



**Press release for April 9, 1999**

## **PATENT ISSUED TO SERC FOR LOW PRESSURE, MORE EFFICIENT FUEL CELL**

Humboldt State lab patents low-pressure, more efficient fuel cell for vehicles, remote power

ARCATA, Calif. -- Humboldt State University's Schatz Energy Research Center (SERC) announced it has been issued a patent for a fuel cell design that underscores how less can mean more in the world of clean energy.

SERC expects the patent to foster licensing opportunities that may propel the clean power of fuel cells into more widespread use.

According to SERC Director Peter Lehman, "This allows us to claim intellectual property to sell, so it greases the skids for licensing. The technology needs to get out of the lab and into the factory to reduce costs. It will take a commercial product that makes money for the technology to have a positive effect on society. It's got to go commercial."

A fuel cell is a quiet, efficient and clean generator that chemically produces electricity from hydrogen and air. With layers of cells, called a stack, it produces direct current like a battery but, unlike a battery, it never discharges; it continues to produce power as long as fuel is supplied. The only exhaust from its energy production is pure water.

Humboldt's patented process allows the fuel cells to operate at very low inlet-air pressure. Lessening the air pressure needed to feed air to the fuel cell reduces the need for power to run a compressor, Lehman said. Because that power is parasitic, the efficiency of the fuel cell is increased.

According to recent independent testing, the SERC cell outperformed--by a considerable margin--the other two fuel cells that were tested, both of which were commercially developed.



Peter Lehman, director of the Schatz Energy Research Center at Humboldt State, and SERC's fuel cell.

Fuel cells have been used on spacecraft for decades, providing direct-current power and drinking water for astronauts.

Since SERC built its first fuel cell in 1992 (to power aquaria pumps at the university's marine laboratory), the center has produced an array of stacks, ranging from 200 watts to 9 kilowatts, providing energy for various uses across the state.

In southern California, SERC stacks provide power to golf carts and a small car that comprise the world's largest and longest-running fleet of fuel-cell vehicles, serving the City of Palm Desert. SERC just completed a fuel cell to power an ice-cream maker in a project for schoolchildren at the Merit Academy in Santa Cruz. Another fuel cell system is being built to power a radio repeater station on Schoolhouse Peak in Redwood National Park in northern California; the station will provide telephone service for the Yurok Tribe in the Klamath River Valley.

Much of SERC's fuel-cell success will be featured at the National Hydrogen Association meeting April 7-9 in Vienna, Va., outside Washington, D.C. One of the Palm Desert vehicles will be showcased, the promise of employing fuel cells as remote power sources in Alaska will be examined, and Merit Academy students will share the products of their hydrogen-powered ice-cream maker.