

news from **FUEL CELLS 2000**

Fuel Cells 2000's Fuel Cell Technology Update – September 2011

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Free Marketing Opportunity!

Fuel Cells 2000 will be exhibiting at both the [GOVgreen](#) and [Ecobuild](#) conferences here in Washington, DC this December. If you'd like us to distribute your company's product and marketing materials, please send to 1100 H Street, NW, Suite 800, Washington, DC 20005. GOVgreen is geared towards all government agencies (including military) looking to become more efficient and environmentally-friendly. Ecobuild attracts architects, builders, developers and others interested in sustainable building, including energy efficiency and new technologies. From past experiences at these conferences, there is tremendous interest in fuel cells, so don't miss this opportunity to reach out to potential customers!

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TRANSPORTATION APPLICATIONS

Hamburg Receives Four Fuel Cell Buses, F-CELL Working at German Airport.

Hamburger Hochbahn AG has acquired four Mercedes-Benz Citaro FuelCELL Hybrid buses through the German "NaBuZ demo" project that promotes sustainable bus systems. Three more buses will be delivered next year. The project is part of Germany's Clean Energy Partnership (CEP) and receives funding through the federal transport ministry's National Innovation Program (NIP). NIP is coordinated by NOW GmbH. In other Mercedes news, a Mercedes-Benz B-Class F-CELL is now working as a "follow me" vehicle at the Stuttgart airport in Germany.

<http://media.daimler.com/dcmmedia/0-921-657282-1-1417287-1-0-0-0-0-0-11694-854946-0-0-0-0-0-0-0.html>

<http://media.daimler.com/dcmmedia/0-921-1258086-1-1413566-1-0-0-0-0-1-11700-0-0-1-0-0-0-0-0.html?TS=1314730105550>

Ballard and Simon Fraser University Receive \$4 Million for Fuel Cell Buses.

The Automotive Partnership Canada (APC), in conjunction with the Natural Sciences and Engineering Research Council of Canada (NSERC), are providing \$4.05 million to Simon Fraser University and Ballard Power Systems to develop the next generation of fuel cell buses. The project aims to increase overall stack durability and lifetime without negatively impacting the cost or performance of the buses. This award was part of a larger allocation of funding to several university-industry partnerships working on advanced transportation technologies.

<http://www.marketwire.com/press-release/government-of-canada-investing-in-next-generation-auto-r-d-1554779.htm>

UTC Power System Surpasses 10,000 Hours in Real-World Service.

UTC Power's latest generation PureMotion® System Model 120 fuel cell powerplant for hybrid-electric transit buses has surpassed 10,000 operating hours in real-world service with its original cell stacks and no cell replacements. The fuel cell system is aboard an Alameda-Contra Costa Transit District (AC Transit) bus operating in the Greater Oakland, California, area.

<http://www.utcpower.com/pressroom/pressreleases/utc-power-fuel-cell-system-sets-world-record-achieving-10000-hr-durability>

EnergyOr UAV Completes 10-Hour Endurance Flight.

EnergyOr Technologies Inc. demonstrated a long endurance flight of more than 10 hours with its fuel cell powered, operational unmanned aerial vehicle (UAV), the FAUCON H2. The FAUCON H2 uses EnergyOr's EO-310-XLE fuel cell designed specifically for UAV applications.

http://www.energyor.com/energyor/news.cfm#AUGUST_2011

Lockheed Develops UAS with Ultra Electronics Fuel Cell.

Lockheed Martin has developed a ruggedized version of its Stalker Unmanned Air System (UAS), called the Stalker eXtreme Endurance (XE) UAS. The Stalker XE system is powered by Ultra Electronics' hybrid system that uses a propane fuel cell with a small, conventional lithium polymer battery to handle power peaks. This long-endurance fuel cell technology was developed through an innovative Defense Advanced Research Projects Agency (DARPA) sponsored effort led by Lockheed Martin and Adaptive Materials Inc. (now a division of Ultra Electronics Holdings, plc). The complete Stalker XE system includes two aircraft, fuel cells, command and control ground station, support equipment, and small propane fuel storage tank.

http://www.lockheedmartin.com/news/press_releases/2011/110816ae_stalker-extreme.html

STATIONARY APPLICATIONS

Palace Hotel to Install Two ClearEdge Fuel Cells.

