

news from **FUEL CELLS 2000**

Fuel Cell Technology Update – March 1, 2002

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

Volkswagen Successfully Tests Bora HY.POWER.

A collaborative effort between Volkswagen, the Paul Scherrer Institute, ETH Zuerich and Dynetek have conducted a successful long-range test drive of its Bora HY.POWER fuel cell car, which runs on hydrogen stored on-board the vehicle, and utilizes ultra capacitors for additional power. The car crossed the 2,005-metre Simplon Pass between Switzerland and Italy in the middle of winter.

http://www.volkswagen-ir.de/download/Q1_02/20020103PM_Brennstoffzelle_eng.pdf

UTC and Nissan Sign Development Deal.

UTC Fuel Cells has signed development agreements with Nissan Motor Co. Ltd. to develop fuel cell components for vehicles. Renault, Nissan's alliance partner, is also participating in the development projects.

<http://www.utcfuelcells.com/news/archive/022002.shtml>

STATIONARY POWER

Apollo Energy Systems Receives \$223 Million Order.

Apollo Energy Systems has received a \$223 Million order for its 10 kW alkaline fuel cell power plants from Hydrolec, Inc. The order calls for a shipment of 2,000 power plants per month to Hydrolec, to be used as back up power for hydraulic and electric elevator systems in the U.S. and 44 foreign countries.

<http://www.apolloenergysystems.com>

FCT to Supply Fuel Cells for Swedish Project, Announces Distribution Deal with BSE.

Fuel Cell Technologies Ltd. (FCT) has been awarded a contract to supply and install three solid oxide fuel cell (SOFC) power systems in a progressive residential development project in Stockholm, Sweden. FCT's installation will be part of a new residential district in Stockholm where the plan is to have up to 8,000 housing units, largely powered by renewable energies, including FCT's power systems fueled by biogas. FCT also has signed a letter of understanding with Border States Electric Supply (BSE) to promote and

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distribute FCT's five-kilowatt (kW) SOFCs to customers in 15 U.S. states. FCT said its five-kW SOFC will be able to provide a mid-sized home with electricity, hot water and heat. Under the agreement, BSE will market, sell and distribute only FCT's product line of one- to 50-kW SOFCs.

http://www.fct.ca/31_01_02.html

http://www.fct.ca/20_02_02.html

UTC to Install Fuel Cell in Brazil.

Petrobras, Brazil's oil, gas and energy company, will install a UTC PC25TM fuel cell power plant at its research and development center (CENPES) in Rio de Janeiro. The unit, which produces 200 kilowatts of electricity and 900,000 Btus per hour of useful heat, will provide assured power for the CENPES facility.

<http://www.utcfuelcells.com/news/archive/021102.shtml>

H Power Introduces EPAC 500.

H Power Corp. introduced a pre-commercial version of its new EPACTM-500 fuel cell-based power source at the Third Annual Touchstone Energy New and Emerging Technologies Conference and Expo being held in Tucson, Arizona. The EPAC-500 is a self-contained, rack-mountable 500-Watt fuel cell power source, designed for outdoor or indoor use for a wide range of applications, including telecommunications.

<http://www.hpower.com/cgi-bin/pr.cgi?idPressRelease=55>

Proton Signs Joint Development Agreement With Sumitomo.

Proton Energy Systems has signed a Joint Development Agreement with Sumitomo Corporation to develop, sell and service PEM-based regenerative fuel cell and hydrogen generation systems, which include Proton's HOGEN®, UNIGEN®, and FuelGenTM products, for the Japanese market.

http://biz.yahoo.com/prnews/020225/cgm004_1.html

PORTABLE POWER

State of Pennsylvania Purchases DCH Remote Power Fuel Cells.

The Pennsylvania Department of Environmental Protection (DEP) has purchased two 30-watt DCH EnableTM remote power systems to provide electricity to air quality sampling equipment, a data logger, and wireless communications equipment at two evaluation sites in the state. The systems will be delivered this month with payment upon receipt.

http://www.dcht.com/press_releases/press_release.asp?release=231&caller=news

Toshiba Demonstrates PDA Running on Fuel Cell.

Toshiba Corporation has demonstrated a personal digital assistant (PDA) running on a direct methanol fuel cell. The fuel cell has an average power output of 3-5 watts.

<http://www.hydrogen.org/News/gazette.html#Toshiba%20presents%20fuel%20cell%20running%20PDA%20feb%202002>

SFC Begins Fuel Cell Production.

Smart Fuel Cell GmbH (SFC) began production of a miniaturized methanol fuel cell that holds about 125ml of methanol and can power a notebook computer for more than eight hours. SFC expects the fuel cell to eventually cost between \$3 and \$5 per piece.

http://www.powerpulse.net/cgi-bin/displaystory_new.pl?id=5290

Neah Power Systems Receives Funding.

Neah Power Systems has received more than \$5 million from Frazier Technology Ventures and Alta Partners in its second round of funding last week. The company said it is working to develop a battery-sized direct methanol fuel cell in hopes of replacing lithium-ion batteries in portable electronic devices. The company plans to begin marketing its first fuel cell products by 2004.

