

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

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## **Fuel Cell Technology Update – August 1 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.

For a free ticket into the Grove Fuel Cell exhibition, check out our conference listings section.

### **Help Fuel Cells 2000 Help the Fuel Cell Industry.**

Fuel Cells 2000 needs your help to make our programs as effective, and cost effective, as possible. We are conducting an informal review of the communications barriers fuel cell and hydrogen advocates are facing. We are hoping to launch some new communications tools and also provide a regular opportunity, if there is demand for it, for communications professionals to compare notes on strategies for overcoming these challenges. Please help us by taking a look at our survey - your answers will greatly improve our focus. In return, we will send you the survey results and a report. We are interested in the obstacles you and your organization face, in your strategies to overcome them, in success stories, in failures (and reasons why), and, finally, in your advice and wisdom on strategies for the future. Together, we hope the information and follow-up will help in some small way to shape the global message about fuel cells and hydrogen and help us all present a more unified front. You can send completed surveys to

[Jennifer@fuelcells.org](mailto:Jennifer@fuelcells.org).

<http://www.fuelcells.org/surveyindustryfinal.doc>

And now, on with the newsletter...

## **TRANSPORTATION APPLICATIONS**

### **Michelin to Test Fuel Cell Forklifts.**

LiftOne and Engineered Solutions, divisions of Carolina Tractor, have unveiled two hydrogen-powered fuel cell lift trucks that will be deployed to Michelin's Columbia, South Carolina plant, in the first of six two-week evaluations at facilities in the greater Columbia area. The lift trucks have been equipped with Hydrogenics HyPX Fuel Cell Power Packs and installed by LiftOne in electric lift trucks manufactured by Linde Materials Handling.

### **Protonex Receives Air Force Contract Extension.**

Protonex Technology Corporation has received an \$800,000 extension to a previously awarded contract with the Air Force Research Laboratory (AFRL) to optimize performance of its unmanned aerial vehicle (UAV) propulsion system, ProCore™ UAV. Under this extended program, Protonex will increase the power density of the ProCore™ UAV fuel cell system to enable longer flight times and increased payload capability of small unmanned aircraft. In addition, Protonex will work with subcontractor Millennium Cell, Inc. to advance the chemical hydride fueling subsystem to increase energy density.

<http://www.protonex.com/07-03-07%20UAV%20Phase%20Ile%20US.pdf>

### **UQM to Provide Motor, Hydrogenics to Provide Fuel Cell to Bus.**

UQM Technology will provide a 150-kilowatt permanent magnet propulsion motor to power a plug-in fuel cell series hybrid electric bus being developed by Mobile Energy Solutions, LLC, with funding under the Federal Transit Administration's National Fuel Cell Bus Program. The 35-foot long bus uses two 16-kilowatt automotive fuel cell stacks from Hydrogenics, Inc. that can either operate in parallel when needed or alternately as single units when maximum load is not required.

<http://www.uqm.com/press/news/08-09.html>

### **Smart's EFOY Fuel Cell Now Offered on Dethleffs Motor Homes.**

Dethleffs Corporation will be offering SFC Smart Fuel Cell's EFOY fuel cells as an option on all their motor homes beginning with the new model season. The EFOY comes in three models with a charging capacity of 600 Wh, 1200 Wh and 1600 Wh per day. The fuel cartridges can be bought at over 500 sales points in Europe - one EFOY M10 cartridge can supply a motor home with independent power for up to four weeks.

[http://www.efoy.de/index.php?option=com\\_content&task=view&id=905&Itemid=177](http://www.efoy.de/index.php?option=com_content&task=view&id=905&Itemid=177)

## **STATIONARY APPLICATIONS**

### **Fuel Cells Making the Concert Circuit.**

Recently fuel cells have been playing backup at several concerts around the world. At the Bayfest festival in Sarnia, Ontario, the Sarnia Lambton Economic Partnership, in combination with Bluewater Power and the Sustainable Energy Association, provided hydrogen fuel cells to power lighting supplied to the front and rear entrances to the Bayfest grounds at Centennial Park. Workers used a hydrogen-powered John Deere Gator to transport the fuel cells. At Live Earth's Wembley Stadium location in the UK, Voller Energy provided four of its "ABC" fuel cell systems for the show. These types of demonstrations are great to showcase the technology to the general public, so rock on!