LINC Housing is installing two ClearEdge Power ClearEdge5 fuel cells at The Palace Hotel in Long Beach, California, a renovation project that will provide apartments for foster youth aging out of the system. Funding for the fuel cells was provided by the John S. and James L. Knight Foundation through the National Trust Loan Fund. The fuel cells will generate enough heat to meet the hot water demand of the entire building and in combination with photovoltaic solar panels, will provide almost all of the property's electric demand on-site.

<http://clearedgepower.com/news/press-releases>

FuelCell Energy Signs Service Agreements with PG&E.

FuelCell Energy, Inc. has signed two multi-year service agreements with Pacific Gas and Electric Company (PG&E) to operate and maintain two 1.4 megawatt Direct FuelCell® power plants previously purchased and located at two California universities. FuelCell Energy was contracted to install the plants and will maintain the power plants under the service agreements. Both plants are installed and have generated power with full operation expected within the next few weeks.

<http://fcel.client.shareholder.com/releasedetail.cfm?ReleaseID=596733>

CFCL's BlueGen Receives Accreditation and Certification.

Ceramic Fuel Cells Limited's (CFCL) BlueGen® microgeneration heat and power (mCHP) product has received final Microgeneration Certification Scheme (MCS) product and factory accreditation in the UK, enabling BlueGen customers to benefit from the UK government's feed in tariff financial incentive. BlueGen is the first fuel cell product to receive MCS certification and be eligible for the UK feed in tariff. CFCL's BlueGen was also certified by the Australian Gas Association (AGA) for installation as a gas appliance in Australia. The BlueGen is now certified as a "Type A" gas appliance, which allows BlueGen units to be installed by a licensed and trained plumber / gasfitter as for any other typical gas appliance in Australia. BlueGen has also been certified for both indoor and outdoor installations.

http://www.cfcl.com.au/Assets/Files/20110825_CFCL_BlueGen_receives_MCS_25Aug2011.pdf

http://www.cfcl.com.au/Assets/Files/20110802_BlueGen_acheives_AGA_certification_2-Aug-2011.pdf

PORTABLE/BACKUP POWER

MICRO FUEL CELLS

MILITARY APPLICATIONS

FUELS/REFORMERS/STORAGE

World's First Tri-Generation Fuel Cell and Hydrogen Energy Station Opens.

The world's first tri-generation fuel cell and hydrogen energy station that will provide transportation fuel to the public and electric power to an industrial facility, was opened at the Orange County Sanitation District's (OCSD) wastewater treatment plant in Fountain Valley, California. The FuelCell Energy Direct FuelCell® fuel cell is a combined heat, hydrogen, and power system that efficiently converts biogas generated from the wastewater treatment process into ultra-clean electricity for use by OCSD and renewable hydrogen for an on-site vehicle fueling station operated by Air Products. Project participants include FuelCell Energy, Air Products and the National Fuel Cell Research Center at the University of California Irvine with support from California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), U.S. Department of Energy (DOE) and Southern California Gas Company. The fuel cell is generating 250 kilowatts of ultra-clean power, enough to power about 200 average size homes and renewable hydrogen that can fuel approximately 25 vehicles per day.

http://apps1.eere.energy.gov/news/progress_alerts.cfm/pa_id=600

Proton OnSite to Install Electrolyzer in Hawaii.

Proton OnSite has been awarded a purchase order from HydraFLX Systems Ltd. to install a FuelGen® C30 proton exchange membrane electrolyzer to generate hydrogen at the Joint Base Pearl Harbor-Hickam (JBPHH) facility outside Honolulu, Hawaii. The station is being upgraded in cooperation with the Hawaii Center for Advanced Transportation Technologies (HCATT) and the Air Force Research Laboratory.

http://www.protononsite.com/common/pdf/PROTON_ONSITE_TO_INSTALL_HYDROGEN_GENERATOR_AT_JOINT_BASE_PEARL_HARBOR-HICKAM_IN_HAWAII.pdf

HyET Develops 800 Bar Compressor.

HyET, Hydrogen Efficiency Technologies BV has developed the world's first hydrogen compressor that reaches 800 Bar. The novel compressor has two unique features: the device contains no moving parts and it is capable of compressing hydrogen from atmospheric pressure to 800 Bar in one single stage.

http://www.hyet.nl/images/stories/110823hyet_reaches_800_bar.pdf

USC Develops Ammonia Borane Hydrogen Catalyst.

