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**FUEL CELL CONNECTION - November 2008 Issue**  
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**News on U.S. Government Fuel Cell Programs**  
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*1. DOE Partners with Plug Power and National Grid for Fuel Cell CHP Field Trial*

Under a partnership with the U.S. Department of Energy (DOE), Plug Power and National Grid will conduct a field trial of a new micro-CHP (combined heat and power) GenSys® fuel cell system, which uses natural gas as the fuel. The fuel cell will provide electricity and heat to a National Grid utility customer in New York State.

<http://www.b2i.us/View.asp?b=604&ID=60146&l=204573>

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*2. DOE and EPA Publish Updated Energy Efficiency Action Plan for States*

DOE and the Environmental Protection Agency (EPA) have published an updated version of the "National Action Plan Vision for 2025: A Framework for Change," which provides an energy efficiency action plan for state policy makers. The updated plan encourages investment in energy efficiency programs and identifies both progress made by states and areas targeted for additional progress. <http://www.energy.gov/news/6748.htm>

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*3. USDA to Test Drive Chevy Equinox Fuel Cell Vehicle*

The U.S. Department of Agriculture (USDA) has joined Chevrolet's Project Driveway and will test drive a Equinox Fuel Cell Electric Vehicle over the next six months in the Washington, DC, area.

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewpressrelDetail.do?domain=2&docid=50119>

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**RFP / Solicitation News**  
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*4. DOE Seeks Recommendations for Stationary Fuel Cell Power R&D Funding Strategies*

DOE is conducting a survey to solicit recommendations for research, development and demonstration strategies for stationary fuel cell power applications. The study, which is being conducted online, will "analyze the different strategies utilized in power generation systems and will identify the different challenges and opportunities for fuel cell applications." Those who participate in the survey may also request to receive the survey's results.

[http://www.surveymonkey.com/s.aspx?sm=iX8\\_2fiWjcph7KnYaHg\\_2fiEbw\\_3d\\_3d](http://www.surveymonkey.com/s.aspx?sm=iX8_2fiWjcph7KnYaHg_2fiEbw_3d_3d)

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*5. Clean Energy Loan Guarantee Deadline Extended Due to Widespread Interest*

Due to high interest, DOE has extended the application deadline for loan guarantees related to energy efficiency, renewable energy, and advanced transmission and distribution technologies. The application deadline for stand-alone and manufacturing projects, as well as the due date for Part I applications for large-scale integration projects, has been moved from December 31, 2008, to February 26, 2009. Project sponsors who have already filed an application may append, supplement, or revise their application before the new deadline. A revised solicitation announcement is now available online at the following link.

<http://www.lgprogram.energy.gov/RenSol10-29-08Amend2.pdf>

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#### *6. CEC Solicitation to Fund CHP, DER Applications*

The California Energy Commission Public Interest Energy Research Program (CEC PIER) issued a Program Opportunity Notice (PON) for Adaptation of Advanced Mobile Combustion Engine Technologies for Distributed Energy Resources (DER) and Combined Heat and Power (CHP) Applications. Fuel cell and hydrogen-related technologies are eligible, along with other energy technologies that will reduce greenhouse gas emissions and benefit electric utility customers. A total of \$2 million is available under this PON, with a maximum project award of \$1 million. Proposals are due January 8, 2009. A recording of the November 4 pre-proposal workshop is available online. <http://www.energy.ca.gov/contracts/pier.html#EPAG>

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#### *7. Navy Seeks Advanced Energy Storage Technologies in New DOD SBIR*

The U.S. Navy has listed "Advanced Modular, Energy Storage Technology" as a topic of interest in the new Department of Defense (DOD) Small Business Innovation Research (SBIR) solicitation. Fuel cells and supercapacitors are listed among technologies of interest under this topic. The DOD SBIR solicitation is for Phase I projects, with individual awards ranging from \$70,000 to \$100,000 over a period of six to nine months. Only successful Phase I projects are eligible for Phase II funding. Technical questions are being accepted by Topic Authors until December 7, 2008. Proposals will be accepted from December 8, 2008, through January 14, 2009. <http://www.acq.osd.mil/osbp/sbir/solicitations/sbir091/index.htm>

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#### *8. Fuel Cell Catalyst Deposition Subtopic Included in NIST SBIR*

The National Institute of Standards and Technology (NIST), has issued its Small Business Innovation Research (SBIR) Program solicitation, which includes as a Phase I project sub-topic of interest "Electrodeposition of Pt-alloy Electrocatalyst for PEM and DMFC." Phase I total proposal budgets must not exceed \$90,000. NIST anticipates selecting approximately fourteen Phase I projects to receive awards. Only successful Phase I projects will be invited to submit Phase II proposals. The closing date for this solicitation is January 22, 2009.