### **Sewage Plant to Install HotModule Fuel Cell.**

Moosburger Kläranlagen GmbH, a sewage plant operator in Moosburg, Germany, will install a 250-kW HotModule fuel cell supplied by CFC Solutions in the fall. This will be the third sewage plant to utilize CFC's fuel cells, which provide an electrical efficiency of 47 percent and produces heat at around 400 °C (ideal for drying sewage sludge). Half the cost of the Moosburg project is paid for by the German Ministry for Economy and Technology.

[http://www.mtu-cfc.com/en/pres/pres\\_070627.htm](http://www.mtu-cfc.com/en/pres/pres_070627.htm)

### **Ceres Power to Demonstrate Wall Mounted CHP Unit.**

Ceres Power has designed and built an integrated, wall-mountable combined heat and power unit (CHP) for an upcoming demonstration at the Company's headquarters. The integrated CHP Unit is capable of generating electricity and all of the central heating and hot water requirements of a typical home, avoiding the need for a separate boiler, and so can address new build and replacement markets. The CHP Unit uses the same natural gas, water and electricity connections as a boiler, and is thus easy to install.

<http://www.cerespower.com/news/Ceres%20Power%20CHP%20demo%20FINAL%2019%2007%2007.pdf>

### **CFCL Signs Agreements for UK, Netherlands and Belgium.**

Ceramic Fuel Cells Limited (CFCL) and E.ON UK have signed an agreement to develop and deploy a prototype fuel cell combined heat and power (CHP) unit that can be fitted into homes in the UK. CFCL has also formed a collaboration with Nuon NV and De Dietrich-Remeha Group to jointly develop a fully integrated micro-combined heat and power (m-CHP) unit for the residential market across The Netherlands and Belgium.

<http://www.cfcl.com.au/Assets/Files/E%20ON%20and%20CFCL%20press%20release.ASX.pdf>

[http://www.cfcl.com.au/Assets/Files/20070724\\_CFCL\\_Nuon\\_Remeha\\_collaboration.pdf](http://www.cfcl.com.au/Assets/Files/20070724_CFCL_Nuon_Remeha_collaboration.pdf)

### **Hydra Fuel Cell Receives Purchase Order for Residential Fuel Cell.**

American Security Resources' Hydra Fuel Cell Corporation subsidiary has received a purchase order for an eight-kilowatt HydraStax residential fuel cell system from a waterfront resident on the Texas Gulf coast.

<http://www.americansecurityresources.com/news/>

## **PORTABLE/BACKUP POWER**

**IdaTech Awarded Additional Contract with CERDEC, Signs Three New International Contracts.**

IdaTech LLC has been awarded a second contract from CERDEC, the US Army's Communications Electronics Research Development and Engineering Center, to further develop its three kilowatt tactical fuel cell generator using jet and diesel fuel. Following the successful first year, this \$2.55 million award will focus on system integration, testing and evaluation. IdaTech has also signed contracts with three companies – Grupo Celsur, Innovation Wireless Products, Inc. and APECUS – to expand sales into Southeast Asia and Latin America.

<http://www.idatech.com/media/news.html?article=90>

<http://www.idatech.com/media/news.html?article=91>

#### **Hydra Fuel Cell Receives Purchase Order from TeleBlu.**

American Security Resources' Hydra Fuel Cell Corporation subsidiary has received a purchase order for a 25 kilowatt HydraStax® fuel cell system from Chicago based, international cellular operator TeleBlu, Inc.

<http://www.americansecurityresources.com/news/20070621.cfm>

#### **Voller Unit Receives TÜV SÜD Certification.**

TÜV SÜD has certified Voller Energy Group's fuel cell auxiliary power unit (APU). Voller's APU is a 1-kW fuel cell system that can operate on standard propane, liquefied petroleum gas (LPG) or Calor Gas. The system is designed for sailing yachts, recreational vehicles, motor homes and construction site welfare cabins.

<http://production.investis.com/vlr/rns/rnsitem?id=1184565669nRNSP2637A>

### **MICRO FUEL CELLS**

#### **CMR and Samsung Enter Joint Development Agreement.**

CMR Fuel Cells Plc has entered into a non-exclusive Joint Development Agreement with Samsung SDI Co. Ltd. of Korea. Under the terms of the agreement, Samsung and CMR will collaborate to produce a direct methanol fuel cell system incorporating CMR's mixed reactant stack technology. CMR has already delivered the first stack to Samsung.

