news from
FUEL CELLS 2000

Fuel Cell Technology Update – July 2, 2007

To: Reporters, editors and investors following business, energy, automotive and technology news. Let us know if you would prefer to receive the full updates via email, or if you wish to be removed from our list. *For more information on stories, call (202) 785-4222.*

TRANSPORTATION APPLICATIONS

AeroVironment Successfully Flies Unmanned Fuel Cell Aircraft.
AeroVironment (AV) successfully flew its Puma small unmanned aircraft, powered by an onboard fuel cell battery hybrid energy storage system, for nearly five hours, completing the first task under AV's contract with the U.S. Air Force Research Laboratory (AFRL) for the development of advanced propulsion technologies for unmanned aircraft. The $4.7 million, five-year IDIQ contract calls for several development tasks designed to improve the efficiency and flight duration of small unmanned aircraft systems (UAS). Other tasks under the contract include improvement of electric motor efficiency, integration of solar cells into aircraft wings, and the exploration of hydrogen storage technologies. For this flight demonstration, AV worked with Protonex Technology Corporation to develop the fuel cell battery hybrid energy storage system, which included hydrogen generation technology licensed from Millennium Cell Inc.
http://www.avinc.com/pr_detail.asp?ID=52

H2 Logic Receives Order for Ship APU.
H2 Logic has received an order for a fuel cell-based auxiliary power unit for onboard a ship. The project is part of a new $3.5 million Icelandic demonstration program, SMART-H2, managed by Icelandic New Energy.
http://www.h2logic.com/com/shownews.asp?lang=en&id=143

Hydrogenics Developing Units for Materials Handling Market.
Hydrogenics Corporation is set to deliver 60-80 HyPX Fuel Cell Power Packs for the material handling market. This includes deliveries and deployments to several world leading OEMs for both Class 1 lift trucks and Class 2 reach trucks, a major U.S. distributor, the armed forces, and automotive and other high production manufacturers. The majority are being deployed at customer facilities in pilot programs of 10 to 20 units for the purpose of evaluating the HyPX solution for broader enterprise-wide deployments.
http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=250413

STATIONARY APPLICATIONS

AFC Enters MOU With Indonesian Government.
AFC Energy plc has entered into a Memorandum of Understanding (MOU) with the Government of Indonesia, and specifically with the State Ministry for Development of Disadvantaged Areas of the Republic of Indonesia. The MOU aims to provide 32 million households with the ability to produce electricity and potable drinking water over the next 10 years. AFC Energy has been appointed as the exclusive fuel cell supplier to this program, whether with AFC Energy proprietary fuel cells or as an agent for third party fuel cells. The MOU contains an initial order of $13.5 million for three thousand 3.5kW systems at $4,500 per system. Supplies are scheduled to begin around the fourth quarter of 2008. The primary trial of 3,000 units will be in the Nabire-Papua region.
http://www.afcenergy.com/2007/06/11/mou-signed-with-the-government-of-indonesia-including-us135-million-initial-order/

POSCO Power Sells 5.1 MW of Power Plants.
POSCO Power, FuelCell Energy, Inc.'s distribution partner, has sold 5.1 megawatts (MW) of new power plants in South Korea. Each of the three projects will operate in a grid-support capacity, supplying energy output directly onto the existing electric network. Utility customers purchasing the Direct FuelCell® (DFC®) power plants through POSCO Power include two generating company subsidiaries of Korea Electric Power Company (KEPCO), as well as a private Independent Power Producer recently formed by investors. Each power plant purchase will use government funding made available under a green energy program instituted last year by South Korea's Ministry of Commerce, Industry and Energy (MOCIE).
http://fcel.client.shareholder.com/releasedetail.cfm?ReleaseID=246885

NIST to Test Residential SOFC System.
The National Institute of Standards and Technology (NIST) will test an Acumentrics Corporation 5-kW tubular SOFC system, to determine the seasonal performance of residential fuel cell systems for the development of a consumer-oriented performance rating. NIST is responsible for developing rating methodologies for many consumer appliances such as air conditioners and refrigerators and is using the Acumentrics generator, among others, to help develop a proposed standard for rating the performance of residential fuel cells.
http://www.acumentrics.com/7c2b1cbc-ae8c-412c-82bb-a74c3e9b0e3b/press-releases-release-details.htm

CRES Installs Alkaline Fuel Cell.
The Center of Renewable Energy Sources (CRES), located in Greece, has installed an alkaline fuel cell at its Hydrogen Technologies Laboratory. Tropical S.A, in cooperation with Astris Energi, delivered the 1.8-kW fuel cell.
http://www.tropical.gr/pages/view_product.php?product=ALK-FCA

PORTABLE/BACKUP POWER

Hydra Fuel Cell Taking Pre-Certification Orders.
American Security Resources Corporation's Hydra Fuel Cell subsidiary is taking pre-certification orders for its advanced HydraStax® fuel cells. The HydraStax® units can be configured with outputs ranging from 325 Watts to 5 kilowatts in a standard server type case.
http://www.americansecurityresources.com/news/20070605.cfm

