

March 31, 2011
Edition
Sylva, NC
Volume 86, No. 2



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SCC acquires hydrogen fuel cell with grant monies

With electric drill in hand, Southwestern Community College electronics engineering technology instructor Ron Poor opened the large wooden crate he had been anticipating.

Packed inside the crate was an energy source with tremendous potential.

“We’ve never seen Ron so excited,” said his electronics and computer engineering technology students.

Faculty and staff at the Schatz Energy Research Center at Humboldt State University in northern California custom built the hydrogen fuel cell power box for Poor and his students.

SERC builds two or three of these units per year for other educational institutions or non-profits, usually universities, Poor said.

“The folks at SERC-Humboldt State have been easy to work with and are supportive of the community college mission,” Poor said.



Southwestern Community College electronics engineering technology instructor Ron Poor shows off the hydrogen fuel cell power box Poor bought with Appalachian Regional Commission grant funds. SCC is the first community college to receive a fuel cell built by Schatz Energy Research Center at Humboldt State University in California, which is a leader in renewable energy technology.

SCC’s fuel cell is a first for a community college.

“This puts us in league with Auburn and Kettering University,” said Scott Baker, SCC’s dean of career technologies, who said that while those universities are also working with SERC, Southwestern is the only community college to



receive a hydrogen fuel cell power box built by SERC.

Poor received grant funds through the Appalachian Regional Commission to purchase the fuel cell, which will be used to teach the concepts of hydrogen-based renewable energy.

"This system will give us hands-on experience with hydrogen fuel-cell technology," Poor said.

In the fuel-cell system, hydrogen, stored in a small pressurized cylinder, is fed to a proton exchange membrane fuel cell to produce direct current electricity.

The patented low-air pressure design ensures high fuel cell system efficiency, Poor said. The 16-cell PEM fuel cell power system has a peak power of 125 watts.

A small inverter converts the fuel cell's 12 volts direct current output to 110 volts alternating current, Poor said. It's a pollution-free renewable energy system and the only by-products are water and heat, he said.

"It's basically the same hydrogen fuel cell technology NASA uses," said Poor. "SERC even designed the software that comes with it and lets us monitor what is happening on a laptop or PC."

For the past 30 years, Humboldt State-SERC has been a leader in renewable energy, Poor told his students.

"You might be interested to know that this same organization operates four street-legal, fuel cell-powered vehicles and a solar-powered hydrogen refueling station in southern California's Coachella Valley," he said.

"It's complex, but at the same time, SERC built the power box to be easy for us to use," Poor said.

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