Researchers at the University of Southern California Stevens Institute for Innovation have developed a catalyst system that releases enough hydrogen from its storage in ammonia borane to make it usable as a fuel source. USC is in the process of patenting the system. The research was funded by the Hydrocarbon Research Foundation and the National Science Foundation.

http://uscnews.usc.edu/science_technology/usc_breakthrough_in_hydrogen_fuel_cells.html

H2scan Launches New Hydrogen Analyzers, Enters Supply Agreement.

H2scan has launched two new HY-OPTIMA™ hydrogen analyzer models designed for implementation in highly contaminated environments, the HY-OPTIMA 740 and 1740. H2scan also has entered into a five-year supply agreement with Weidmann Diagnostic Solutions, Inc., where Weidmann will sell H2scan's stand-alone hydrogen sensing system.

<http://www.marketwire.com/press-release/weidmann-announces-hydrogen-sensing-monitor-supply-agreement-with-h2scan-corporation-1545523.htm>

MATERIALS/COMPONENTS/TESTING

NexTech Reaches Milestone.

NexTech Materials, Ltd. has performed accelerated stability tests that predict a service life of over 40,000 hours at 750°C for low cost ferritic steel (AL 441 HP) interconnect components protected by its manganese-cobalt spinel (MCO) coatings. This achievement represents a critical milestone for intermediate temperature solid oxide fuel cells (SOFC). NexTech's coating product leverages its exclusive world-wide license of coating technology patented by Ceramic Fuel Cells Limited.

http://www.nextechmaterials.com/energy/index.php?option=com_content&view=article&id=41%3A08-aug-2011&catid=7%3Apress-release&Itemid=18

REPORTS/MARKET STUDIES

Light-Duty Fuel Cell Vehicles.

Pike Research has published "Pike Pulse Report: Light-Duty Fuel Cell Vehicles" which offers an assessment of strategy and execution for 10 leading automakers.

<http://www.pikeresearch.com/research/pike-pulse-light-duty-fuel-cell-vehicles>

Fuel Cells for Military Applications.

Pike Research has released "Fuel Cells for Military Applications: Soldier Wearable and Portable Power, Sensors and Surveillance, Stationary Power, Materials Handling, APUs, and UAVs: Market Analysis and Forecasts."

<http://www.pikeresearch.com/research/fuel-cells-for-military-applications>

REQUESTS FOR PROPOSALS

Check out the [Fuel Cell RFPs](#) blog for more opportunities.

Air Force RFI.

The Air Force Medical Evaluation Support Activity (AFMESA) issued a Request for Information (RFI) on man-portable alternative energy devices to power medical devices and communications equipment in a variety of military expeditionary operating environments.

<https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=3df0f7fc03b6dfe317223c5a9b2965f0>

UUV Rechargeable/Refuelable Energy System.

The Office of Naval Research seeks proposals for an "energy dense air-independent, rechargeable/refuelable energy system for the Large Displacement Unmanned Underwater Vehicle Innovative Naval Prototype (LD UUV INP)." Up to three awards will result from this Broad Agency Announcement (BAA), with approximately \$4.5 million for each initial Phase I award and a total of \$20 million expected to be available over the 5-year project span.

<https://www.fbo.gov/index?s=opportunity&mode=form&id=91c8c7260a68c8c5b4cc2cd42fe13600&tab=core&cvview=1>

University Transportation Center Solicitation.

The U.S. Department of Transportation (DOT) has issued the 2011 Grant Solicitation for its University Transportation Center Program, which includes Alternative Energy/Power Research as a topic of interest. DOT's Research and Innovative Technology Administration (RITA) will select ten Tier 1 University Transportation Centers (UTCs), two Tier 1 Transit-Focused UTCs, and ten Regional UTCs. RITA plans to award approximately \$3.5 million per Center.

http://www.trb.org/Main/Blurbs/University_Transportation_Centers_Program_2011_Gra_165722.aspx?utm_medium=email&utm_source=Transportation%20Research%20Board&utm_campaign=TRB+E-Newsletter+-+08-02-2011&utm_content=Web&utm_term=

MISCELLANEOUS

DOE Awards \$7 Million for Cost Analyses.

