Power+Energy™

Fueling the Hydrogen Economy

Power+Energy, Inc. Awarded DARPA Contract For Key Fuel Cell Technology

Phase II SBIR contract for advanced hydrogen separation membranes for Fuel Cells.

For Immediate Release

IVYLAND, PA/EWORLDWIRE/Jan. 6, 2004 --- Power+Energy, Inc. (P+E) has been selected for a Phase II SBIR contract award by the Department of Defense's (DOD) Defense Advanced Research Projects Agency (DARPA). Entitled "A Novel Low Cost Membrane for Recovery of Hydrogen from Fuel Cell Reformates," this Phase II SBIR program is a continuation of previous work successfully completed under a Phase I SBIR contract, which was funded by the US Army Research Office (ARO).

The company has recently developed new hybrid hydrogen separation technology specifically for fuel cell applications. P+E will manufacture high efficiency palladium (Pd) alloy thin film membranes using its patent-pending technology. This new membrane, based on thin film nano-structures, will enable fuel cell users to cost-effectively generate high purity hydrogen-on-demand from any reformed fuel source. Given its low cost, compact size and passive operation, this membrane technology is ideal for early adoption of fuel cells in remote, portable and mobile applications which are not amenable to other, more complex hydrogen separation methods.

A key challenge for the utilization of clean hydrogen fuel for fuel cells and internal combustion engines is the inefficiency of hydrogen storage especially for mobile applications. P+E's technology will allow users to efficiently store a liquid fuel containing hydrogen and extract it on demand. The second key implication of this technology is the deferral of very expensive investments for retail hydrogen distribution infrastructure. P+E's hydrogen separation membrane will recover hydrogen from reformed fuels including gasoline, diesel, natural gas, propane, methanol and ethanol distributed through already existing gas stations and utilities. In addition, since these fuels are stored in traditional liquid tanks, the high costs and hazards associated with ultra-high pressure (5,000-10,000 psi) or liquid hydrogen storage are avoided.

P+E intends to produce hydrogen separation membranes for a variety of applications and size ranges. The Department of Defense envisions a variety of requirements for this technology ranging from 100 Watt back-pack fuel cells for the Army's Objective Force Warrior program to large capacity 500 Kilowatt fuel cells for distributed electric power generation for surface ship applications. P+E is seeking collaboration partnerships with key organizations in order to develop specific product configurations for a range of applications.

Established in 1993, P+E is a privately held firm based in Bucks County Pennsylvania that develops, manufactures hydrogen purifiers and separators for a number of applications including semiconductor fabrication, laboratory applications and for fuel cell development. P+E has a worldwide customer base and supplies purifiers to many leading producers of advanced semiconductors. This same membrane technology will also be utilized to provide lower cost hydrogen purifiers for an expanded range of semiconductor applications.

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