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

New DMFC Company Formed.

Direct Methanol Fuel Cell Corporation (DMFCC) has been formed to commercialize the direct methanol fuel cell technology developed at the NASA/Caltech Jet Propulsion Laboratory (JPL) and the University of Southern California (USC). DMFCC, Caltech and USC have signed a letter of intent for DMFCC to acquire rights to 22 issued and over 40 pending U.S. and foreign patents. These include the original and fundamental patent for using methanol dissolved in water as the fuel.

http://www.e-newsservices.com/en/document.html?document_id=64279

FUELS/REFORMERS/STORAGE

Japan's First Two Hydrogen Filling Stations Are Completed.

Japan now has two hydrogen filling stations for vehicle fueling. The Osaka station utilizes a natural gas reformer to produce hydrogen, and the Shikoku Research Institute station in Takamatsu uses an electrolyzer.

<http://www.dwv-info.de/wss/wse021.htm#Japan>

Synergy Produces Soot-Free Feed for Fuel Cells.

Synergy Technologies Corp. has successfully reformed each of the five major fossil fuels (natural gas, propane, gasoline, diesel and toluene) into the free hydrogen and other feeds commonly utilized as fuel for most types of fuel cells. Most significantly, the company obtained these results while achieving two industry milestones - eliminating the production of soot traditionally associated with heavy fossil fuels reforming, and reducing the power consumption of the reformer system to less than 5 percent.

http://www.synergytechnologies.com/docs/oilsfuelcell_2002_02_15.htm

FUEL CELL COMPONENTS

EVI Announces Fuel Cell Breakthrough.

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Energy Visions, Inc. (EVI) announced a breakthrough in its direct methanol fuel cell (DMFC) development program. As a result of experiments with a new electrode design, EVI said it was able to create a fuel cell with increased power and efficiency and plans to embed this new electrode design in the prototype stack expected to demonstrate in March 2002 for the military.

<http://energyvi.com/view.asp?PR=56>

EC Selects Hydrogenics Test Systems for Lab.

The European Commission (EC), through the Institute for Energy of the Joint Research Center, has selected Hydrogenics' FCATS test systems for a new fuel cell (FC) laboratory in Petten, The Netherlands. Hydrogenics' FC test equipment will be used to support institutional FC research, as well as the institute's activities related to the EC's forthcoming Network on Standardization and Testing of Fuel Cell Systems.

DuPont Canada to Develop Components.

DuPont Canada Inc. will begin developing conductive flowfield plates for the fuel cell industry and plans to expand its research center with a \$19-million investment from the federal technology partnerships fund. Dupont hopes to deliver the first commercial prototype plates to the industrial marketplace later this year.

<http://www.nationalpost.com/financialpost/cadbusiness/story.html?f=/stories/20020223/144434.html>

JMC and APCI to Develop Storage Systems.

Japan Metals and Chemicals Company, Ltd. (JMC) and Air Products and Chemicals, Inc. (APCI) have signed an agreement to pursue a joint development program pertaining to hydrogen storage systems that utilize metal hydride alloys for fuel cell markets.

<http://www.airproducts.com/corp/rel/02029.asp>

MISCELLANEOUS

Fuel Cells 2000 Introduces New, Improved Fuel Cell Match Maker.

Fuel Cells 2000 has updated and improved its Fuel Cell Match Maker, a free, online forum that helps businesses and organizations reach out to fuel cell suppliers and other collaborators by posting their needs in a globally accessible space. Our goal is to be a "match maker" among those with technology and ideas, those with an interest in demonstrations, pilot projects and commercial applications, and those with financial resources. Register at <http://www.fuelcells.org/cgi-bin/dcforum/dcboard.cgi>.

Superior Propane Signs MOU With Global Thermoelectric and Enbridge.

Superior Propane has signed a Memorandum of Understanding (MOU) to enter the alliance formed by Global Thermoelectric, Inc. and Enbridge, Inc. to distribute Global's solid oxide fuel cell (SOFC) products in Canada. Under the MOU, Superior and Enbridge are expected to develop a sub-license agreement allowing Superior to distribute propane-compatible SOFC products developed by Global.

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<http://micro.newswire.ca/releases/February2002/19/c3448.html/1173-0>

HARC and LACTEC Collaborate on Brazilian Fuel Cell Projects.

The Houston Advanced Research Center (HARC) and LACTEC (Instituto de Tecnologia para o Desenvolvimento) have signed a cooperative agreement to develop projects in energy and the environment, particularly those promoting fuel cells for power generation and energy storage in Brazil.

<http://www.energyinfosource.com/dg/news.cfm?id=14891>

Astris Considering Several Business Ventures.

Astris Energi, Inc. is in negotiation with one U.S. company and one British company for either a joint venture or a major purchase of Astris' alkaline fuel cells. Astris said it is also in discussions with five other potential joint venture partners or fuel cell customers in Scotland, Norway, Italy, New Zealand and India.

<http://www.energyinfosource.com/dg/news.cfm?id=14972>

REQUESTS FOR PROPOSALS

Exhibits/Demonstrations Needed for Arkansas State-Sponsored Seminar.