[https://www.fbo.gov/index?s=opportunity&mode=form&id=7e85a4c456a4912dd565712d78aab3a9&tab=core&\\_cview=1](https://www.fbo.gov/index?s=opportunity&mode=form&id=7e85a4c456a4912dd565712d78aab3a9&tab=core&_cview=1)

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#### *9. MDA Seeks Innovative Concepts, Including Fuel Cells, for Ballistic Missile Defense System*

The U.S. Missile Defense Agency (MDA) issued a Broad Agency Announcement (BAA) seeking proposals for new and innovative concepts that can be inserted into Ballistic Missile Defense System elements. The Power Systems technology area includes fuel cells, batteries and photovoltaic arrays among eligible technologies. MDA does not have a specified amount of funding available for awards under this BAA, but will identify appropriate levels of funding based on projects they decide to pursue. The BAA will remain open until December 31, 2009.

[https://www.fbo.gov/index?s=opportunity&mode=form&id=0d96103501766d20c5d029cd99978a5e&tab=core&\\_cview=1](https://www.fbo.gov/index?s=opportunity&mode=form&id=0d96103501766d20c5d029cd99978a5e&tab=core&_cview=1)

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#### *10. Army CECOM Issues Environmental Control Technology BAA*

The U.S. Army Communications-Electronics Command (CECOM) has issued an Environmental Control Technology Broad Agency Announcement (BAA) for its Research, Development and Engineering Center (RDEC) Army Power Division. Listed among technologies acceptable under this BAA is "Power generation technology which can be incorporated with the environmental control technology to form a self-powered capability and provide output exportable power that meets MIL-STD 1331 for power quality while simultaneously operating at full heating or cooling capacity." The BAA seeks only expressions of interest in the form of White Papers. Full proposals will be requested from selected White Papers following evaluation. The first round of evaluations is expected to begin in January 2009. White Papers received by December 31, 2008, will be included in the first round of evaluations. This BAA is open until September 30, 2011.

<https://abop.monmouth.army.mil/baas.nsf/all/W909MY-09-R-0001>

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**Contract / Funding Awards**  
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**11. TARDEC Awards \$1.8 Million Contract to Proton Energy Systems**

The U.S. Army's Tank-Automotive Research Development and Engineering Center (TARDEC) awarded a \$1.8 million contract to Proton Energy Systems for development of a hydrogen fueling system capable of supporting a military fleet of hydrogen-fueled vehicles.

[http://protonenergy.com/news\\_01.php?id=45](http://protonenergy.com/news_01.php?id=45)

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**12. ITS-DAVIS Selected for Sustainable Transportation Energy Pathways Analysis, Reports**

The U.S. Department of Transportation's Volpe National Transportation Systems Center intends to award a contract to The Institute of Transportation Studies at the University of California, Davis (ITS-DAVIS) for purchase of studies, reports and modeling analysis conducted under the Sustainable Transportation Energy Pathways (STEPS) program at the Institute. STEPS program objectives include developing theories, tools and methods to compare promising alternative energy and vehicle pathways, including hydrogen.

[https://www.fbo.gov/index?s=opportunity&mode=form&id=902286f7bf968be1cd425eaf7ac839b9&tab=core&\\_cvview=0](https://www.fbo.gov/index?s=opportunity&mode=form&id=902286f7bf968be1cd425eaf7ac839b9&tab=core&_cvview=0)

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**Legislative / Regulatory News**  
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**13. Missouri Voters Pass 15% Renewable Energy Requirement for State Utilities**

Voters in Missouri passed the Missouri Clean Energy Initiative, requiring the state's investor-owned utilities use renewable energy as 15% of their energy supply by 2021, starting with 2% in 2011. Fuel cells using hydrogen from renewable sources are included among technologies defined as "renewable" under the measure.

