

# *news from* **FUEL CELLS 2000**

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## **Fuel Cell Technology Update – January 2, 2008**

**To: Reporters, editors and investors following business, energy, automotive and technology news.**  
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### **TRANSPORTATION APPLICATIONS**

#### **GM Introduces Fuel Cell Cadillac.**

At this year's North American International Auto Show, General Motors introduced its fuel cell-powered Cadillac prototype, the Provoq Concept. The Provoq features GM's E-Flex propulsion system which combines its new fifth-generation fuel cell system and a 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/08nais/brands/cadillac/provoq/provoq.htm>

#### **Five CALSTART Fuel Cell Bus Projects Underway.**

CALSTART has secured and launched contracts for five major fuel cell bus technology development projects in California with the Federal Transit Administration (FTA), a \$24-million effort that involves multiple fuel cell and drive system leaders, three transit districts and three major bus makers. The FTA is providing \$12-million in funding; the private companies involved provide the balance.

[http://www.businesswire.com/portal/site/google/index.jsp?ndmViewId=news\\_view&newsId=20080129005365&newsLang=en](http://www.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_view&newsId=20080129005365&newsLang=en)

#### **Hydrogenics Receives Order for Seven Power Modules.**

Hydrogenics Corporation has received orders for a total of seven Hydrogenics 12 kW HyPM™ fuel cell power modules from Airbus Deutschland GmbH, a subsidiary of Airbus S.A.S., and DLR Deutsches Zentrum für Luft- und Raumfahrt e.V., the German Aerospace Center. The fuel cell power modules will undergo various tests relating to application within commercial aircraft by Airbus Deutschland and DLR. Hydrogenics anticipates that all seven fuel cell modules will be delivered before the end of the first quarter of 2008.

[http://www.hydrogenics.com/ir\\_newsdetail.asp?RELEASEID=287241](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=287241)

#### **Ballard Signs Supply Agreement with H2 Logic for Materials Handling, Completes Sale of Automotive Assets.**

Ballard Power Systems has signed a two-year supply agreement with Danish system integrator H2 Logic A/S, to supply fuel cells for products developed for the materials handling market. Under the agreement, H2 Logic will purchase Mark9 SSL™ and Mark1020 ACS™ fuel cell products from Ballard and integrate these into fuel cell hybrid systems targeted for various materials handling vehicles such as forklifts for warehouses and distributions centers. Ballard has also completed the transaction to sell its automotive fuel cell assets to Daimler AG and to Ford.

<http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=irol-newsArticle&ID=1096837&highlight=>  
<http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=irol-newsArticle&ID=1102838&highlight=>

#### **Smart Fuel Cell Introduces Hybrid Control System.**

SFC Smart Fuel Cell has introduced a new intelligent hybrid control system that allows for operation of its EFOY fuel cell with solar cells onboard recreational vehicles (RVs). The hybrid control system, developed

by Buettner-Elektronik, enables maximum utilization of solar energy in combination with the EFOY fuel cell to provide continuous power.

[http://www.efoy.de/index.php?option=com\\_content&task=view&id=920&Itemid=177](http://www.efoy.de/index.php?option=com_content&task=view&id=920&Itemid=177)

## **STATIONARY APPLICATIONS**

### **Ceramic Fuel Cells and Paloma to Develop Units for Japanese Market, Ships Units to Other Partners.**

Ceramic Fuel Cells Limited (CFCL) has signed an agreement with Paloma Industries Ltd of Japan to evaluate and develop integrated fuel cell micro-combined heat and power (m-CHP) products for the Japanese market. As part of the collaboration, CFCL will supply Paloma with a NetGenPlus™ unit in mid 2008 for Paloma to operate at its site in Japan for 12 months. Using the results of the real-world product operation, CFCL and Paloma will design and develop integrated m-CHP products to meet the specifications of the Japanese market. CFCL has also shipped a NetGenPlus™ unit to the United Kingdom part of its agreement with E.On UK Ltd and Gledhill Water Storage Ltd to develop m-CHP products for the British market. CFCL will also ship a NetGenPlus™ unit to its appliance partner De Dietrich Thermique, part of the De Dietrich Remeha Group, as part of CFCL's agreements to develop commercial m-CHP products for the French and Benelux markets.

