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**FUEL CELL CONNECTION – December 2004 Issue**  
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News on U.S. Government Fuel Cell Programs

1. President Nominates Bodman for DOE Secretary

President Bush has nominated Samuel W. Bodman for Secretary of the Department of Energy. Bodman currently serves as the Deputy Secretary of the Department of Commerce and is a chemical engineer by training.

http://www.energy.gov/engine/content.do?PUBLIC_ID=16982&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

2. USPS to Install Fuel Cell at San Francisco Processing Center

The U.S. Postal Service will install a 250-kW Direct FuelCell® manufactured by FuelCell Energy at the San Francisco Processing and Distribution Center as part of the facility's major energy efficiency upgrades that are expected to lower annual electricity purchases by \$1.2 million.

http://investor.internationalpaper.com/ireye/ir_site.zhtml?ticker=IP&script=410&item_id=648858&ayout=23

3. INEEL Researchers Achieve Milestone in Hydrogen Research

Researchers at the Idaho National Engineering and Environmental Laboratory and Ceramatec achieved a major advancement in the production of hydrogen from water using high-temperature electrolysis. The researchers demonstrated a rate of 50 normal liters per hour hydrogen production, showing that hydrogen can be produced by enhancing the efficiency of conventional electrolysis with the addition of substantial external heat, such as steam from an advanced nuclear reactor system.

http://newsdesk.inel.gov/press_releases/2004/11-29hydrogen_production.htm

4. DOD Program to Demonstrate Fuel Cells in New Zealand

As part of the U.S. Department of Defense PEM Residential Fuel Cell Demonstration Program, a 2-kW fuel cell supplied by ReliOn will be installed at the International Antarctic Centre in Christchurch, New Zealand, where it will power a range of activities from battery charging to yard lighting. http://www.dodfuelcell.com/NewZealand_Press.pdf

5. Medis Demonstrates Fuel Cell Power Packs for Armed Forces

Medis Technologies demonstrated 5-Watt micro fuel cell Power Packs to General Dynamics C4 Systems, for potential use by the Armed Forces in extending the mission endurance of tactical computing and communications devices.

<http://www.medistechnologies.cm/show-news.asp?ID=72>

6. DOE Completes "Hydrogen 101" Workshop Series

The Department of Energy has completed the last of six "Hydrogen 101" education workshops geared toward state and local government officials. Workshops were held in Orlando (FL), Lansing (MI), Austin (TX), Annapolis (MD), Albany (NY), and Portland (OR).

[http://www.energy.gov/engine/content.do?PUBLIC_ID=17006&BT_CODE=PR_PRESSRELEASE
S&TT_CODE=PRESSRELEASE](http://www.energy.gov/engine/content.do?PUBLIC_ID=17006&BT_CODE=PR_PRESSRELEASE&S&TT_CODE=PRESSRELEASE)

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**New Government Publications Posted**  
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7. DOE Posts 2004 H2FC&IT Annual Progress Report Online

The Department of Energy has posted online the Annual Progress Report for its Hydrogen, Fuel Cell & Infrastructure Technologies Program, summarizing the program's R&D activities and accomplishments for 2004.

http://www.eere.energy.gov/hydrogenandfuelcells/annual_report04.html

8. CRS Reports on FreedomCAR and Hydrogen Fuel Initiative

The Congressional Research Service has published "Hydrogen and Fuel Cell Vehicle R&D: FreedomCAR and the President's Hydrogen Fuel Initiative," which examines the organization, goals, funding, and legislation relevant to the partnerships.

http://trb.org/news/blurb_detail.asp?id=4489

9. NETL Posts New Fact Sheets on Hydrogen Production

The National Energy Technology Laboratory has posted online two new fact sheets: "Hydrogen Production from H₂S and H₂S-Containing Waste Gases" and "Production of Hydrogen from Natural Gas and H₂S-Containing Natural Gas."

<http://www.netl.doe.gov/publications/factsheets/r&d/R&D036.pdf>

<http://www.netl.doe.gov/publications/factsheets/r&d/R&D037.pdf>

10. SoldierTech Article Highlights Military Fuel Cell R&D

A recent article in SoldierTech news provides highlights of some of the fuel cell R&D being conducted by the U.S. military. One of the programs described is the Army "Mobile Integrated Sustainable Energy Recovery" (MISER) program, which converts plastic garbage from field operations into generator fuel that can be used in a fuel cell.

http://www.military.com/soldiertech/0,14632,Soldiertech_Fuel,,00.html

11. Sandia Micro Fuel Cell Program Update

A new article in the *Sandia Technology* newsletter provides an update on the status of the national lab's development of a new type of membrane – the Sandia Polymer Electrolyte Alternative (SPEA) – for PEM fuel cells. According to the article, the membrane research team "demonstrated that the new SPEA could operate as high as 140 degrees Celsius."