MICRO FUEL CELLS

MTI Delivers Next Generation Prototypes to Korean Partner.
MTI MicroFuel Cells Inc. has delivered its next-generation, low power, advanced industrial design prototypes to its Korean partner. These next-generation fuel cell prototypes are based on its 100% methanol Mobion® technology and are more than 30% smaller in size and 20% lighter in weight than its predecessors.
http://www.mtimicrofuelcells.com/news/article.asp?id=285

FUELS/REFORMERS/STORAGE

Hydrogen Station Opens in Norway.
Norsk Hydro's first hydrogen refueling station opened in Porsgrunn, Norway. The Norwegian government, industry participants, and Norsk Hydro are participating in a joint effort called HyNor. The new hydrogen filling station is part of the planned "Hydrogen Highway" between Oslo and Stavanger.
http://www.sikunews.com/art.html?catid=7&artid=3308

Power+Energy Demonstrates Fuel Processor.
Power+Energy, Inc. has developed and demonstrated an energy efficient fuel processor that extracts over 90 percent of the available hydrogen from ethanol using palladium alloy membrane reactor technology. The system can be configured to utilize a variety of liquid fuels including E-85, gasoline,

methane, propane and diesel. P+E is under contract to the Department of Defense to deliver a 50kW sulfur immune hydrogen separation membrane reactor designed to work with low cost diesel.
http://www.powerandenergy.com/news_documents/press_release_06-21-2007.html

DMFCC Files Patent Application for Tamper Resistant Fuel Cartridges.
Direct Methanol Fuel Cell Corporation (DMFCC) has filed a patent application for its tamper resistant fuel cartridges for micro fuel cells. These cartridges can also be used for other applications such as catalytic heaters that require delivery of a liquid fuel.
http://www.viaspace.com/press_content.asp?id=1138

2007-2008 Hydrogen Student Design Contest.
The 2007-2008 theme for the Hydrogen Student Design Contest, sponsored by the Hydrogen Education Foundation (HEF), is "Hydrogen Applications for Airports." This contest gives multi-disciplinary teams of university-level students from around the world the opportunity to develop innovative design concepts using hydrogen and fuel cell technologies. The winning teams will be given the opportunity to present their designs to over 1,500 energy industry professionals at the NHA's 19th Annual Hydrogen Conference and will eligible to receive up to $5,000 for travel and expenses.
www.hydrogencontest.org.

Waldorf School Wins Extreme H2 Challenge.
Aberdeen's Waldorf School took top honors winning the best overall engineered entry in the “Extreme H2” hydrogen and fuel cell challenge. The team receives £1,000 to purchase a science kit for the school. The team built the “Hydrogen Wave Salvage Crane,” a fully-functioning, remote controlled, floating hydrogen powered moving platform with a crane operating an electro-magnet to collect ferrous metal from the sea bed. The program was run by Career Scotland across 11 districts in Scotland with financial support from the Scottish Executive's Office for renewable energy.
http://www.aberdeen-education.org.uk/enterprise/documents/CS_S&T_Extreme-H2_Leaflet.pdf

New Refueler Chosen by SAE as Standard.
HG-004, a high pressure refueling receptacle developed for the filling of motor vehicles, was chosen by the SAE standards committee as the standard for the 700 bar (10150 psi) filling. The geometry of the refueling receptacle serves now as basis for the worldwide standardization according. to SAE TIR J2799 and SAE J2600. The product is manufactured by WALTHER-PRÄZISION and sold by Spez-Tech Engineered Fluid Power Technology.
http://www.walther-praezision.de/

MATERIALS/COMPONENTS

CFD Awarded DOE Contract.
CFD Research Corporation (CFDRC) has won a $5 million contract from the U.S. Department of Energy for hydrogen fuel cell research and development work. The team led by CFDRC includes Ballard Power Systems, BCS Fuel Cells, ESI US R&D, Research Triangle Institute, and SGL Technologies GMBH. The team will perform computational and experimental studies to improve fuel cell design, materials, and operating strategies for automotive applications. .
http://www.cfdrc.com/news/items/2007/doe_hydrogen_fuel_cell.html

REQUESTS FOR PROPOSALS

DOE Extends Deadline for RFI on Early Markets for Hydrogen and Fuel Cells.
In April, the U.S. Department of Energy's Hydrogen Program released a "request for information" (RFI) on early markets for hydrogen and fuel cells. The RFI focused on opportunities for the early adoption of hydrogen and fuel cell technologies and supporting activities. The deadline for providing comments has been extended to July 31, 2007. The RFI seeks public comment on three main topics; early market financial assistance, fuel cell performance testing, and community partnerships. For more information about several near-term fuel cell markets that DOE is considering to help stimulate demand, refer to the recent Identification and Characterization of Near-Term Direct Hydrogen PEM Fuel Cell Markets report at

www1.eere.energy.gov/hydrogenandfuelcells/pdfs/pemfc_econ_2006_report_final_0407.pdf. The report focuses on using fuel cells to power forklifts and provide backup power for telecommunications and emergency response radio towers. This RFI is part of the Hydrogen Program's effort to facilitate market transformation. Visit DOE's E-Center to view the full RFI and for information on how to provide comments at: https://e-center.doe.gov/iips/faopor.nsf/8373d2fc6d83b666852564520079 63f5/60bee4bacaa2e83a852572c9005653f0?OpenDocument.