[http://www.cmrfuelcells.com/index.php?option=com\\_content&task=view&id=64&Itemid=4](http://www.cmrfuelcells.com/index.php?option=com_content&task=view&id=64&Itemid=4)

#### **Tyco Enters Deal with Direct Methanol Fuel Cell Corporation.**

Tyco Electronics has signed a design and certified manufacturer agreement with Direct Methanol Fuel Cell Corporation (DMFCC), a subsidiary of Viaspace. Tyco Electronics will work with DMFCC on direct methanol fuel cells and liquid fuel cartridge products for laptop computers, mobile phones and other portable electronic devices.

[http://www.viaspace.com/press\\_content.asp?id=1140](http://www.viaspace.com/press_content.asp?id=1140)

### **FUELS/REFORMERS/STORAGE**

#### **IdaTech Secures Two Hydrogen Purification Contracts.**

IdaTech, LLC has secured two contracts based on IdaTech's hydrogen purification technology, the HyPurium™ membrane. One contract with a Japanese company will focus on the testing and evaluation of IdaTech's purification technologies for use in distributed hydrogen production. The second award, in collaboration with a European military contractor, is focused on the operation of the HyPurium™ membrane for high-power military applications.

<http://www.idatech.com/media/news.html?article=92>

#### **FuelCell Energy Signs Federal Contract to Scale Up Hydrogen Separation System.**

FuelCell Energy, Inc. has received approval to scale up a product that separates hydrogen from a gas mixture while generating electricity. The Electrochemical Hydrogen Separation (EHS) system, developed for the U.S. Army Engineer Research and Development Center's Construction Engineering Research Laboratory (ERDC-CERL), enables the pure, extracted gas to be sold as fuel for hydrogen vehicles or for industrial uses. The sub-scale prototype successfully operated for over 6000 hours and was operated and tested at the University of Connecticut. The \$1.225 million Phase II contract, supported in part by the U.S. Department of Defense, is expected to be complete by mid-2008.

<http://fcel.client.shareholder.com/releasedetail.cfm?ReleaseID=254757>

**P+E Receives SBIR Contract.**

Power and Energy, Inc. (P+E) has received a new Small Business Innovation Research (SBIR) Phase I contract from the US Office of Naval Research entitled "Modular High Power Fuel Cell System Design." Under this contract, P+E will demonstrate methods to recover the waste water from hydrogen fuel processing and remove critical impurities, including sulfur-bearing compounds. This recovered water can be reused to supply the water required for the fuel processing system.

[http://www.powerandenergy.com/news\\_documents/press\\_release\\_07-30-2007.html](http://www.powerandenergy.com/news_documents/press_release_07-30-2007.html)

**NHA Unveils Hydrogen and Fuel Cell Product Catalog.**

The National Hydrogen Association (NHA) has launched a new searchable online listing of 34 hydrogen and fuel cell products that are currently for sale or available for purchase within the next 12 months. Information for each product includes product dimensions, images, contact and purchase information.

<http://www.hydrogenassociation.org/general/productsSearch.asp>

**MATERIALS/COMPONENTS**

**FuelCon to Provide Test Stations for New SOFC Center.**

The Fraunhofer-Institute for Ceramic Technologies and Systems (IKTS), located in Dresden, Germany, will equip its newly built solid oxide fuel cell (SOFC) test center for industrial research with FuelCon Evaluator-S test stations.

<http://www.fuelcon.com/en/news/index.html>

**REQUESTS FOR PROPOSALS**

**Hydrogen & Fuel Cell Manufacturing R&D Solicitation Announced.**

To support the Advanced Energy Initiative, the U.S. Department of Energy has announced the "Manufacturing R&D for Hydrogen and Fuel Cell Systems" solicitation. Topic areas include Alternative Electrode Deposition Processes, Gas Diffusion Layer Fabrication, Novel MEA Manufacturing, Process Modeling for Fuel Cell Stacks, Process and Device for Cost Effective Testing of Cell Stacks and Manufacturing Technologies for High Pressure Composite Tanks Applications. DOE expects to select about 15 projects with individual awards up to \$4 million. Applications are due October 10, 2007.

[http://hydrogen.energy.gov/news\\_manufacturing\\_funding.html](http://hydrogen.energy.gov/news_manufacturing_funding.html)

**New DOD SBIR Solicitation Includes Hydrogen, Biofuel Topics.**

The Department of Defense has issued its SBIR solicitation, which includes two topics pertinent to fuels for fuel cells. The Air Force list of topics includes "Trace Level Sulfur Sensor" for detecting sulfur in hydrogen fuel, and "Portable Biomass Liquid/Gaseous Fuel Reactor" for production of high grade alternate liquid and/or gaseous fuels that may be suitable for use in fuel cells. Phase I awards are typically \$70,000 to \$100,000 for a period of six to nine months. Successful Phase I projects will be eligible to receive additional funding of \$500,000-\$750,000 for Phase II. Deadline for proposals is September 19, 2007. <http://www.acq.osd.mil/osbp/sbir/solicitations/sbir073/index.htm>

**REPORTS/MARKET STUDIES**

**International Hydrogen and Fuel Cell Funding.**

Fuel Cells 2000 has published a draft report listing international funding for hydrogen and fuel cells. The analysis compiles websites, presentations and reports to show how much money each country is spending on fuel cell and hydrogen research and demonstration. It is a work in progress and we welcome any edits, updates and suggestions.