<http://www.sandia.gov/news-center/publications/sandia-technology/2004/st2004v6no3.pdf>

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**RFP/Solicitation News**  
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12. Department of Veterans Affairs Issues RFP for Co-Generation Energy Centers in PA

The U.S. Department of Veterans Affairs issued a Request for Proposals for the financing, development, construction, operation, management and maintenance of a proposed co-generation energy center at one or more facilities in the state of Pennsylvania. Each proposal

must address the possibilities for the utilization of renewable energy technologies and alternative fuels, and include in its consideration any incentives that could be applied towards reducing the cost of implementing such technologies or fuels. Deadline for proposals is January 27, 2005.
<http://www.faacllc.com/bid/cgi-bin/controller.pl?action=showIndex>

13. CA Energy Commission Accepting Proposals for EISG Program

The California Energy Commission is now accepting proposals under its Energy Innovations Small Grant (EISG) Program Solicitation. EISG is a component of the CEC Public Interest Energy Research Program, and supports the early development of promising new energy technology concepts. A maximum of \$75,000 is available to awardees per grant project. Approximately \$2.4 million total is available for this solicitation. Past grants have been awarded to fuel cell and hydrogen projects. Deadline for grant applications is February 1, 2005.
<http://www.energy.ca.gov/contracts/smallgrant/index.htm>

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**Contract / Funding Awards**  
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14. Navy Awards Technical Validation Contract to Hoku Scientific

The Naval Air Warfare Center Weapons Division intends to issue a sole source procurement to Hoku Scientific for technical validation of a new membrane electrode assembly incorporating a novel non-fluorinated membrane for use in low operating temperature PEM fuel cells. The procurement is intended to validate Hoku MEA as an alternative to PTFE-based commercial MEA in an operating 1-kW fuel cell.
<http://www1.eps.gov/spg/DON/NAVAIR/dept2/N6893605R0010/SynopsisP.html>

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**State Activities**  
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15. California Publishes Update to Integrated Energy Policy Report

The California Energy Commission has published a 2004 update to the 2003 Integrated Energy Policy Report. The update notes the April 2004 announcement of the Hydrogen Highway Initiative, and states that the Governor is scheduled to release his "vision of a network of hydrogen fueling stations in a Blueprint Plan" by January 1, 2005. The Commission is required to adopt an Integrated Energy Policy Report every two years and an update every other year.
http://www.energy.ca.gov/2004_policy_update/

16. Florida Energy Office Establishes Hydrogen Program Web Site

The Florida Energy Office has established a web site for its hydrogen program, H2 Florida. The web site provides details on the state's vision, goal and objectives for the program.
http://www.dep.state.fl.us/energy/fla_energy/hydrogen.htm

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**Legislation / Regulations**  
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17. PA PUC Seeks Comments on Proposed Interconnection Rulemaking

The Pennsylvania Public Utility Commission is initiating an Advanced Notice of Proposed Rulemaking (ANOPR) concerning small generation interconnection standards and procedures in order to standardize the way in which small generation connects to the distribution grid. Comments are being solicited on both technical requirements and interconnection procedures. Comments should indicate the appropriate generation size suitable for small generation interconnection standards and procedures. Comments are due 60 days after the December 4 publication of the ANOPR.

<http://www.pabulletin.com/secure/data/vol34/34-49/2147.html>

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**Industry Headlines**  
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18. MTI MicroFuel Cells Launches First MOBION™ Product

MTI MicroFuel Cells' first Mobion™ micro fuel cell product has been integrated into a portable radio frequency identification reader from Intermec Technologies Corporation. The fuel cell provides instant, cord-free recharging, and a run time of three to five times longer compared to existing Li-Ion battery technology.

