_alamos_creat.html

4. DOE National Science Bowl Students Design Hydrogen Fuel Cell Model Cars

The Department of Energy's National Science Bowl announced the winners of its second annual Hydrogen Fuel Cell Model Car Challenge. University High School of Morgantown, West Virginia, won first place in the Grand Prix speed race, and Chaska High School of Minnesota, climbed a 48-degree incline with its team's model. Each first place team receives \$1,500 for its school's science department. With model car kit components provided by General Motors, the teams designed and built small hydrogen vehicles with technical assistance from DOE engineers.

http://www.energy.gov/engine/content.do?PUBLIC_ID=15780&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

5. DOE, General Motors Announce Participants in CHALLENGE X Competition

DOE and General Motors announced the seventeen university teams that will participate in CHALLENGE X, a competition in which engineering students across North America will modify a Chevrolet Equinox compact SUV to explore advanced technologies to reduce the environmental impact of the vehicles.

http://www.energy.gov/engine/content.do?PUBLIC_ID=15862&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

6. NASA to Host Technology Showcase

NASA Glenn Research Center will host a Technology Showcase, "Exploring the Advantage of Partnering with NASA Glenn Research Center," June 11, 2004. Key enabling technology areas of interest to the Center include materials, power, and bioengineering. Presentations will be given on Ohio's Third Frontier Program, as well as the upcoming NASA SBIR solicitation.

<http://www.grc.nasa.gov/WWW/2004/techshowcase/index.htm>

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**New Government Publications Posted**  
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7. ATP R&D Evaluation Toolkit Published

The Advanced Technology Program (ATP) of the Department of Commerce National Institute of Standards and Technology has published a new report, *A Toolkit for Evaluating Public R&D Investment*. The report focuses on more than 40 evaluations that have been performed for ATP, and the advantages and disadvantages of a variety of evaluation approaches, including surveys, case studies, bibliometrics, historical tracing and expert judgment. The report is free online.

<http://www.atp.nist.gov/eao/gcr03-857/contents.htm>

8. Global Vehicle Study Published by Breakthrough Technologies Institute and DOE

The Breakthrough Technologies Institute, with funding from the Department of Energy, has published "Fuel Cell Vehicle World Survey 2003," with profiles of more than three dozen companies testing cars, trucks, buses and specialty vehicles worldwide. The 132-page report is available for free online.

<http://www.fuelcells.org/info/charts/vehiclestudy.pdf>

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**RFP/Solicitation News**  
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9. Hydrogen Photoproduction Technology Licensing Opportunity

The National Renewable Energy Laboratory (NREL) is soliciting companies interested in a strategic alliance to develop and commercialize technology to produce hydrogen from green algae in the presence of oxygen. Deadline for responses is June 10, 2004.

<http://www.eps.gov/spg/DOE/NREL/NR/PhHy56/SynopsisP.html>

10. Hydrogen Basic Research Solicitation Issued

DOE's Office of Basic Energy Sciences is accepting grant applications for projects on basic research for the Hydrogen Fuel Initiative. Areas of focus include: Novel Materials for Hydrogen Storage; Membranes for Separation, Purification, and Ion Transport; Design of Catalysts at the Nanoscale; Solar Hydrogen Production; and Bio-Inspired Materials and Processes. \$12 million is expected to be available. Pre-applications are due July 15, 2004.

<https://e-center.doe.gov/iips/faopor.nsf/UNID/467527601D6D8D5585256E830043045A?OpenDocument>

11. *Agriculture Funds Available for Hydrogen, Fuel Cell Energy Technologies*

The Department of Agriculture's Rural Development program has announced the availability of up to \$22.8 million in competitive grant funds for FY2004 so that agricultural producers and rural small businesses can purchase renewable energy systems, including fuel cells running on hydrogen from renewable sources. Applications are due on or around July 19, 2004.

