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FUEL CELL CONNECTION - July 2008 Issue

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1. DOE Seeks Comments on Draft Hydrogen Storage Materials Best Practices Document
The U.S. Department of Energy (DOE) is seeking public comment until August 15, 2008, on a draft "Best Practices for the Characterization of Hydrogen Storage Materials" document. The document is meant to help users communicate the relevant performance properties of hydrogen storage materials as they are discovered and tested.
http://www.hydrogen.energy.gov/news_storage_bestpractices.html

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2. USPS Receives Fuel Cell Vehicle, Announces Plans for Alternative Fuel Fleet
The U.S. Postal Service (USPS) announced plans to explore alternative fuel vehicle options to replace the 195,000 neighborhood delivery vehicles of its fleet. The announcement was made at a ceremony at which the Postal Service received a Chevrolet Equinox Fuel Cell electric vehicle for testing in a mail-delivery environment. The vehicle was delivered by General Motors as part of the Project Driveway program.
http://www.usps.com/communications/newsroom/2008/pr08_078a.htm

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3. DOE Announces Freedom Prize Competition to Support American Oil Independence
DOE and the Freedom Prize Foundation have announced the Freedom Prize competition to award $4 million for projects to reduce America's consumption of foreign oil. The primary categories for the award are industry, K-12 schools, the military, state and local governments, and communities. The Prize was established by the Energy Policy Act of 2005. Individual prizes will range from $500,000 to $1 million. Details about how to apply for the Freedom Prize are expected to be released in Fall 2008, with applications due in January 2009.
http://www.freedomprize.org/news/doc/FreedomPrizeLaunch62608.pdf

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4. Report Evaluates DOE, FTA Fuel Cell and Hydrogen Transit Bus Demonstrations
The National Renewable Energy Laboratory (NREL) has published a report "Hydrogen and Fuel Cell Transit Bus Evaluations: A Joint Evaluation Plan of the U.S. Department of Energy and the Federal Transit Administration." The report details demonstration sites, funding sources, and data collection activities for current and planned hydrogen fuel cell transit bus demonstration projects. http://www.nrel.gov/hydrogen/pdfs/42781-1.pdf

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5. Proceedings of 2008 Hydrogen Program Merit Review Available Online
Proceedings from the DOE Hydrogen Program's 2008 Merit Review are now available online, including presentations on hydrogen and fuel cell research and development projects, codes and

standards development and technology validation programs. The annual review was held in June 2008. http://www.hydrogen.energy.gov/annual_review08_proceedings.html

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6. Alternative Fuels Data Center Creates Online Alternative Fuel Station Locator
DOE's Alternative Fuels Data Center (AFDC) has created an Alternative Fuel Station Locator for the general public. Visitors to the online Locator can type in their address or zip code and find the nearest alternative fuel stations, including stations that provide hydrogen fuel.
http://eere.energy.gov/afdc/stations/find_station.php

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RFP/Solicitation News

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7. NSWC Issues Presolicitation for PEMFC, SOFC Laboratory Support Services
The Naval Surface Warfare Center (NSWC), Carderock Division has issued a presolicitation notice for electrochemical laboratory support services to assist with research and development of PEMFC and SOFC technologies for a wide range of Navy applications. The solicitation is expected to be issued on or around August 8, 2008.
https://www.fbo.gov/index?s=opportunity&mode=form&id=34693bc9b2e0cef329f36e7746ae28e9&tab=core&_cview=0

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8. ONR Plans SOFC BAA Release, Industry Day Meeting in August 2008
The Office of Naval Research (ONR) plans to issue a Broad Agency Announcement (BAA) for a program to utilize SOFC technology for Marine Corps and other Defense Department auxiliary power unit (APU) applications. In conjunction with the BAA release, ONR has scheduled a "High Temperature Fuel Cell (SOFC) Based Auxiliary Power Unit Industry Day" for August 11-12, 2008, in Arlington, Virginia.
https://www.fbo.gov/?s=opportunity&mode=form&id=f7243c27bc7fe3549a1fa199a2339fcb&tab=core&_cview=0

