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FUEL CELL CONNECTION - January 2008 Issue

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News on U.S. Government Fuel Cell Programs

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### 1. New NIST Lab to Focus on Hydrogen Pipeline Testing

A new laboratory at the National Institute of Standards and Technology (NIST) will evaluate tests, materials, mechanical properties and standards for hydrogen pipelines. The 750-square-foot facility is under construction at the NIST campus in Boulder, Colorado, and is expected to be operational by mid-2008. Proceedings from a workshop held to identify priority needs for hydrogen pipeline testing are available online.

[http://www.nist.gov/public\\_affairs/techbeat/tb2008\\_0123.htm#hydrogen](http://www.nist.gov/public_affairs/techbeat/tb2008_0123.htm#hydrogen)

[http://www.boulder.nist.gov/div853/Pipeline\\_Workshop/index.htm](http://www.boulder.nist.gov/div853/Pipeline_Workshop/index.htm)

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### 2. Fuel Cells, Climate Change Mitigation Technologies Face Deployment Barriers

Fuel cells and other climate change mitigation technologies face barriers to deployment according to a new report by the Oak Ridge National Laboratory (ORNL), "Carbon Lock-In: Barriers to Deploying Climate Change Mitigation Technologies." The report looks at ways to remove barriers to the use of technologies that would help the United States reduce greenhouse gas emissions.

[http://www.ornl.gov/sci/eere/PDFs/Carbon\\_Lock\\_In\\_Report.pdf](http://www.ornl.gov/sci/eere/PDFs/Carbon_Lock_In_Report.pdf)

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### 3. Fuel Cell Provides 26 Hours of Power at National Park During Grid Failure

An Acumentrics solid oxide fuel cell (SOFC) installed at the Cuyahoga Valley National Park's environmental education center provided power for 26 hours at the facility during a power outage due to an electric grid failure. <http://www.acumentrics.com/4647d23d-4d02-4174-9176-50815ff40166/press-releases-release-details.htm>

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### 4. NETL Researchers Receive Patent for Fuel Cell Component

Researchers at the National Energy Technology Laboratory (NETL), along with their research partners at the University of Pittsburgh, received a patent for a flow control device to improve flow distributions within fuel cells. The research is being conducted through the NETL University Research Initiative Program.

<http://www.netl.doe.gov/publications/press/2008/ResearchersReceiveFourPatents.html>

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### 5. Fuel Cells Successfully Power Holiday Light Exhibit at Smithsonian National Zoo

An MGEN500 hydrogen-fueled fuel cell designed and manufactured by MicroCell Corporation successfully powered the entrance of the "Zoolights" holiday light exhibit at the Smithsonian National Zoo in Washington, D.C. The fuel cell system powered thousands of LED lights set up as sculptures of the zoo's most popular animals. <http://www.microcellcorp.com/news.html>

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### 6. DOE Hydrogen Program Annual Merit Review Scheduled for June 9-13, 2008

The Annual Merit Review for DOE's Hydrogen Program is scheduled for June 9-13, 2008, in Arlington, Virginia. Proceedings from previous Annual Merit Reviews are available online.

[http://www.hydrogen.energy.gov/annual\\_review.html](http://www.hydrogen.energy.gov/annual_review.html)

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RFP/Solicitation News

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### 7. DOE Issues Solicitation for Vehicular Hydrogen Storage R&D

DOE announced a solicitation for on-board hydrogen storage technology projects to complement the existing National Hydrogen Storage Project portfolio. A total of \$6 million is available for projects under this solicitation, with three to six new projects expected to receive funding. Preliminary applications are due by February 28, 2008. Final applications are by invitation only, and will be due April 18, 2008.