<http://www.rurdev.usda.gov/rbs/farmbill/resources.html>

12. *World Bank, IFC Announce RFP for DG Fuel Cells Financing Initiative*

International Finance Corporation (IFC), the funding arm of the World Bank, issued an RFP for Stage 1 of its Fuel Cell Financing Initiative (FCFI). FCFI has a total of \$54 million from IFC, \$9 million of which is for Stage 1 projects from 2004-2008. FCFI provides \$2000/kW, or 50% of total capital costs for projects. IFC expect to fund up to three commercial demonstration projects, with a maximum subsidy of \$3 million per project, through this RFP. Deadline for applications is August 27, 2004. <http://www.ifc.org/ifcext/enviro.nsf/Content/FuelCell>

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**Contract / Funding Awards**  
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13. *Ion America Receives Funding from Office of Naval Research*

Ion America received a \$2.7 million contract from the Office of Naval Research for a project titled "Advanced Development of Solid Oxide Stack Components for Primary and Regenerative Fuel Cell Applications."

<http://www2.eps.gov/spg/DON/ONR/ONR/Awards/N0001404C0223.html>

14. *Army CERL Awards PEM Fuel Cell Project Contract to MSU-Billings*

The U.S. Army Corps of Engineers' Construction Engineering Research Laboratory (CERL) has awarded a \$185,835 contract to Montana State University-Billings for the installation and operation of a 2.5-kW PEM fuel cell developed by Plug Power.

http://www.dodfuelcell.com/PR_MSU-BillingsPEM_Project.pdf

15. *Illinois Coalition Receives Grant for Hydrogen Fueling Station*

The Illinois Coalition has received a \$54,000 grant from the Illinois Clean Energy Community Foundation to develop the state's first hydrogen fueling station powered by renewable sources.

The hydrogen will be generated by solar and wind energy, for use providing stationary heat and power for an airport building and transportation fuel for zero emission airport vehicles.

<http://www.ilcoalition.org>

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**State Activities**  
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16. *California Hydrogen Highway Program Posts Draft Implementation Plan*

California's Hydrogen Highway Plan has posted a draft "Implementation Plan for Developing a California Hydrogen Highway Network Blueprint." A final Blueprint Plan is due to the Governor and the Legislature by January 1, 2005. The first Topic Team Meeting of the California Hydrogen Blueprint Plan is set for June 4, 2004, in Sacramento, California. Presentations from the May 20 Implementation Advisory Kick-off Meeting are also available online.

<http://www.hydrogenhighway.ca.gov/whatsnew/whatsnew.htm>

17. Enterprise Florida Approves Hydrogen Energy Industry as Qualified Target Industry
Enterprise Florida has approved the designation of the hydrogen energy industry as a Qualified Target Industry (QTI). The designation will allow for incentives such as refunds on corporate income, sales and *ad valorem* taxes, to businesses investing in Florida's hydrogen economy.
<http://www.dep.state.fl.us/secretary/news/2004/may/0519.htm>

18. North Carolina Solar Center Publishes Reports on Fuel Cell Incentives
The North Carolina Solar Center has published two reports on state-level incentives that include stationary fuel cells among eligible technologies. The two reports are titled *Financial Incentives for Stationary Fuel Cells: A Report on State-Level Policy in the United States*, and *Developments in State-Level Financial Incentives for Stationary Fuel Cells in the United States, 2003-2004*.
http://www.ncsc.ncsu.edu/news/news_story.cfm?ID=155

19. Fuel Cell Helps Power MI Alternative and Renewable Energy Center
The Michigan Alternative and Renewable Energy Center has officially opened, featuring fuel cell, solar and battery systems that allow the Center to run independent of the electric grid.
<http://medc.michigan.org/AdvMfg/news/combo.asp?ContentId=05B6E4E7-3E9C-45F8-AAFA-F4E0B347AE4D&QueueId=1&ContentTypeId=13>

20. Colorado Schools Participate in First Hydrogen Fuel Cell Car Competition
Seventy-five teams from 24 Colorado schools participated in the first ever Hydrogen Fuel Cell car competition hosted by the National Renewable Energy Laboratory. Trophies were awarded for both stock class cars and open class cars in the hydrogen competition.
http://www.nrel.gov/news/press/2004/2704_energy_education_event.html

21. Minnesota Renewable Hydrogen Initiative Reports on Forum
The Minnesota Renewable Hydrogen Initiative held a forum at the University of Minnesota, attended by representatives from industry, government, educational institutions and non-profit organizations. The Initiative is interested in the use of ethanol as a source of hydrogen for fuel cell vehicles. Presentations from past forums are available online.
<http://www.moea.state.mn.us/p2/forum.cfm>

