

## Cellex completes forklift field trials

**V**ancouver-based Cellex Power Products has successfully completed its third set of field trial demonstrations at customer locations across the US and Canada. These field trials – conducted during the third quarter of 2003 – represent months of cumulative runtime at selected customers' operations, providing enhanced fuel cell powered forklift performance, including indoor refueling and compliance with all safety codes and regulations.

Cellex's power units are designed to replace industrial lead-acid battery and charger systems in forklifts, which typically last only 4–8 h before the depleted battery needs to be removed and replaced with a freshly charged battery. The use of hydrogen fuel cells addresses this customer problem by running longer, and offering fast refueling.

'Our field trials program has been a tremendous success, as we have validated that industrial lift trucks will be the early adaptors of fuel cells due to a strong customer value proposition,' comments Chris Reid, president and CEO of Cellex. 'We have been focused on lift trucks since our inception in 1998, and the results of the most recent field trials reinforce this.'

Toronto-based Hydrogenics is leading a Canadian consortium to develop, demonstrate and pre-commercialize fuel cell powered forklifts, while Proton Motor in Germany recently unveiled a fuel cell forklift developed in partnership with Linde and Still GmbH [*FCB*, December]. General Hydrogen in Vancouver is also developing systems to replace forklift batteries with its hydrogen fuel cell Hydricity™ Packs.

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## Neah Power, Montecito to pursue military opportunities

**W**ashington state-based micro fuel cell developer Neah Power Systems is partnering with The Montecito Group in California, a consultancy specializing in new military programs and technologies, to pursue relevant research and product development opportunities within the US Department of Defense and its key suppliers.

Micro fuel cells offer the potential to continuously power portable communications and computing gear, increasing the effectiveness and likelihood of mission success. Highly mobile and electronically connected 'network-centric' forces are the future of defense and combat, according to Peter Schwartz, a director at Neah Power, adding that new power technologies and approaches are required to build this capability.

Neah Power is a micro fuel cell developer using an innovative silicon-based design to provide longer-lasting, efficient and safe power solutions for portable electronic devices, including notebook PCs and other power-hungry computer, entertainment and communications products. Investors include Alta Partners, Frazier Technology Ventures and Intel Capital.

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## Greenlight unveils latest test equipment platform

**G**reenlight Power Technologies – the wholly-owned subsidiary of Hydrogenics in Toronto – presented the first product in its next generation of fuel cell automated test systems (FCATS) at the Fuel Cell Seminar in Miami Beach, Florida. The FCATS™ G500 PEM test station is the result of an intensive period of product integration, bringing together the best attributes from Greenlight's and Hydrogenics' previous testing systems.

The primary objectives for the new product were increased reliability, superior performance and improved manufacturability, which have been achieved by sourcing and selecting the most reliable components on the market, and by reducing the number of parts through process flow simplification. The internal layout of the G500 has also been designed to give easier access for maintenance, and the unit has a reduced footprint.

The FCATS G500 is the first Greenlight product to incorporate the new proprietary HyWARE II™ software, which combines the best attributes of Hydrogenics' and Greenlight's previous software platforms. Enhanced with proprietary HyAL automation language and load-following capabilities, the software can comprehensively manage the full range of test system parameters, including testing and control, rapid data acquisition, diagnostics and safety subsystems.

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## In Brief

### US fuel cell industry jobs rise by 19%

Fuel cell related jobs in the US increased by 19% in 2002, according to the first member survey conducted by PricewaterhouseCoopers for the Washington-based US Fuel Cell Council ([www.usfcc.com](http://www.usfcc.com)). The results of the survey, with responses from more than 85% of USFCC member companies, show an increase in US-based fuel cell activity in sales, R&D expenditures and numbers of employees between 2001 and 2002.

The survey found that reported sales of fuel cell products, parts and services in the US for members participating in this survey increased by 11%, from \$151m in 2001 to \$167m in 2002, while fuel cell related R&D expenditures rose by 16%, from \$248m in 2001 to \$288m in 2002. The survey also reported that there were 2745 employees conducting fuel cell related work in 2001, which increased by 19% in 2002 to 3273 people.

### Japan Eco develops efficient home-use fuel cell

Tokyo-based energy-efficiency company New Japan Eco System Co has developed an efficient, compact fuel cell system for residential use, working in collaboration with precision machine maker QM Soft Co, which is already importing Chinese-made, 200 We PEMFC systems and selling them in Japan.

The EX-21 system uses a unique mechanism to accelerate the chemical reaction of oxygen and hydrogen, according to a *Nihon Keizai Shimbun* report. With a high generation efficiency of about 45%, the system generates a maximum output of 2.6 kWe, sufficient to meet power demand for a single-family household.

Japan Eco was aiming to sell 30 units to local governments, gas companies and universities on a trial basis by the end of 2003. The company will initially sell the systems for ¥5 million (US\$46 000), aiming to cut the price to less than ¥1m (\$9300) within two years.

### Fuel cell membrane research at Surrey

In the UK, Professor Bob Slade and Dr John Varcoe in the Materials Chemistry Lab at the Department of Chemistry, University of Surrey have been awarded £248 000 (US\$440 000) by the Engineering & Physical Sciences Research Council to develop MEAs for alkaline and DMFCs containing radiation-grafted alkaline anion-exchange membranes.

The project will include optimization of previously developed alkaline anion-exchange membranes, and development of MEAs using these membranes and commercial electrode materials. As a further investigation, electrode materials containing non-noble metal catalysts (such as silver, gold, nickel) will also be investigated.