[http://www1.eere.energy.gov/hydrogenandfuelcells/news\\_detail.html?news\\_id=11519](http://www1.eere.energy.gov/hydrogenandfuelcells/news_detail.html?news_id=11519)

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*8. DOD STTR Program Solicitation Features Several Fuel Cell, Hydrogen Topics*

The Department of Defense (DOD) solicitation for its Small Business Technology Transfer (STTR) Program features several topics related to fuel cells and hydrogen technologies, including "Liquid Metal Anodes for a JP-8 Fuel Cell," "A Nanotechnology-Based Hydrogen Generator for a Compact Fuel Cell Power System," and "Microbial Fuel Cell for Distributed Seafloor Sensor Network Powering." Phase I funding is available in the amount of up to \$100,000 over a period of up to one year. Successful Phase I projects will be eligible to apply for Phase II funding. DOD will begin accepting proposals on February 19, 2008. The deadline for proposals is March 19, 2008.

<http://www.acq.osd.mil/osbp/sbir/solicitations/sttr08A/index.htm>

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*9. NYSERDA Offers Funding for Fuel Cell System Installations*

The New York State Energy Research and Development Authority (NYSERDA) is offering up to \$11.2 million for a "Renewable Portfolio Standard Customer-Sited Tier Fuel Cell Program." The funding is to support the installation and operation of fuel cell systems in New York State, with up to \$1 million available per fuel cell system. Funding is on a first-come, first-served basis until May 29, 2009, or until all funding has been committed, whichever comes first.

<http://www.nyserda.org/funding/1150pon.asp>

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Contract / Funding Awards
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*10. DOE Funds Penn State-Led Consortium on Hydrogen Energy Research*

DOE will provide \$2.4 million to a consortium, led by Pennsylvania State University, which will investigate thermochemical hydrogen production. The goal of the program is to develop a number of thermochemical cycles for producing hydrogen on a commercial scale through nuclear energy systems. <http://www.depweb.state.pa.us/news/cwp/view.asp?Q=532766&A=3>

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*11. DOE BES Office Says No Funding for Hydrogen Fuel Initiative Solicitation in FY2008*

DOE's Office of Basic Energy Sciences (BES) announced that the FY2008 appropriations bill signed into law by the President in December included no funding for the office's Hydrogen Fuel Initiative solicitation. BES states that proposals not already funded in FY2007 are now declined due to lack of funds, but principal investigators will receive anonymous reviews of their proposals along with written notification of the declination. <http://www.sc.doe.gov/bes/hydrogen.html>

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Industry News
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*12. Fuel Cell Prototypes Showcased at Consumer Electronics Show*

Three fuel cell prototype or pre-production systems were showcased at this year's Consumer Electronics Show. Millennium Cell and Horizon Fuel Cell Technologies completed a pre-

production version of a portable fuel cell generator with a "water-activated cartridge system" that can provide up to 14 continuous hours of emergency or remote power. The HydroPak™ features an AC outlet and two USB connectors, and is expected to retail for \$400, with disposable cartridges costing \$20 each. Toshiba introduced a prototype direct methanol fuel cell (DMFC) integrated into one of the company's gigabeat portable media players. The DMFC can run video on the gigabeat for up to ten hours on a single fuel charge. MicroFuel Cells showcased prototypes of its Mobion® rechargeable fuel cell power packs, which are geared towards low power applications such as cell phones, PDAs, MP3 players and other handheld electronic devices.

<http://www.millenniumcell.com/fw/main/default.asp?DocID=159&reqid=1091045>

[http://www.toshiba.co.jp/about/press/2008\\_01/pr0701.htm](http://www.toshiba.co.jp/about/press/2008_01/pr0701.htm)

<http://www.mtimicrofuelcells.com/news/article.asp?id=309>

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**13. Fuel Cell Vehicle Prototype Unveiled at NAIAS**

At this year's North American International Auto Show, General Motors introduced its Provoq Concept, a fuel cell-powered Cadillac prototype. The Provoq features a fifth-generation fuel cell system and lithium-ion battery to provide a range of 300 miles on a single fill of hydrogen. The Provoq also features a solar panel in its roof that helps to power onboard accessories such as interior lights and the audio system.