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9. NASA SBIR/STTR Solicitation Includes Fuel Cell Topics
The National Aeronautics and Space Administration (NASA) has released its 2008 Small Business Innovation Research (SBIR) and Technology Transfer (STTR) solicitations, which include fuel cell-related research topics such as Fuel Cells for Surface Systems and Technologies for Space Power and Propulsion. The solicitation will fund approximately 250 SBIR and 30 STTR Phase I project proposals. Phase I awards have a maximum contract value of $100,000. The deadline for proposals is September 4, 2008.
http://sbir.gsfc.nasa.gov/SBIR/sbirsttr2008/solicitation/index.html

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10. DOE Announces $10 Billion in Loan Guarantees for Advanced Energy Projects
DOE announced the availability of $10 billion for a Loan Guarantee Solicitation for Innovative Energy Efficiency, Renewable Energy and Advanced Transmission and Distribution Technologies. There is a technology category specifically for Hydrogen and Fuel Cell Technologies. Applications under this solicitation are due December 31, 2008.
http://www.lgprogram.energy.gov/RenSol7-11-08Amend1.pdf

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Contract / Funding Awards

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11. Concurrent Technologies Receives $4.8 Million for Hydrogen Fueling Station Project
The Department of the Navy has awarded a $4.83 million contract to Concurrent Technologies Corporation for a project under the "Hydrogen-Fueled Material Handling Equipment and Hydrogen Vehicle Fueling Station Pilot Projects" solicitation.
https://www.fbo.gov/?s=opportunity&mode=form&id=9212325a8600a5fef141a29a81da1996&tab=core&_cview=1

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12. DOE Provides $850,000 for NGA Securing a Clean Energy Future Initiative
DOE announced it will provide $850,000 to support the National Governors Association's (NGA) Securing a Clean Energy Future Initiative, which was created with DOE funding in 2007 to establish state-level energy policies to help develop and deploy cleaner energy sources.
http://www.energy.gov/news/6412.htm

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13. Air Force Awards Fuel Cell Project Funding to Scheelite Technologies
The Department of the Air Force has awarded a $711,000 contract to Scheelite Technologies for a project to develop an advanced fuel cell power system for small unmanned aerial vehicle (UAV) applications.
https://www.fbo.gov/index?tab=core&s=opportunity&mode=form&id=c6a7b42337a66e9bd07ce0650475d6ad

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14. NYSERDA Awards Contract to Plug Power for Fuel Cell CHP System
The New York State Energy Research and Development Authority (NYSERDA) has awarded a $500,000 contract to Plug Power in support of the company's development of a residential fuel cell "micro-combined heat and power" system. The contract will fund the integration of a peak burner into the fuel cell system, in order to better serve the heating needs of residential customers. http://www.b2i.us/View.asp?b=604&ID=54034&I=204573

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15. Michigan Pre-Seed Capital Fund Provides Investment to Global Energy, Inc.
The Michigan Pre-Seed Capital Fund, which supports technology-based companies in the state through investments, has committed to providing $250,000 to Global Energy, Inc. for the manufacture of high-temperature PEMFC auxiliary power systems capable of reforming a variety of fuel sources.
http://www.annarborspark.org/growth-expansion/news-of-note/Index.cfm?i=2693

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16. AFRL Funds Micro Fuel Cell Project
The Air Force Research Laboratory (AFRL) announced a $99,974 contract with UltraCell Corporation for a project to develop a 25-Watt reformed methanol micro fuel cell for the AFRL Power and Thermal Management Technology Development Program.
https://www.fbo.gov/?s=opportunity&mode=form&id=98e5fa603d63ec781451acf9f0fe8ee4&tab=core&_cview=1