[http://www.cfcl.com.au/Assets/Files/20080117\\_CFCL\\_Paloma\\_Collaboration\\_Announcement.pdf](http://www.cfcl.com.au/Assets/Files/20080117_CFCL_Paloma_Collaboration_Announcement.pdf)

[http://www.cfcl.com.au/Assets/Files/20080110\\_CFCL\\_Net\\_Gen\\_plus\\_shipments\\_v2.pdf](http://www.cfcl.com.au/Assets/Files/20080110_CFCL_Net_Gen_plus_shipments_v2.pdf)

### **HydroGen and Samsung Enter into Multiple Agreements.**

HydroGen Corporation and Samsung Corporation have entered into a Master Cooperation Agreement, an Exclusive Distribution and Marketing Agreement under which Samsung will act as HydroGen's sole and exclusive distributor to market, distribute and sell its phosphoric acid fuel cell (PAFC) power plants in Asia, the Middle East and other regions. The companies have also signed a non-binding Letter of Intent for the sale of an initial 5-MW fuel cell power plant.

<http://www.hydrogenllc.net/hydrov2/index.php?id=18,50,0,0,1,0>

### **Ceres and British Gas Sign Major Deal.**

Ceres Power has signed a major new agreement with Centrica (trading as British Gas) that includes funding for a trial program and a volume forward order for residential combined heat and power (CHP) products. Under the terms of this new agreement, British Gas will pay £5 million to Ceres in staggered payments over an initial phase which is expected to be completed in 2011. In this phase, Ceres will complete the value engineering of the CHP product and, together with British Gas, conduct commercial infield trials with residential customers and commence initial sales. British Gas has also placed a forward order to purchase in aggregate a minimum of 37,500 CHP Products on an escalating basis over a four-year period.

<http://www.cerespower.com/news/BG%20development%20supply%20and%20distribution%20agreement.pdf>

### **Acumentrics Fuel Cell Powers Through Park Blackout, Achieves ISO 9001 Certification.**

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 recent power outage due to an electric grid failure. Acumentrics has two of its units installed at the park. Acumentrics also has been accredited to the International Quality Standard (ISO 9001:2000) for its design, production workflow, quality systems and processes in its Rugged Uninterruptible Power Supplies (RUPS) Product line.

<http://www.acumentrics.com/4647d23d-4d02-4174-9176-50815ff40166/press-releases-release-details.htm>

<http://www.acumentrics.com/846c55ab-d258-46c4-ab96-979a4e92a457/press-releases-release-details.htm>

### **Delphi and RIT Receive \$2.75 Million for SOFCs.**

Delphi; and the Rochester Institute of Technology (RIT) Center for Integrated Manufacturing Studies (CIMS) have received \$2.75 million in federal funds for fuel cell development. The joint project seeks to

accelerate the application of solid oxide fuel cells into stationary and mobile systems within the U.S. Department of Defense.

[http://delphi.com/news/pressReleases/pr\\_2008\\_01\\_08\\_001/](http://delphi.com/news/pressReleases/pr_2008_01_08_001/)

## **PORTABLE/BACKUP POWER**

### **IdaTech and Microm Enter Distribution Agreement.**

IdaTech has executed a distribution agreement with Microm S.A. de C.V for the Caribbean, Central and South American regions. In parallel with the signing of this agreement, Microm has purchased ten of IdaTech's fully integrated ElectraGen™ backup power fuel cell systems incorporating hydrogen reformers to be deployed into live communications sites following delivery early this year.

<http://www.idatech.com/press191161471.asp>

## **MICRO FUEL CELLS**

### **NEC to Ship Fuel Cell Phones Later This Year.**

NEC announced plans to ship a fuel cell-powered cell phone in late 2008. The colorful phones will most likely run on ethanol.

<http://www.cinemablend.com/technology/NEC-Implements-Fuel-Cells-For-Cell-Phones-8539.html>

### **Horizon and Millennium Cell to Debut HydroPak™.**

Horizon Fuel Cell Technologies and Millennium Cell have completed a pre-production version of the HydroPak™ portable power generator that incorporates a unique water-activated cartridge system. The HydroPak™ product combines Horizon's fuel cells with Millennium Cell's Hydrogen on Demand® storage technology.