<http://www.fuelcells.org/InternationalH2-FCpolicyfunding.pdf>

**Global Hydrogen Economy.**

A new study by BCC Research, *Building the Global Hydrogen Economy: Technologies and Opportunities*, predicts global investments in building the hydrogen economy to rise to nearly \$1.7 billion in 2007 and \$5.5 billion in 2012.

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

#### **Alternative Technology Options for Road and Air Transport.**

STOA, the European Parliament's Scientific Technology Options Assessment body, has published an inventory of 20 of the most promising transportation options, which are clustered in five technologies: hydrogen and fuel cells, battery electric vehicles, hybrid technology, biofuels and natural gas. The inventory provides a comparative overview of the pros and cons of each of these technologies.

[http://www.europarl.europa.eu/stoa/publications/studies/stoa179\\_en.pdf](http://www.europarl.europa.eu/stoa/publications/studies/stoa179_en.pdf)

### **MISCELLANEOUS**

#### **Horizon Enters Alliance with Wah Shing Toys.**

Horizon Fuel Cell Technologies and Wah Shing Toys Co., Ltd. have entered into a strategic alliance and exclusive manufacturing agreement for the design and mass-production of fuel cell-powered toys and reusable energy storage devices. Under the agreement, Wah Shing will scale up manufacturing of Horizon's existing line of tech-toy products, with the aim of developing new fuel cell-powered products for major international toy companies. Horizon's "H-racer" fuel cell-powered toy car was awarded a Time Magazine "Best Invention" in 2006, one of the "coolest new products on the planet" according to a recent issue of Business 2.0 magazine, and was the Consumer Silver Award Winner, of the 2007 International Design Excellence Awards.

[http://www.horizonfuelcell.com/file/Press\\_Release.pdf](http://www.horizonfuelcell.com/file/Press_Release.pdf)

#### **ORNL and Julich Sign Cooperative Agreement.**

Oak Ridge National Laboratory (ORNL) and Research Centre Julich in Germany have signed a cooperative activity agreement to share characterization tools and materials and fabrication techniques. The collaboration could ultimately lead to lower cost, higher performance fuel cells for transportation and portable power applications.

[http://www.ornl.gov/info/press\\_releases/get\\_press\\_release.cfm?ReleaseNumber=mr20070710-00](http://www.ornl.gov/info/press_releases/get_press_release.cfm?ReleaseNumber=mr20070710-00)

#### **Proton Motor Relocates to Puchheim.**

Proton Motor has moved its company headquarters to Puchheim, Germany, near Munich. The new site, which can accommodate around 100 staff, will house the company's administration, research, development, production and test departments, with further potential for expansion as required.

<http://www.proton-motor.de/>

### **CONFERENCES**

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

#### **Renewable on Parade.**

The First Annual Renewable on Parade: An International Conference on How Renewable Energy Options Sustain America will be held September 20-23, 2007, at the Riverside Casino & Golf Resort in Washington County, Iowa. For conference details, go to <http://www.renewableonparade.com/>.

#### **Brazil H2 Fuel Cell Expo.**

The Brazil H2 Fuel Cell Expo/Seminar 2007 will take place at Pontificia Universidade Católica, Paraná State (PUC-PR) in Curitiba, Brazil, on September 24-26, 2007. For information, please go to

<http://www.portalh2.com.br>.

#### **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 a free ticket to the exhibition, please go to

[http://www1.elsevier.com/homepage/saf/emails/grove/grove\\_freeticket\\_fc2000.html](http://www1.elsevier.com/homepage/saf/emails/grove/grove_freeticket_fc2000.html). For more information on the conference, check out <http://www.grofuelcell.com/>.

**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/>.

**WHEC 2008.**

The World Hydrogen Energy Conference will be held June 15-19, 2008, in Brisbane, Australia 15-19. For more information, please go to <http://www.whec2008.com>.

*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.*