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17. DOE Selects SERC to Develop University Hydrogen Curriculum
DOE has selected Schatz Energy Research Center (SERC) to develop a hydrogen curriculum for California's public universities. The curriculum will include modules suitable for use in chemistry and engineering courses as well as student monitoring and analysis of "real-world hydrogen fueling stations." SERC will be partnered on the project with the Institute of Transportation Studies at the University of California, Berkeley.
http://www.schatzlab.org/v3n2_dig_sm.pdf

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Legislative/Regulatory News

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18. MMS Seeks Public Comments on Proposed Offshore Renewable Energy Regulations

The Minerals Management Service (MMS) of the U.S. Department of the Interior issued a proposed rule for regulation of "alternative" energy production on the Outer Continental Shelf. Projects that generate hydrogen are included in the MMS definition of "alternative" energy. The proposed regulations include establishment of lease and easement grant programs and rights-of-way for renewable energy projects in federal waters, as well as methods of lease revenue sharing with nearby coastal states. Public comments on the proposed rule are being accepted through September 8, 2008. http://www.mms.gov/ooc/press/2008/press0708.htm

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19. Massachusetts Green Communities Act Promotes Energy Efficiency & Renewable Energy

The Green Communities Act, signed by Massachusetts Governor Deval Patrick, aims to increase adoption of clean and renewable energy technologies through several aggressive initiatives. Highlights of the Act include a doubling of the rate of increase in the state's Renewable Portfolio Standard from 0.5 percent to 1 percent per year. Also, electric and gas utilities will be required to purchase energy efficiency resources when such improvements would be less expensive than purchasing additional supply.
http://www.mass.gov/legis/bills/senate/185/st02pdf/Energy_Conference_BILL_SUMMARY.pdf

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20. Florida Energy Bill Supports Advanced Energy Efficiency and Renewable Energy

Florida Governor Charlie Crist signed into law a new energy bill that supports advanced energy efficiency and renewable energy in the state through a wide variety of measures, including establishment of a renewable portfolio standard, standardized interconnection requirements, and net metering. The bill expands the state's Innovation Incentive Program to include renewable energy projects, and increases the scope of the Renewable Energy Technology Grants Program to include energy efficiency technologies for vehicles and commercial buildings.
http://www.flsenate.gov/data/session/2008/House/bills/billtext/pdf/h713503er.pdf

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State Activities

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21. CEC PIER Renewables Program Seeks Input on Renewable-based Communities

The California Energy Commission's (CEC) Public Interest Energy Research (PIER) Renewables Program will hold three workshops to seek input on an initiative for Renewable-based Energy Secure Communities (RESCO). The goal of the RESCO initiative is to use research, development and demonstration of renewable energy technologies along with advancements in energy efficiency, smart grid integration, energy storage, and other technologies to "help make California's electricity and transportation fuels more diverse, safe, cleaner, and affordable." The first workshop will be held August 6, 2008, in Sacramento.
http://www.energy.ca.gov/research/notices/2008-08_06+08+12_RESCO_Workshops.pdf

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22. Pennsylvania Commits $650 Million in Support of Alternative Energy Technologies

Pennsylvania Governor Edward Rendell signed the Alternative Energy Investment Act, which provides a $650 million package of tax incentives, loans and grants to support development and

use of alternative energy technologies in the state. $165 million of the package is for loans and grants for alternative and renewable energy projects conducted by businesses and local governments. $40 million of the package is for an alternative energy development program to support early-stage research and incubator support services.
http://www.depweb.state.pa.us/news/cwp/view.asp?Q=538660&A=3
http://www.legis.state.pa.us/CFDOCS/Legis/PN/Public/btCheck.cfm?txtType=PDF&sessYr=2007&sessInd=1&billBody=H&billTyp=B&billNbr=0001&pn=0086