<http://www.horizonfuelcell.com/file/HydroPak.pdf>

## **FUELS/REFORMERS/STORAGE**

### **Power+Energy Delivers 50-kW Hydrogen Separator Unit to Navy.**

Power+Energy has delivered a 50-kW hydrogen separation membrane assembly, its largest to date, to the Naval Surface Warfare Center (NSWC) in Philadelphia, Pennsylvania, as one of the deliverables under a project funded by the Office of Naval Research. The membrane system is designed to extract fuel cell grade hydrogen from a stream of reformed logistic diesel fuel (JP-8). This unit will be installed by the Navy into a demonstration system, which will convert diesel fuel into high-purity hydrogen to feed a large hydrogen fuel cell.

[http://www.powerandenergy.com/news\\_documents/press\\_release\\_01-29-2008.html](http://www.powerandenergy.com/news_documents/press_release_01-29-2008.html)

### **Nanoptek Raises \$4.7 Million in Funding.**

Nanoptek Corporation has closed a \$4.7 million Series A equity financing round, led by The Quercus Trust, Ardour Capital Investments, LLC, the Massachusetts Technology Collaborative (MTC) and private investors. With this investment, Nanoptek expects to complete the development of its field-deployable Solar Hydrogen Generator, develop pilot manufacturing capability, and install the first pilot plant for producing carbon-free hydrogen.

[http://www.nanoptek.com/newsPR.html#Nanoptek%20Corporation%20Secures%20\\$4.7M%20in%20Series%20A%20Round](http://www.nanoptek.com/newsPR.html#Nanoptek%20Corporation%20Secures%20$4.7M%20in%20Series%20A%20Round)

### **Electric Hydrogen Delivers Hydrogen Canister Filling Systems.**

Electric Hydrogen has delivered its first two metal hydride canister filling systems that enable convenient recharging of commercially available metal hydride canisters. The units will refuel canisters for golf and utility vehicles at the St. Clair Parkway Golf Course and Lambton College, in support of the college's pioneering Alternative Energy Engineering program. The project is funded in part by the Government of Ontario through its Ontario Fuel Cell Innovation Program.

<http://www.electrichydrogen.com/media/MHF%20Announcement%2020080115.pdf>

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

Construction has begun on a new 750-square-foot laboratory at the National Institute of Standards and Technology (NIST) campus in Boulder, Colorado, that will evaluate tests, materials, mechanical properties and standards for hydrogen pipelines. The facility is expected to be operational by mid-2008. [http://www.nist.gov/public\\_affairs/techbeat/tb2008\\_0123.htm#hydrogen](http://www.nist.gov/public_affairs/techbeat/tb2008_0123.htm#hydrogen)

## **MATERIALS/COMPONENTS/TESTING**

### **VIASPACE Begins Sensor Shipments.**

VIASPACE Inc.'s Energy Division has begun the first shipments to Europe for its HS-1000 VIASENSOR relative humidity instrument to Rotronics of England and the Energy Research Centre of the Netherlands (ECN).

[http://www.viaspace.com/press\\_article.php?id=1172](http://www.viaspace.com/press_article.php?id=1172)

### **Ceramic Fuel Cells and H.C. Starck to Develop SOFC Components.**

Ceramic Fuel Cells Limited (CFCL) has signed agreements with H.C. Starck to develop advanced SOFC components, in particular anode supported cells. Under a supply agreement, H.C. Starck will supply fuel cells at agreed prices until December 2011, securing long term costs for CFCL. Supply of the fuel cells is expected to commence in mid 2008.

[http://www.cfcl.com.au/Assets/Files/Starck\\_final\\_Eng.ASX.pdf](http://www.cfcl.com.au/Assets/Files/Starck_final_Eng.ASX.pdf)

### **NETL Receive Patent for Flow Control Device.**

National Energy Technology Laboratory's (NETL) University Research Initiative Program, with research partners at the University of Pittsburgh, received a patent for a flow control device to improve flow distributions within fuel cells.

