Fuel Cell Technology Update – November 1, 2001

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TRANSPORTATION

Ballard Introduces Mark 902, Concludes Bus Demonstration with XCELLSIS.
Ballard Power Systems has introduced the Mark 902, its most advanced fuel cell platform to date. The Mark 902 establishes a new standard of performance by optimizing lower cost, design for volume manufacture, reliability, power density and compatibility with customer system requirements. In other news, Ballard and XCELLSIS Fuel Cell Engines announced that the ZEbus (Zero Emission Bus) successfully completed its fuel cell demonstration program with SunLine Transit Agency in Thousand Palms, California. During the thirteen month demonstration, the ZEbus traveled more than 24,000 km (14,900 miles) with a total run time of 865 hours.

http://www.ballard.com/viewpressrelease.asp?sPrID=247

Ballard Acquires XCELLSIS, Ecostar from DaimlerChrysler and Ford. Ballard Power Systems, DaimlerChrysler and Ford Motor Company have signed an agreement in which Ballard will acquire the interests of DaimlerChrysler and Ford in XCELLSIS GmbH and Ecostar Electric Drive Systems, LLC. This transaction increases DaimlerChrysler and Ford’s commitment to, and reliance on, Ballard as their exclusive fuel cell engine supplier.

http://www.ballard.com/viewpressrelease.asp?sPrID=242

GM, Suzuki to Work on Fuel Cell Cars, GM and Chevron Collaborate. General Motors Corp. (GM) and Suzuki Motors Corp. are expanding their alliance to cover the development of fuel cell vehicles. The collaboration will focus on developing small-car applications for fuel cell technology. GM and ChevronTexaco Corp. have formed a pact to speed the pace of introducing gasoline fuel cells in cars, a technology that cuts emissions of greenhouse gas carbon dioxide in half.

http://dailynews.yahoo.com/h/nm/20011017/bs/gm_suzuki_dc_2.html
Ford P2000 Breaks Endurance Record. A group of Ford Motor Company engineers, scientists and marketing specialists recently set a national endurance record with Ford’s P2000 fuel cell vehicle. Ford broke the U.S. record for fuel cell endurance during a 24-hour test. The P2000 maintained an average on track speed of 65 mph and an average overall speed of 57.95 mph. Over the course of the 24-hour test, the vehicle traveled 1390.75 miles – further than any other fuel cell vehicle has traveled in a single day.  
http://media.ford.com/article_display.cfm?article_id=9997

Metallic Power Delivers Fuel Cell Prototypes to SCAQMD. Metallic Power has provided a demonstration fuel cell-powered riding lawnmower and a 2 kW portable power system for turf and garden care, to the South Coast Air Quality Management District (SCAQMD). The zinc-air fuel cell was incorporated into a prototype electric motor provided by Toro Company. 
http://ens.lycos.com/e-wire/Oct01/22Oct0104.html

Palcan Signs MOUs with Chuang Yuan, Forever for FC Bicycles. Palcan Fuel Cell Company, Ltd. has signed a memorandum of understanding (MOU) with the Chuang Yuan Group Company, Ltd. for the joint development of a fuel cell-powered bicycle. Palcan also signed an MOU with Shanghai Forever Company, Ltd. for the manufacturing and integration of Palcan’s PalPac portable fuel cell system into Forever’s electric bicycles and motor scooters. 

Proton Receives Navy Contract. The Naval Research Laboratory has awarded a $6.2 million contract to Proton Energy Systems as part of a DARPA “Water Rocket” program that will apply Proton’s PEM fuel cell technology to advanced space propulsion and energy systems. Proton’s team on this contract includes General Dynamics, ATK Thiokol, Schafer Corporation, and Myers Manufacturing Company.  
http://www.energyinfosource.com/dg/news.cfm?id=13565

U.S. Army Awards $2.9 Million to Pittsburgh Electric Engine. The U.S. Army has awarded a $2.9 million contract to Pittsburgh Electric Engine, Inc. to develop a fuel cell engine. Development of the engine, which will combine traditional turbine and fuel cell technology, should begin in December.