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Industry News
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23. USFCC Worldwide Industry Survey Reports Increased Sales, Jobs, Research Spending
The US Fuel Cell Council (USFCC) released results of its 2007 Worldwide Fuel Cell Industry Survey, reporting growth in jobs, sales and R&D expenditures. The survey notes a 22% increase in fuel cell specific jobs, a 10% increase in fuel cell-related sales, and a 4% increase in fuel cell-related spending on research for the survey's 182 participating companies. This is the fourth global survey, sponsored by USFCC, Fuel Cell Commercialization Conference of Japan, Fuel Cell Europe, and Hydrogen & Fuel Cells Canada.
http://www.usfcc.com/Final%20News%20release%20for%202007%20Industry%20Survey.pdf

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24. Fuel Cells 2000 Launches Fuel Cell Insider Blog
Fuel Cells 2000 announced it has launched the Fuel Cell Insider blog, which will include opinion pieces, analyses and editorials from industry experts. The blog will also provide first-hand accounts of experiences with fuel cells and related fuels.
http://www.fuelcellinsider.org/

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University Activities
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25. 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)

Cornell researchers have developed a new process to create porous films of crystalline metal oxides that could lead to more efficient fuel cells and solar cells. The research is described online in the journal *Nature Material*s by Ulrich Wiesner, professor of materials science and engineering; Francis DiSalvo, the J.A. Newman Professor of Chemistry and Chemical Biology; and colleagues.
http://www.news.cornell.edu/stories/Jan08/mesoporous.ws.html

A research team from Valparaiso University's College of Engineering has taken the solar reactor it designed and built to Switzerland to begin a series of tests to study the industrial feasibility of high-temperature solar electrolysis – a process that has the potential to make large-scale storage and transportation of the sun's energy practical. The Valparaiso team is producing zinc in its experiments because the commonly used metal could be used in fuel cells for the production of electricity. The process could be a means by which solar energy is stored as chemical energy in the form of zinc, allowing it to be transported and used at any time.
http://www.valpo.edu/news/index.php?action=display&newsid=3618&sy=2007

Virginia Tech Engineering Science and Mechanics Professor David Dillard was awarded the Missouri University of Science and Technology (formerly the University of Missouri at Rolla) honorary professional degree. Dillard, a Missouri S&T alumnus, was recognized for having established an international reputation for his work in adhesives and sealants. A major thrust of his research work is the development of appropriate test methods for evaluation of adhesive bonds, analysis, and design procedures for adhesive joints, and studies of the durability of such systems when exposed to a variety of environmental conditions. Recent efforts include durability of fuel cell materials and behavior of adhesives under impact conditions.
http://www.vtnews.vt.edu/story.php?relyear=2008&itemno=416

Saiful Islam, a chemistry professor at the University of Bath, has received the Francis Bacon Medal Fuel Cell Science & Technology Award from the Royal Society of Chemistry in the United Kingdom. The award recognizes chemical science and technological advances that address sustainable energy production. Professor Islam was chosen for his research into the atomic-scale properties of new solid compounds that increase fuel cell efficiency.
http://www.bath.ac.uk/news/2008/7/1/saifulaward.html

B. Wayne Bequette, professor of chemical and biological engineering at Rensselaer Polytechnic Institute, recently was elected a fellow of the American Institute of Chemical Engineers. Bequette's research includes the modeling and control of both high-temperature and low-temperature fuel cells, including energy integration to improve overall system efficiency.
http://news.rpi.edu/update.do?artcenterkey=2465

A Boston University faculty member who is developing new electrolyzer technology was among those honored by the Massachusetts Technology Transfer Center in June. The center's technology investigation awards provide seed money to support proof-of-concept development. Uday B. Pal, professor and chair ad interim of manufacturing engineering was recognized for "Solid Oxide Membrane Electrolyzer for the Production of Pure Hydrogen and Syn-gas from a Source of Waste and Stream." With a goal of producing high purity, reduced cost hydrogen from waste, the system can be fed any kind of hydro-carbon wastes, notably saw dust, cornstalks, coal dust, plastic and effluent from gas.
http://www.bu.edu/phpbin/news/releases/display.php?id=1629

The *Xinhua Economic News Service* reported in its July 6 edition that 20 hydrogen-powered fuel cell vehicles manufactured by Volkswagen will provide transportation for dignitaries, elected officials and media representatives at the Beijing Olympic Games. The news story states that engines for these vehicles were jointly designed and developed by Tongji University, Shanghai Automobile Industry Corporation (Group) and Shanghai Fuel Cell Vehicle Powerstrain Co., Ltd.