DOE announced nearly \$7 million over five years for independent cost analyses that will support research and development efforts for fuel cells and hydrogen storage systems. The four projects – in California, Ohio, and Virginia – will generate rigorous cost estimates for manufacturing equipment, labor, energy, raw materials, and various components that will help identify ways to drive down production costs of transportation fuel cell systems, stationary fuel cell systems, and hydrogen storage systems. The awards went to: Directed Technologies, Inc. (Arlington, VA) – up to \$3 million for two projects, Lawrence Berkeley National Laboratory (Berkeley, CA) – up to \$1.9 million, and Battelle Memorial Institute (Columbus, OH) – up to \$2 million.

http://apps1.eere.energy.gov/news/progress_alerts.cfm/pa_id=588

ClearEdge Power Raises \$73.5 Million.

ClearEdge Power has raised \$73.5 million in Series E financing through the sale of new shares and the conversion of previously issued promissory notes. New investor Artis Capital Management joined Güssing Renewable Energy; Southern California Gas Company, a regulated subsidiary of Sempra Energy; and existing investor Kohlberg Ventures. The financing will be used to further grow customer adoption in key commercial markets, expand internationally and develop and commercialize new products.

<http://clearedgepower.com/news/press-releases>

CONFERENCES

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

Fuel Cell Workshop.

A 1-Day Workshop, “Energy Efficiency: When Fuel Cells are Best in Class” will be held Wednesday, September 21, 2011, in Brussels, Belgium. To find out more, please go to

http://fuelcelleurope.eurokeys.eu/index.php?option=com_wrapper&view=wrapper&Itemid=53.

f-cell 2011.

The f-cell 2011 conference and trade fair will take place September 26-27, 2011, in Stuttgart, Germany. The conference focus is “Mobile applications – fuel cells and batteries moving the.” For conference details, please go to <http://www.f-cell.de/englisch/Home/>.

Energy from Waste Workshop.

“Energy from Waste with Fuel Cells” will be held Wednesday, October 5, 2011, in Brussels, Belgium. For more details, please go to

http://fuelcelleurope.eurokeys.eu/index.php?option=com_wrapper&view=wrapper&Itemid=53.

CHBC General Meeting.

The California Hydrogen Business Council general meeting “New Technologies and Hydrogen from Renewables” will be held October 13, 2011, at the AC Transit Facility in Oakland, California. To register, please go to <http://californiahydrogen.org/civicrm/event/info?reset=1&id=53>.

Fuel Cell Seminar & Exposition 2011.

The Fuel Cell Seminar & Exposition 2011 will be held October 31 - November 3, 2011, at the Walt Disney World Swan and Dolphin Resort in Orlando, Florida. For information on exhibiting or registration, please go to <http://www.fuelcellseminar.com/>.

Batteries and Fuel cells - Key Technologies for the Mobility of the Future.

The Batteries and Fuel cells - Key Technologies for the Mobility of the Future conference (conference program will be held in German) will be held November 22, 2011, in Essen, Haus der Technik, Germany. For details (in German), please go to <http://www.hdt-essen.de/htd/veranstaltungen/W-H010-11-616-1.html>.

GOVgreen.

The Center for Environmental Innovation and Leadership’s GOVgreen conference will be held November 30 – December 1, 2011, at the Walter E. Washington Convention Center in Washington, DC. For information, please go to <http://www.govgreen.org/>.

Ecobuild.

Ecobuild: High Technology for High Performance Building will be held December 5-9, 2011, at the Walter E. Washington Convention Center in Washington, DC. For information, please go to

<http://www.aecocobuild.com/conference-exhibits>.

Piero Lunghi Conference and Exhibition.

The 4th Edition of the European Fuel Cell Technology & Applications Piero Lunghi Conference and Exhibition takes place at the Fontana di Trevi Conference Center in Rome, Italy, December 14-16, 2011. For conference details, please visit <http://www.europeanfuelcell.it/>.

FC Expo 2012.

The 8th International Hydrogen and Fuel Cell Expo (FC Expo 2012) will take place February 29 – March 2, 2012, at Tokyo Big Sight in Tokyo, Japan. For more information, please visit <http://www.fcexpo.jp/en>. If you represent a U.S. company and are interested in participating in the U.S. Pavilion, please email Jennifer Gangi at jennifer@fuelcells.org.

WHEC 2012.

The World Hydrogen Energy Conference 2012 will be held June 3-7, 2012, at the Toronto Sheraton Center in Toronto, Ontario, Canada. For details, please go to <http://www.whec2012.com>.

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