<http://www.sos.mo.gov/elections/2008petitions/2008-031.asp>

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**14. CEC Working Group to Discuss Framework for State's Alternative Fuel, Vehicle Program**

The California Energy Commission (CEC) is holding a Sustainability Working Group meeting to discuss the sustainability framework developed for the Alternative and Renewable Fuel and Vehicle Technology Program established by Assembly Bill 118. The legislation authorizes CEC to spend approximately \$120 million per year for more than seven years on technologies to "transform California's fuel and vehicle types to help attain the state's climate change policies." The meeting will be held Friday, December 5, 2008, at the CEC offices in Sacramento. Presentations and audio will be broadcast via a WebEx web conferencing system. CEC staff is seeking comments on how to develop a ranking or weighting system of sustainability characteristics as potential evaluation criteria for future solicitations.

[http://www.energy.ca.gov/ab118/notices/2008-12-05\\_staff\\_meeting.html](http://www.energy.ca.gov/ab118/notices/2008-12-05_staff_meeting.html)

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**Industry News**  
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*15. Fuel Cell Vehicles Unveiled at Los Angeles International Auto Show*

Kia Motors, Honda and Volkswagen unveiled new fuel cell vehicle prototypes and concept cars at the 2008 Los Angeles International Auto Show. Kia's Borrego FCEV, which features a 115-kW fuel cell, reaches a top speed of 100 mph and a range of 426 miles. Honda revealed its FC Sport design study model, a hydrogen fuel cell three-seat sports car concept. Volkswagen introduced three fuel cell prototypes: the Tiguan, a compact SUV; the Touran, a compact minivan; and the Passat Lingyu, a sedan.

<http://www.kiamedia.com/secure/corporate112008b.html>

<http://corporate.honda.com/press/article.aspx?id=4879>

[http://www.media.vw.com/article\\_display.cfm?article\\_id=10428](http://www.media.vw.com/article_display.cfm?article_id=10428)

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*16. Microcell Corporation to Add Hot Water Heaters to Fuel Cell Product Line*

Microcell Corporation has installed an MGEN 500 telecom unit as part of a plan to eventually add hot water heaters to its fuel cell product line. The hot water heaters capture and utilize the heat generated by the fuel cell systems, which operate on direct hydrogen.

<http://www.microcellcorp.com/news.html#>

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**University Activities**  
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*17. 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))

On Sept. 18, the World Intellectual Property Organization assigned International Patent Publication No. WO/2008/054337 to In-Hwan Do and Hiroyuki Fukushima, both of Lansing, Mich., and Lawrence T. Drzal of Okemos, Mich. The team developed a method for producing nanoparticles that can be used in fuel cell, supercapacitor and battery components. The patent was assigned to Michigan State University, East Lansing.

<http://www.wipo.int/pctdb/en/ia.jsp?ia=US2006/019392>

On Sept. 18, the World Intellectual Property Organization assigned International Patent Publication No. WO/2008/008409 to Raymond J. Gorte of Narberth, Pa.; John M. Vohs of Newtown Square, Pa.; and Michael D. Gross of Philadelphia. The team developed a fuel-flexible ceramic anode related to "high-performance, direct-oxidation [solid oxide fuel cells] utilizing the anodes, providing improved electro-catalytic activity and redox stability," according to the abstract filed with WIPO. The patent was assigned to Trustees of the University of Pennsylvania in Philadelphia. <http://www.wipo.int/pctdb/en/ia.jsp?ia=US2007/015846>

On Sept. 18, the World Intellectual Property Organization assigned International Patent Publication No. WO/2008/127215 to Jimmy W. Mays, Tianzi Huang and Kunlun Hong, all of Knoxville, Tenn., and Samuel P. Gido of Hadley, Mass., for producing copolymers of fluorinated polydienes and sulfonated polystyrene that can be used in fuel cell membranes. The patent was assigned to the University of Tennessee Research Foundation in Knoxville.

<http://www.wipo.int/pctdb/en/ia.jsp?ia=US2005/009434>

On Oct. 21, U.S. Patent No. 7,438,885 was issued to Sudipta Seal and Matthew Luke McCutchen, both of Oviedo, Fla.; Suresh C. Kuiry of Campbell, Calif.; Debasis Bera of Orlando, Fla.; and Meyya Meyyappan of Pacifica, Calif., for their method of simultaneously forming, filling and decorating carbon nanotubes with palladium nanoparticles. The patent was assigned to the University of Central Florida Research Foundation, Inc. in Orlando. An abstract of the invention,

<http://patft1.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetacgi%2FPTO%2FSrchnum.htm&r=1&f=G&l=50&s1=7,438,885.PN.&OS=PN/7,438,885&RS=PN/7,438,885>