STATIONARY POWER

GM Demonstrates Backup Power Unit, Will Work With Hydrogenics. General Motors Corp. unveiled a demonstration stationary power unit designed to provide backup power to cellular towers during power outages. The backup generator, known as the HyUPS system, is about the size of a refrigerator and can generate up to 25 kW for up to two hours. GM has teamed up with Hydrogenics Corporation for fuel cell product development, engineering, prototyping, testing, branding and marketing strategies. If the test of the backup unit is successful, 35 demonstration sites in California have been identified and Hydrogenics is working with Nextel Communications for investment in 2002. 
http://biz.yahoo.com/prnews/011017/law032_1.html

Chevron Data Center to be Powered by Fuel Cell. Chevron Corporation announced that a 200-kW fuel cell will soon be used to power the company’s data center in San Ramon, California. The unit will cost $850,000 and will be fueled by natural gas. 
FuelCell Energy to Supply Coast Guard with Fuel Cell Power Plant. FuelCell Energy and PPL Spectrum have been selected to supply and install a 250-kilowatt Direct FuelCell power plant for the U.S. Coast Guard Air Station Cape Cod in Bourne, Massachusetts. Project sponsors include the National Energy Technology Laboratory, the Massachusetts Renewable Energy Trust, and Keyspan, Inc. http://www.fuelcellenergy.com/site/investor/press/releases/2001/10_18_01.html


Ballard Joins Forces with EBARA and Osaka Gas. Ballard Power Systems will join forces with EBARA Corp. and Osaka Gas to develop a hydrogen fuel cell generator for the Japanese residential market. The power generator, to be launched in 2004, will likely sit outside the house and will use natural gas to generate about 1 kW a day. http://www.ballard.com/viewpressrelease.asp?sPrID=244

Fuel Cell Developers Collaborate in Germany. EWE, MVV, Ruhrgas AG and VNG AG are working together to launch fuel cells in the residential and industrial market by 2005. The companies, two utilities and two gas distributors and importers, will combine their resources for research and development and the implementation of fuel cell technology. http://www.earthvision.net/ColdFusion/News_Page1.cfm?NewsID=18301

CERL Awards Contract for Fuel Cell Systems to Plug Power. Plug Power received a $1.2 million award from the U.S. Army Corps of Engineers, Construction Engineering Research Laboratory (CERL) to supply ten fuel cell systems to the Watervliet Arsenal in New York State. Installation of the systems is scheduled to be completed in December. http://www.dodfuelcell.com/pr_101001.html


Global Thermoelectric Announces MOU with Citizens Gas. Global Thermoelectric, Inc. and Citizens Gas & Coke Utility of Indianapolis, Indiana, have signed a Memorandum of Understanding (MOU) regarding a project to modify Global’s residential solid oxide fuel cell (SOFC) products. http://biz.yahoo.com/cnw/011010/global_mou_indianapol_1.html

PORTABLE POWER

Tel Aviv University Develops Portable Fuel Cell. RAMOT, the Authority for Applied Research and Industrial Development at Tel Aviv University (TAU) is looking for investors for the establishment of a new start-up company called GreenFuel (temporary name), which will develop and manufacture fuel cells. The new company will focus on the development of fuel cells for portable devices.
GES Demonstrates 150-W Direct Methanol Fuel Cell System. Research funded by the U.S. Army Research Laboratory has resulted in the successful fabrication and testing of a complete “liquid feed direct methanol fuel cell system” by Giner Electrochemical Systems, LLC. (GES). The 150-watt system – which can store enough methanol for 5000 watt-hours of operation – will be used by the U.S. Army as a portable battery charger.  www.ginerinc.com

Manhattan Sciences and Mihama Announce Fuel Cell Cooperation, Demonstrate Power Holster Concept in Japan. Manhattan Sciences is engaged in a cooperative effort with Japan’s Mihama Corporation to establish a Japanese industrial team to complete development and prepare its MicroFuel Cell™ technology for commercial production. As part of this effort, Mihama presented the new PowerHolster™ portable charger fueled from sealed ampoules. The PowerHolster™ achieves 1 watt of power and could provide consumers with unprecedented cell phone talk time as well as the extended use of other portable electronics.  http://www.mhtx.com/media_center/pressrelease38.htm


Defence R&D Canada To Study EVI DMFC. Defence R&D Canada is planning to begin a study of Energy Visions Inc.’s (EVI) direct methanol fuel cell (DMFC) technology for evaluation in several military applications. One potential area of interest for initial use is a small portable power unit that can charge the soldier’s battery packs.  http://energyvi.com/view.asp?PR=49