<http://media.gm.com/us/gm/en/news/events/autoshow/08naias/brands/cadillac/provoq/provoq.htm>

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University Activities
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**14. Fuel Cell Systems Technician Skill Standards Development Effort**

The Texas State Technical College (Waco, TX) Department of Fuel Cell Technology is pursuing a substantial education grant from the Texas Higher Education Coordinating Board. The grant award requires that the college coordinate the development of Fuel Cell Systems Technician skill standards and incorporate them into its Fuel Cell Systems Technician AAS degree program. The Texas Skill Standards Board (TSSB) is working with Texas State Technical College to facilitate the development of the standards. The development team is looking for additional industry representatives to review and validate the resulting skill standards. If you are interested, contact Kate McLaughlin, TSSB Industry and Development Specialist, at (512) 936-8105, or via email at [Kate.McLaughlin@governor.state.tx.us](mailto:Kate.McLaughlin@governor.state.tx.us).

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**15. 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](mailto:khaq@nfcrc.uci.edu))

Researchers at the U.S. Department of Energy's Brookhaven National Laboratory have unveiled important details about a class of catalysts that could help improve the performance of fuel cells. With the goal of producing "clean" hydrogen for fuel cell reactions in mind, the researchers determined why two next-generation catalysts including gold, cerium, titanium, and oxygen nanomaterials exhibit very high activity. The team includes researchers from Central University of Venezuela. Results were published online in the Dec. 14, 2007, edition of the journal *Science*. [24-Dec-2007, *Biotech Business Week*]

<http://www.sciencemag.org/cgi/content/full/318/5857/1757?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=catalyst&searchid=1&FIRSTINDEX=0&issue=5857&resourcetype=HWCIT>

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnethtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7,309,380.PN.&OS=PN/7,309,380&RS=PN/7,309,380>

2007. in *Waste News*. <http://www.wastenews.com/arcshow.html?id=07122402101>

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnethtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7,312,174.PN.&OS=PN/7,312,174&RS=PN/7,312,174>

<http://investor.ultralifebatteries.com/phoenix.zhtml?c=76036&p=irol-newsArticle&ID=1093138&highlight>

<http://www.lbl.gov/Science-Articles/Archive/MSD-silicon-nanowires.html>

A team of researchers at Arizona State University aim to generate hydrogen using bacteria and sunlight. The biohydrogen project, announced Jan. 14, aims to harness the energy in sunlight using microbial photosynthesis to produce hydrogen. A second part of this project is to convert waste materials from the initial process to produce even more hydrogen. The team is led by microbiologist Willem "Wim" Vermaas, a professor in ASU's School of Life Sciences. A third part of the project is to create a microbial fuel cell technology that uses the leftover cyanobacterial biomass generated in the hydrogen production process as the energy source for additional hydrogen production. Bruce Rittmann, director of the Environmental Biotechnology Center at the Biodesign Institute at ASU, leads this effort. [http://asunews.asu.edu/20080114\\_biofuel](http://asunews.asu.edu/20080114_biofuel)

The United Kingdom's Technology Strategy Board announced that it will invest £10 million (nearly \$20 million) to stimulate improvements in low carbon energy technologies. The money will be used to fund highly innovative industry-led collaborative research and development projects in areas such as intelligent grid integration and management; carbon abatement technologies; hydrogen and fuel cells; microgeneration and photovoltaics; and bioenergy. The board will provide partial funding for winning projects that address one or more of these areas and involve businesses working collaboratively with other businesses and/or with research organizations and academic institutions. Applicants must register their intention to apply for funding, and submit an outline of their proposal, by Feb. 22, and the final closing date for applications is March 27. Further information is available at [www.technologyprogramme.org.uk](http://www.technologyprogramme.org.uk).

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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at [fuelcellconnection @ yahoo.com](mailto:fuelcellconnection@yahoo.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/>)

*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/>)

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