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**University Activities**  
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22. Fuel Cell Business Plan Wins First Place in UC Berkeley Competition
The 2004 Business Plan Competition at the University of California, Berkeley, Haas School of Business has awarded first prize to Proton Power, for its solid acid fuel cell technology that will serve as auxiliary power units for long-haul freight trucks, saving the average trucker an estimated \$2,600 annually in fuel costs.
http://www.berkeley.edu/news/media/releases/2004/05/03_bizplan.shtml

23. Delphi Awards \$100,000 to Kettering University for Fuel Cells
Kettering University received a four-year, \$100,000 grant from Delphi, to further the development of the university's Center for Fuel Cell Systems and Powertrain Integration.

<http://medc.michigan.org/AdvMfg/news/combo.asp?ContentId=74062941-6F72-4C7F-B08C-2E6270A3E45D&QueueId=1&ContentTypeld=13>

24. University of Victoria Wins First Hydrogen University Design Contest

A team of students from the University of Victoria in British Columbia won the grand prize in the Department of Energy's first Hydrogen University Design contest, the Hydrogen Fueling Station Design Competition. The team received an all-expense paid trip to the National Hydrogen Association's 15th Annual Hydrogen Conference and Hydrogen Expo USA. DOE is soliciting ideas for next year's design competition.

<http://www.h2ucontest.org>

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**Industry Headlines**  
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25. Fuel Cell Lift Trucks to Be Demonstrated at Wal-Mart Distribution Center

Cellex Power announced the logistics subsidiary of Wal-Mart Stores will participate in a set of field trials to test fuel cell products for powering electric lift trucks.

http://www.cellexpower.com/about_news.php

26. DaimlerChrysler, UPS, and EPA Collaborate on Fuel Cell Delivery Vehicle Application

DaimlerChrysler, the Environmental Protection Agency and UPS delivery company are collaborating on the development and demonstration of fuel cell powered delivery vehicles. UPS is using an F-Cell fuel cell vehicle on an established daily express-delivery route in Southeast Michigan. The vehicle is fueled at a hydrogen refueling station at the EPA National Vehicle and Fuel Emissions Laboratory.

<http://media.prnewswire.com/en/jsp/latest.jsp?resourceid=2672714&access=EH>

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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at bernie@usfcc.com.

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**About Fuel Cell Connection**  
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The Sponsors

U.S. Fuel Cell Council -- The U.S. Fuel Cell Council is the business association for anyone seeking to foster the commercialization of fuel cells in the United States. Our membership includes producers of all types of fuel cells, as well as major suppliers and customers. The Council is member driven, with eight active Working Groups focusing on: Codes & Standards; Transportation; Power Generation; Portable Power; Stack Materials and Components; Sustainability; Government Affairs; and Education & Marketing. The Council provides its

members with an opportunity to develop policies and directions for the fuel cell industry, and also gives every member the chance to benefit from one-on-one interaction with colleagues and opinion leaders important to the industry. Members also have access to exclusive data, studies, reports and analyses prepared by the Council, and access to the "Members Only" section of its web site.

[\(http://www.usfcc.com/\)](http://www.usfcc.com/)

National Fuel Cell Research Center -- The mission of the NFCRC is to promote and support the genesis of a fuel cell industry by providing technological leadership within a vigorous program of research, development and demonstration. By serving as a locus for academic talent of the highest caliber and a non-profit site for the objective evaluation and improvement of industrial products, NFCRC's goal is to become a focal point for advancing fuel cell technology. By supporting industrial research and development, creating partnerships with State and Federal agencies, including the U.S. Department of Energy (DOE) and California Energy Commission (CEC), and overcoming key technical obstacles to fuel cell utilization, the NFCRC can become an invaluable technological incubator for the fuel cell industry.

[\(http://www.nfcrc.uci.edu/\)](http://www.nfcrc.uci.edu/)

National Energy Technology Laboratory -- The National Energy Technology Laboratory is federally owned and operated. Its mission is "*We Solve National Energy and Environmental Problems.*" NETL performs, procures, and partners in technical research, development, and demonstration to advance technology into the commercial marketplace, thereby benefiting the environment, contributing to U.S. employment, and advancing the position of U.S. industries in the global market.

<http://www.netl.doe.gov>