REPORTS/MARKET STUDIES

Powering the Plains.
Leaders from industry, agriculture, state and provincial governments and environmental groups in Minnesota, Iowa, North Dakota, South Dakota, Wisconsin and Manitoba have reached agreement on a 50-year roadmap for that region's energy future. A first-of-its- kind for the Upper Midwest, the roadmap is the result of three years of intense education and discussion among these leaders, convened and facilitated by the Great Plains Institute's Powering the Plains (PTP) program.
http://www.poweringtheplains.org/

MISCELLANEOUS

Altergy Systems Unveils Automated Fuel Cell Assembly Line.
Altergy Systems has unveiled the world's first and only automated, high volume fuel cell assembly line that enables mass production of Altergy's fuel cell products, offering substantial opportunities to expand fuel cell production and deployment around the world. The new production line, installed at Altergy's production facility in Folsom, California, is capable of producing thousands of fuel cell plates per day, representing orders of magnitude increases in rate and capacity over typical hand-built fuel cell plates and systems.
http://www.altergy.com/announcements/first_automated_assembly_line.asp

ECOtality Acquires Fuel Cell Store.
ECOtality has acquired Fuel Cell Store, an online retailer for the fuel cell industry.
Fuel Cell Store, based in Boulder, Colorado, distributes, manufactures, and sells a range of fuel cell products including fuel cell stacks, systems, component parts and educational materials.
http://www.ecotality.com/pressreleases/FCS.pdf

Bac2 to Open New UK Facility for Fuel Cells.
Bac2, a fuel cell materials company, will open new offices and a test laboratory at the Millbrook Technology Campus in Southampton, UK, in August 2007. Bac2 manufactures ElectroPhen, a patented conductive polymer used to create bipolar plates and end caps for polymer electrolyte membrane fuel cell stacks.
http://www.bac2.co.uk/press_release.php?pr=005

CONFERENCES

For a complete list of conferences, please go to http://www.fuelcells.org/news/conf.html

MEA Symposium.
The 3rd Membrane Electrode Assembly Manufacturing Symposium will be held August 21-23, 2007, at the Dayton Marriott in Dayton Ohio. For more details, please visit http://www.emtec.org/fuelcells/events/mea07/index.php.

Grove Fuel Cell Symposium.
The Tenth Grove Fuel Cell Symposium will be held at the QEII Conference Center in London, England, September 25-27, 2007. For information, please go to http://www.grovefuelcell.com/.

RENEXPO®.

RENEXPO®, a renewable energies and energy efficient building and renovation expo, will be held September 27-30, 2007, at the Trade Fair Center in Augsburg, Germany. For details, go to http://www.renexpo.de/?lang=en.

NHA Forum.
The NHA Fall Topical Forum: Hydrogen Uses in the Military will be held October 2-4, 2007, at the Columbia Metropolitan Convention Center, in Columbia, South Carolina. For more information, please go to http://www.hydrogenforums.org/07Military.

Fuel Cell Seminar.
"Fuel Cells: On the Path to Energy Independence" will be held October 15-19, 2007, at the Henry B. Gonzalez Convention Center in San Antonio, Texas. More information can be found at http://www.fuelcellseminar.com/.

FC Expo 2008.
The 4th International Hydrogen & Fuel Cell Expo (FC Expo 2008) will be held February 27-29, 2008, at Tokyo Big Sight in Tokyo, Japan. For conference information, please visit http://www.fcexpo.jp/english/.

Battery Seminar.
The 25th International Battery Seminar & Exhibit: Primary & Secondary Batteries - Small Fuel Cells - Other Technologies, will be held March 17-20, 2007, at the Broward County Convention Center in Fort Lauderdale, Florida. For more information, please go to http://www.powersources.net/

NHA Annual Conference.
The National Hydrogen Association's 19th Annual Hydrogen Conference: Ramping Up Commercialization, will be held, March 29-April 2, 2008, at the Sacramento Convention Center in Sacramento, California, For conference details, go to http://www.hydrogenconference.org/.

Fuel cells generate electricity without combustion by harnessing the energy created when hydrogen and oxygen are chemically combined. Fuel Cells 2000 is an independent, nonprofit activity dedicated to the commercialization of fuel cell technologies.