The State of Arkansas is scheduling renewable energy seminars for electrical engineers, inspectors, architects and others. The organizers of the seminars are looking for fuel cell companies that would be willing to demonstrate systems. The first seminar is set for April 6, in Little Rock. Interested companies can contact Patrick Bernet, 501-225-4081, or psbernet@cs.com.

CERL BAA.

The US Army Corps of Engineers Engineer Research and Development Center, Construction Engineering Research Laboratory (CERL) has issued a Broad Agency Announcement soliciting proposals for PEM Fuel Cell Demonstration of Domestically Produced Residential PEM Fuel Cells in Military Facilities. Only domestically-produced residential PEM fuel cells between the sizes of 1 kW and 20 kW will be considered. Pre-proposals must be submitted by 29 March 2002 to be considered for the approximately \$3 million funding anticipated to be available for FY2002.

<http://www.mvk.usace.army.mil/contract/docs/FY02FuelCellBAA.pdf>

EPA Landfill Methane Outreach Program.

EPA's Landfill Methane Outreach Program (LMOP) has issued a solicitation for pre-proposal applications that build upon LMOP's efforts to reduce emissions of greenhouse gases through the development of landfill gas use projects. LMOP anticipates making one or more awards, ranging in value from approximately \$15,000 to \$75,000.

<http://www.epa.gov/lmop/pdf/grantsolicit02.pdf>

AQMD Program Opportunity.

The South Coast Air Quality Management District has issued a Program Opportunity

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Notice for Technology Advancement, which covers stationary fuel cells, fuel cell vehicles, off-road alternative fuel vehicles, and other advanced technology topics. Funding for projects will range from \$100,000 to \$1,000,000.

http://www.aqmd.gov/rfp/pon2002_01.html

CONFERENCES/CALL FOR PAPERS

World Fuels Conference.

The Hart World Fuels Conference will be March 19-21, 2002, at the Hyatt Regency on the Riverwalk in San Antonio, Texas. www.chemweek.com

2nd Annual Fuel Cell Investor.

Strategic Research Institute is sponsoring the 2nd Annual Fuel Cell Investor Conference, March 26-27, 2002, at the Roosevelt Hotel in New York, New York. For more information, please go to

http://www.srinstitute.com/part_iter_site_page.cfm?iteration_id=337

National AFV Day Odyssey.

The National AFV Day Odyssey, "Showcasing Cleaner Choices in Transportation," will be April 11, 2002, at multiple locations. Go to

<http://www.nationalafvodyssey.org/> to find the event nearest you.

NETL Conference on Hybrid Power Systems.

The National Energy Technology Laboratory is sponsoring the Second International Conference and Workshop on Hybrid Power Systems on April 16-17, 2002, at the Adam's Mark Charlotte's Hotel in Charlotte, North Carolina. For details, check out www.netl.doe.gov.

Small Fuel Cells.

"Small Fuel Cells for Portable Power Applications" will be held April 21-23, 2002, at the Wyndham Washington Hotel in Washington D.C. For more information, go to

<http://www.knowledgefoundation.com/events/10291257.htm>.

CEVC 2002.

The Canadian Electric Vehicle Conference will be May 9-11, 2002, in Québec City, Québec, Canada. Check out <http://www.evac.ca/CEVC2002web/CEVC2002eng.htm> for information.

Clean Cities Expo.

The 8th National Clean Cities Conference and Expo: "Alternative Fuels: Kick it Up a Notch!" will be May 12-15, 2002, at the Myriad Convention Center in Oklahoma City, Oklahoma. For more information, go to www.cities.doe.gov/conference.shtml.

Congressional Fuel Cell Expo.

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The U.S. Fuel Cell Council is hosting another Congressional Fuel Cell Expo on May 20, 2002, at the Cannon Caucus Room on Capitol Hill in Washington, D.C. Check www.usfcc.com for updates.

The Business of Fuel Cells for Automotive Applications.

The Business of Fuel Cells for Automotive Applications will be June 3-4, 2002, at The Hyatt Regency Dearborn Hotel, in Dearborn, Michigan.
<http://www.eyeforfuelcells.com/events/detroit2002/>

Future Car Congress.

The U.S. Department of Energy and the U.S. Council for Automotive Research are sponsoring the 2002 Future Car Congress, June 3-5, 2002, at the Hyatt Regency Crystal City, in Arlington, Virginia. For more information, visit
<http://www.futurecarcongress.org/>.

FUEL CELL 2002.

Fuel Cell 2002 is holding 2 parallel conferences, THE FUEL CELL WORLD and the 5th EUROPEAN SOFC FORUM, on July 1-5, 2002, at the Kultur- und Kongresszentrum Luzern in Lucerne, Switzerland. For more information, go to
<http://www.efcf.com/conferences/index.shtml>.

USAEE/IAEE Conference.

The 22nd Annual North American Conference of the USAEE/IAEE: "Energy Markets in Turmoil: Making Sense of it All" will be October 6-8, 2002, at the Sheraton Wall Centre Hotel in Vancouver, British Columbia, Canada. For more information, go to
<http://www.usaee.org/energy/>.

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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.

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