

Eureka Times-Standard

HSU's Schatz Lab demonstrates new fuel cell tester

By Sara Watson Arthurs The Times-Standard

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ARCATA -- The Schatz Energy Research Center at Humboldt State University, world-renowned for its research in hydrogen fuel cell technology, has created a test station to allow it to build more efficient and durable fuel cells.

Center Co-director Peter Lehman demonstrated the technology Monday to an audience including university President Rollin Richmond, U.S. Rep. Mike Thompson, National Hydrogen Association President Jeff Serfass and members of the press.

Schatz engineers designed and built the testing station with a \$500,000 grant from the U.S. Department of Energy's Office of Science.

Anchored to a lab bench at the center's University Annex facility, the station -- a network of wires, hoses and pipes connected to motors, gauges, tanks and valves -- allows the fuel cell's traffic of electricity, water and gases to be monitored. The researchers can change each variable -- say, the flow of water -- and see how that affects the fuel cell.

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.

The center has a \$200,000 contract to build a similar fuel cell test station for Kettering University in Michigan.

The research would allow Schatz researchers to determine optimum operating conditions for a fuel cell. Crucial is not just power, but durability, said Schatz fuel cell engineer Greg Chapman.

Lehman said a fuel cell can last several thousand hours at best. Given that there are 8,760 hours in a year, that would mean appliances powered by fuel cells would wear out too quickly to make people want to buy them, he said.

He said researchers can eventually develop longer-lasting fuel cells, but it may take longer to convince the public that they should.

"The longer I do this the more I realize the technology part is the easy part," he said. "Changing people's minds is the hard part."

Thompson, too, said the biggest challenge is "to get us out of this dinosaur mentality" in which fossil fuels are taken for granted as the only energy source.

HSU students serve as docents at the center, educating younger students through tours and classes.

The lab is also involved, along with the University of California, Berkeley's Lawrence Hall of Science, with developing a curriculum related to hydrogen for high school physics and chemistry teachers.

"I've sort of given up on my generation," Schatz said. "It's the younger ones we have to reach."

Thompson said the research is important for economic and environmental reasons, and that the United States needs to better control its own energy supply.

"This is about severing the stranglehold that foreign oil has on our economy," he said.

Lehman and Thompson noted the timing of Monday's ceremony, right before Election Day.

"We're making a battleship change course; it will be a slow process," Lehman said. "And crucial to that is political leadership."