<http://patft1.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetacgi%2FPTO%2FSrchnum.htm&r=1&f=G&l=50&s1=7,438,889.PN.&OS=PN/7,438,889&RS=PN/7,438,889>

<http://www.wipo.int/pctdb/en/ia.isp?ia=US2008/000638>

<http://www.manchester.ac.uk/aboutus/news/display/?id=4093>  
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/G01244X/1>

<http://www.mecheng.adelaide.edu.au/~marjom01/Dr%20Maziar%20Arjomandi.htm>

<http://www.udel.edu/udaily/2009/nov/grants110308.html>

A collaboration between engineering students at Texas A&M University and some former Aggies who now work with Lynntech, Inc. has produced the world's first fuel cell-powered generator for football tailgating. The new generator was demonstrated Nov. 8 during the Texas A&M-Oklahoma game. <http://tamunews.tamu.edu/archives/article.php?articleid=6940&month=11&year=2008>



The longest fuel cell-powered flight of a radio-controlled aerial vehicle has been achieved by students at the University of Michigan and engineers at Ann Arbor-based fuel cell manufacturer Adaptive Materials Inc., the university announced Nov. 13. The plane, named Endurance, flew for 10 hours, 15 minutes and four seconds in a flight that lasted from sunrise to sunset on Oct. 30 at Field of Dreams Park in Milan, Mich. The previous world record, held by a California-based company, lasted just over nine hours.

<http://www.ns.umich.edu/htdocs/releases/story.php?id=6833>

The U.S. Department of Energy's Argonne National Laboratory has teamed with the University of Illinois at Urbana-Champaign, the University of Illinois at Chicago and Northwestern University to form the Illinois Center for Advanced Tribology. The new center will develop solutions to technical issues related to transportation, health and systems that operate in extreme environments. Tribology is the science and technology of friction, lubrication and interactive surfaces in relative motion that are evident in virtually everything that moves, including human beings. The partnership could yield new lubricant formulas for use in powering fuel cells.

[http://www.anl.gov/Media\\_Center/News/2008/news081030.html](http://www.anl.gov/Media_Center/News/2008/news081030.html)

<http://www.transportation.anl.gov/pdfs/MM/520.pdf>

A team of Cornell University undergraduates and their hydrogen fuel cell-powered car won top honors and \$2,000 in the American Institute of Chemical Engineers' 10<sup>th</sup> Annual ChemE student car competition Nov. 16 in Philadelphia. The win propels them to the international competition in Montreal next August. The team's shoebox-sized car is named "Bender," after the character from the television show "Futurama." Competing cars are powered by a chemical reaction and must travel 60 feet carrying a water payload of 250 milliliters within two minutes before coming to a complete stop. <http://www.news.cornell.edu/stories/Nov08/ChemECar.html>

Cornell University researchers have developed what they say is an ingenious microscopic method to observe the behavior of single nanoparticles of a catalyst, down to the resolution of single catalytic events. There is intense interest in nanocatalysts for such applications as fuel cells and pollutant removal, because nanoparticles provide a larger surface area to speed reactions, and in some cases, materials that are not catalytic in bulk become so at the nanoscale.

<http://www.news.cornell.edu/stories/Nov08/nanocatalysts.ws.html>

Joe Salazar of Lompoc, Calif., was among the "Distinguished Alumni" honored by New Mexico State University's Alumni Association at a dinner during Homecoming 2008. Salazar received his bachelor's in mathematics from NMSU in 1963 and was recognized for numerous achievements during his civilian career with the USAF at Vandenberg AFB in California, among these helping to deploy a fuel cell to provide pollution-free electrical power to Air Force test facilities.

[http://www.nmsu.edu/~ucomm/Releases/2008/october/distinguished\\_alumni2008.htm](http://www.nmsu.edu/~ucomm/Releases/2008/october/distinguished_alumni2008.htm)

The University of Montana has developed a new eight-hour awareness program titled Hydrogen Safety for Emergency Responders.

[http://news.umt.edu/index.php?option=com\\_content&view=article&id=4817:um-develops-hydrogen-safety-course&catid=20:um-news](http://news.umt.edu/index.php?option=com_content&view=article&id=4817:um-develops-hydrogen-safety-course&catid=20:um-news)

<http://www.h2education.com/index.php/sID/472aa1df/fuseaction/safety.main.htm>

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**Administration**  
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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at 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/>)

*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>)