Power+Energy™

Fueling the Hydrogen Economy

Power+Energy Presents Data On High Efficiency Hydrogen Separation Membranes For Fuel Cells

US Navy plans use of fuel cells for ship-board power with hydrogen sourced from diesel fuel

For Immediate Release

IVYLAND, Pa./EWORLDWIRE/April 26, 2005 --- Power + Energy (P+E) made a joint presentation with the Office of Naval Research (ONR) and the US Navy Surface Warfare Center (NAVSEA) on March 30, 2005 at the National Hydrogen Association 2005 meeting in Washington DC. This presentation described progress made on P+E's Phase II SBIR contract to develop a compact, high efficiency sulfur-tolerant 50 kilowatt hydrogen separator for ship-service fuel cell power.

The practical availability of high purity hydrogen is a critical factor in the utilization of fuel cells. The capability to produce large quantities of hydrogen for operating large fuel cells on-board a ship is even more challenging. As a result, ONR and NAVSEA are providing leadership by funding the scale-up of a membrane separator that will extract ultra-high purity hydrogen from sulfur-laden diesel fuel that will be reformed on-board the ship as needed. This SBIR contract calls for the delivery of a compact separator (16" long by 4" diameter) which has the capacity to deliver 50 kilowatts of ultra-pure hydrogen.

The presentation highlighted significant breakthroughs made by P+E in both reduction of separator size and increased separation efficiency.

Breakthroughs have been made in the ability to maximize the recovery of hydrogen from the reformed diesel fuel. Test results from this patent-pending separator design demonstrated extremely high hydrogen recovery levels (exceeding 95% depending on process conditions). The presentation also described the rugged durability of this design and the extensive cycle testing performed in order to test system integrity.

Power + Energy's unique membrane configuration is capable of separating hydrogen from virtually any reformed fuel or for removing impurities from low quality hydrogen sources. A wide range of separator capacities are available from 100 watts to 500 kilowatts and configurations can be optimized based on specific applications and requirements. As a result of its compact and rugged design, this separator is ideal for portable, stationary and mobile fuel cell applications.

Power+Energy, Inc., established in 1993, is a privately held firm based near Philadelphia, Pennsylvania. P+E develops and 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 hydrogen purifiers to many leading producers of advanced semiconductors including most major suppliers of high brightness light emitting diodes (LED).

The company now offers membrane-based hydrogen separators for a variety of applications including the generation of hydrogen from alternative (non-petroleum derived) fuels. P+E is now accepting orders for hydrogen separators and is seeking collaborative partnerships with firms developing reformers, hydrogen generators, fuel cells and integrated power generation systems.

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