FUELS/REFORMERS/STORAGE

BP to Build Hydrogen Fueling Stations in Singapore. BP and the Economic Development Board (EDB) have signed a letter of intent to build hydrogen refueling stations for future Singapore motorists driving hydrogen-powered vehicles. BP plans to install the hydrogen refueling facilities, which cost between US$500,000 to US$1.5 million each, in 2003.  http://www.edie.net/news/Archive/4838.cfm

H2fuel Working on New Membrane Technology to Produce Hydrogen. H2fuel, LLC, an affiliate of Avista Labs, is developing new technology that would greatly reduce the cost of producing hydrogen for use in fuel cells. The new membrane-based technology works by eliminating carbon dioxide and carbon monoxide from readily available fuels such as natural gas and propane, thus allowing the production of nearly pure hydrogen.  http://biz.yahoo.com/prnews/011017/sfw036_1.html

FUEL CELL COMPONENTS

Vairex to Provide Air Delivery Systems for FCV. Guardian Technologies International, Inc., announced that Vairex Corporation has signed a contract to provide engineering and demonstration air delivery systems for a power plant for a fuel cell vehicle being developed by a leading auto manufacturer.
TMI Improves Clad Metal Systems. Technical Materials, Inc. (TMI) has achieved significant progress in developing clad metal systems for a variety of fuel cell applications. TMI has found clad metals offer excellent adhesion characteristics and outstanding ductility, making it better than other coating techniques.

REPORTS/MARKET STUDIES


MISCELLANEOUS

Heliocentris Offering Two Fuel Cell Car Models. Heliocentris is offering two model cars just in time for the holidays – a direct methanol fuel cell model car and a hydrogen fuel cell model car educational kit. The hydrogen fuel cell model car is aimed at middle school science students and tech-ed science students. For more information, go to www.fuelcells.org/career/helios.pdf.

Thames and Kosmos Introduce New Science Kit. Thames and Kosmos recently introduced a new science kit that offers teachers and students the opportunity to build a model car fueled by hydrogen. The kit includes a reversible fuel cell that powers the car using sunlight and water. http://www.thamesandkosmos.com


Texas Fuel Cell Trade Association Officially Formed. Fuel Cells Texas, a new trade association for promoting fuel cell commercialization in Texas, was officially formed in September 2001 and has announced its first quarterly meeting will be held on November 12. Meetings will be held in
conjunction with the hearings of the Fuel Cell Advisory Committee, which is soon to be appointed by the Texas State Energy Conservation Office. For more information on Fuel Cells Texas, contact Dana Showalter at 512-480-2218.

REQUESTS FOR PROPOSALS

**NYSERDA Alternative Fuel Power Generation and Energy Storage Projects.** The New York State Energy Research and Development Authority (NYSERDA) invites proposals to demonstrate alternative fuels for power generation and energy storage for commercial applications. Maximum NYSERDA funding available for alternative fuel technologies is $500,000 per project. Maximum NYSERDA funding available for energy storage technologies is $1 million per project. Feasibility studies for both topics will also be accepted, with funding limited to $100,000 per project. Deadline for proposals is November 5, 2001. [http://www.nyserda.org/616pon.html](http://www.nyserda.org/616pon.html)

**Bioelectrocatalytic Fuel Cells.** The Naval Surface Warfare Center is soliciting white papers for basic research, applied research, and advanced research projects in bioelectrocatalytic fuel cell power technologies and their applications in electric power and/or propulsion systems. It is anticipated that awards from this BAA will provide for a feasibility study with an option for a prototype. Deadline for proposals is November 16, 2001. [http://www.nswc.navy.mil/supply/solicita/02q3004/3004syn.htm](http://www.nswc.navy.mil/supply/solicita/02q3004/3004syn.htm)


**Air Force Seeks New Power Generation Technologies.** The Air Force Research Laboratory is interested in receiving proposals for advanced technologies that facilitate the conduct of contingency base operations, and operations other than war. Topics include developing new energy and utility systems technologies that increase mobility, reliability and efficiency, with specific interest in power generation, power conditioning and distribution systems. [http://www.eps.gov/spg/USAF/AETC/TynAFBCS/Reference-Number-BAATYN02001/SynopsisR.html](http://www.eps.gov/spg/USAF/AETC/TynAFBCS/Reference-Number-BAATYN02001/SynopsisR.html)

CONFERENCES/CALL FOR PAPERS


**Combi 2002.** The 4th Annual International Symposium on Combinatorial Approaches for New Materials Discovery will be January 23-25, 2002, at the Four Points Sheraton Hotel in San Diego, California. For more information, check out www.knowledgefoundation.com.


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*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.*