<http://www.mechtech.com/newsandevents/article.asp?id=197>

19. Dow, GM Launch Phase II of Industrial Fuel Cell Program

Dow and General Motors have launched Phase II of their joint project to ultimately install up to 400 fuel cells at Dow facilities. During Phase II, the fuel cell pilot plant will be integrated into Dow's chemical and plastics production facility, supplying up to 1 megawatt of energy for use in the company's Texas Operations.

http://www.dow.com/dow_news/corporate/2004/20041129b.htm

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**University Activities**  
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20. University Fuel Cell Roundup

(summaries contributed by Kathy Haq, Dir. of Outreach and Communications, National Fuel Cell Research Center, UC Irvine, khaq@nfcrc.uci.edu)

A renewable hydrogen-based fuel made from charred peanut shells will soon be tested in buses at the University of Georgia. The fuel is being developed by Donald C. Reicosky, an Agricultural Research Service soil scientist at the North Central Soil Conservation Research Laboratory in Morris, MN, working in conjunction with inventor Danny Day, president of Eprida, a technology and development company in Athens, GA. Day has a patent-pending process to turn agricultural biomass into hydrogen fuel and charcoal fertilizer, and is, in turn, working closely with U.S. Department of Energy scientists who hold a patent on related technology. (18-Nov-2004, *Southwest Farm Press*)

Case Western Reserve University in Cleveland, Ohio, has retained The Stubbins Associates of Cambridge, MA, and Philadelphia-based Kling to provide architectural and engineering design services for The Cleveland Center for Structural Biology and The Wright Fuel Cell Group facility. Once completed, the one-story, 18,500-square-foot building will house both CCSB's Nuclear Magnetic Resonance facility, and the Advanced Power Institute's Fuel Cell Laboratory. Case is the lead institution of The Wright Fuel Cell Group, which began its work as The Power Partnership for Ohio, a group of industry, government, nonprofit and educational institutions

dedicated to developing the commercial potential of fuel cells in Ohio. Construction began in August, with occupancy expected summer of 2005. (19-Nov-2004, *contractmagazine.com*)

A partnership involving the University of Washington is poised to begin a three-year study of hydrogen production from water using high-temperature electrolysis. This development is viewed as a crucial first step toward large-scale production of hydrogen from water rather than fossil fuels. Other partners are Ceramatec, Inc. of Salt Lake City; the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory; and Hoeganaes Corp. in New Jersey. The study will be based on a hybrid solid oxide fuel cell that is capable of co-generating high-purity hydrogen and electric power from natural gas. (6-Dec-2004, *Aberdeen Press and Journal*)

A research team led by Bruce Tatarchuk of Auburn University has developed filters made from microfibrinous materials that could help save thousands of lives by removing carbon monoxide from fires at a rate 10 times more efficient than filters currently on the market. Tatarchuk, an AU professor of chemical engineering, and his research team developed the microfibrinous materials to block carbon monoxide from fuel cells — Tatarchuk's chief area of research. The team realized that because the material — called MiniOx (miniaturized carbon monoxide oxidation technology) — is more efficient, thinner and longer lasting than other materials used for filters, it could have applications beyond fuel cells. (8-Dec-2004, *Newswise: Auburn University*)

A partnership of New Mexico's laboratories, universities and research institutions will ask the New Mexico Legislature for \$42 million to build six "centers of technical excellence" in fields ranging from fuel cells to digital media. The nonprofit Technology Research Collaborative would use the funding to create the centers, which officials say would eventually create more than 13,000 jobs. The centers would include the Center for Hydrogen, Fuel Cells and End Users Technologies, led by New Mexico Tech with the help of all the state's labs and the members of Hydrogen Technology Partnership, or HyTeP, a state-created group of company officials and researchers that aims to capitalize on fuel cell research in the state. (9-Dec-2004, *Albuquerque Journal*)

Scientists at Rice University and the University of Texas Health Science Center at Houston have done some of the first work with the interaction of cells and nanotubes, tiny cylinders of carbon atoms slightly larger than a molecule of water. A nanotube is about 10,000 times smaller than a white blood cell. Researchers and industry see far-ranging potential in nanotubes because of their unique properties, such as incredible strength at minimal weight and electrical conductivity. Potential products include more efficient fuel cells and energy transmission. Scientists are trying to determine how nanotubes and other nanomaterials might interact with humans and the environment. (14-Dec-2004, *The Houston Chronicle*)

Vanderbilt University chemistry professor Chuck Lukehart has accepted a \$50,000 grant from Honda to fund breakthrough enhancements in fuel cell technology. The first Vanderbilt recipient of the award, Lukehart was one of five researchers, and the only chemist, selected this year to receive the annual Honda Initiation Grant. His research group will work with Honda researchers to optimize the synthesis of nanometal materials to be used as electro-catalysts in automobile fuel cells in the future. The Honda grant, established in 1997, is awarded to facilitate collaborations with Honda researchers. Other award winners are researchers from Iowa State University, University of Notre Dame, University of Minnesota and Purdue University. (20-Dec-2004, *Vanderbilt Hustler via University Wire*)

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**Administration**  
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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

US Fuel Cell Council -- The US 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/)

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