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

## **REPORTS/MARKET STUDIES**

### **2008 Industry Review.**

In Fuel Cell Today's newly published 2008 Industry Review, titled "Fuel Cells: Commercialisation", analysts report that in the last year the fuel cell industry has seen a growth of 75% in new units delivered, with some 12,000 new fuel cell units shipped during 2007. The Fuel Cell Industry Review provides a summary of worldwide fuel cell activity and forecasts of fuel cell shipments for the next two years. The forecasts include data by geographical region, fuel cell technology type and end use application. The report is priced at GBP£500 (US\$1,000), and is available to order from

<http://www.fuelcelltoday.com/events/industry-review>.

## **REQUESTS FOR PROPOSALS**

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

The Department of Energy (DOE) issued a solicitation for applied research and development projects addressing viable hydrogen storage technologies for on-board vehicular applications to complement the existing National Hydrogen Storage Project portfolio. Projects may support existing DOE Hydrogen Storage Centers of Excellence or may be independent R&D projects. The total funding available for all new awards is \$6 million. Pre-application deadline is February 28, 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)

### **NYSERDA Offers \$11.2 Million for Fuel Cell Installations.**

The New York State Energy Research and Development Authority (NYSERDA), administrator of the New York Renewable Portfolio Standard (RPS) Program, is accepting applications to receive financial incentives to support the purchase, installation, and operation of stationary Fuel Cell Systems in New York State. Both capacity and performance-based electricity production incentives are available, with preference going to electric customers that pay the RPS Program Surcharge. \$11.2 million is available with up to \$1 million available per fuel cell system. Proposals are due on a first come, first serve basis or until all funding has been fully committed, whichever occurs first by May 29, 2009.

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

## **MISCELLANEOUS**

### **Corgi and Horizon Complete Strategic Partnership.**

Corgi International Limited and Horizon Fuel Cell Technologies have completed a strategic partnership agreement that will allow Corgi International to utilize Horizon's fuel cell technologies to develop a range of environmentally-friendly, green-powered toy vehicles.

<http://www.horizonfuelcell.com/>

### **ECotality Relocates Fuel Cell Store to San Diego.**

ECotality, Inc. has completed the transition of Fuel Cell Store from Boulder, Colorado to San Diego, California. Fuel Cell Store will share warehouse and operational facilities with Innergy Power Corporation.

[http://www.ecotality.com/pressreleases/010808\\_ETLY\\_Completes\\_Fuel\\_Cell\\_Store\\_Move.pdf](http://www.ecotality.com/pressreleases/010808_ETLY_Completes_Fuel_Cell_Store_Move.pdf)

## **CONFERENCES**

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

### **FC Expo 2008.**

The 4<sup>th</sup> 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/>.

### **NHA Annual Hydrogen Conference & Hydrogen Expo US 2008.**

The National Hydrogen Association's National Conference 2008, "Ramping Up Commercialization" and the Hydrogen Expo US 2008 exhibition will be held at the Sacramento Convention Center in Sacramento, California on March 30-April 4, 2008. For details on both events, go to

<http://www.hydrogenconference.org/>.

### **Group Exhibit H2/FC at Hannover Messe 2008**

The Group Exhibit H2/FC is a specialized exhibit area inside the Hannover Industry Fair, which will be held in Hannover, Germany from April 21-25, 2008. For more information, please go to

[www.fair-pr.com/hm08/for-visitors/index.html](http://www.fair-pr.com/hm08/for-visitors/index.html).

### **Small Fuel Cells 2008.**

The 10<sup>th</sup> Annual International Conference Small Fuel Cells<sup>SM</sup> 2008: Portable & Micro Fuel Cells For Commercial & Military Applications will be held at the Omni Hotel at CNN Center in Atlanta, Georgia, from April 30-May 2, 2008. For details, go to <http://www.knowledgepress.com/events/8011207.htm>.

### **Fuel Cell 2008.**

The 2008 Fuel Cell Conference will take place May 21-22, 2008, at the Hyatt Regency Long Beach in Long Beach, California. For more information, please go to [http://www.fuelcell-magazine.com/FC\\_2008/2008.htm](http://www.fuelcell-magazine.com/FC_2008/2008.htm).

### **FDFC 2008.**

Fundamentals & Developments of Fuel Cells (FDFC) 2008 Conference will be held December 10-12, 2008, at the Congress Centre in Nancy, France. For conference information, go to

<https://matar.ciril.fr/CONGRES/homefdfc.php>.

*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.*