DuPont has recognized 17 young professors from universities in the United States, China, Spain and India with the annual DuPont Young Professor grant. A list distributed by *PR Newswire* identifies one of the recipients as Jeremy Meyers of the University of Texas, Austin for his work on transport properties in ionomeric fuel cell membranes. The DuPont program, which began in 1967, is designed to provide start-up assistance to promising young and untenured research faculty working in areas aligned with the company's long-term business strategy. Each beneficiary receives a three-year grant for $25,000 or its equivalent in relevant currency.
http://www2.dupont.com/Media_Center/en_US/daily_news/july/article20080707a.html

Asia Pulse reported in its July 9 edition that a research team from Japan's Kyushu University has developed a new catalyst material for direct methanol fuel cells that provides the same performance as existing catalysts while using half the amount of platinum.

Hydrogenics Corporation has been selected to provide a hydrogen electrolyzer and fuel cell for the new Renewable Hydrogen Research and Demonstration Centre at the Baglan Energy Park. The Centre, which is being developed by the University of Glamorgan, is the first of its kind in Wales, and will explore the potential use of hydrogen as one of the key fuels of the future and

show how hydrogen can be produced from local sources. Air Liquide Advanced Technologies was selected to integrate the whole hydrogen solution.
http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=320985

Georgetown University's Methanol Fuel Cell Transit Bus Integration and Test Project will use a customized battery pack from Danbury, Conn.-based Electro Energy Inc. in the bus it is developing with funding from the Federal Transit Administration. The university is developing the next-generation liquid fueled (methanol) fuel cell power plant to be integrated and tested on a heavy-duty hybrid electric transit bus. The fuel cell system is envisioned to be sufficient to power a 30-foot hybrid electric transit bus when optimized for operation with an onboard energy storage system. http://ir.electroenergyinc.com/releasedetail.cfm?ReleaseID=321893

The Nikkei Weekly in Japan reported in its July 14 edition that a research group from the Toyohashi University of Technology has developed an inorganic composite with high proton conductivity that is promising for use as the electrolyte material in solid-polymer fuel cells.
The University of California, San Diego will produce 2.4 Megawatts of electricity from fuel cells powered by renewable methane as part of what is being touted as one of the largest sustainable energy programs on a university campus in the United States. The program was launched this month with the installation of solar photovoltaic panels atop a campus utility plant. Construction of the fuel cell installation begins this fall. The methane fuel will be transported to UC San Diego from the Point Loma sewage treatment plant, where it is produced.
http://ucsdnews.ucsd.edu/newsrel/general/07-08PVInstall.asp

The University of California, Davis has received funding from the U.S. Environmental Protection Agency to assess how the rise in zero-emission vehicles, such as all-electric vehicles and fuel cell hybrid vehicles, will affect future air quality in California. Even though these vehicles have no tailpipe emissions, there may be emissions produced when their electric or hydrogen fuels are manufactured. http://www.news.ucdavis.edu/search/printable_news.lasso?id=8710&table=news

A greener, less expensive method to produce hydrogen for fuel may eventually be possible with the help of water, solar energy and nanotube diodes that use the entire spectrum of the sun's energy, according to Craig A. Grimes, professor of electrical engineering at Penn State University. Grimes and his team produce hydrogen from solar energy using two different groups of nanotubes in a photoelectrochemical diode. They report in the July issue of *Nano Letters* that using incidental sunlight, "such photocorrosion-stable diodes generate a photocurrent of approximately 0.25 milliampere per centimeter square, at a photoconversion efficiency of 0.30 percent." http://live.psu.edu/story/33620

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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/)

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