



## Schatz Delivers Fuel Cell Test Station to University of Michigan

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*By Peter Lehman, Director, Schatz Energy Research Center*

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In August 2002, the Schatz Energy Research Center (SERC) delivered a built-to-order fuel cell test station for the laboratory of Professors Anna Stefanopoulou and Huei Peng of the University of Michigan's (UM) Department of Mechanical Engineering. In September, SERC completed the project by providing the university with a 24-cell, 1.25-kW PEM stack for use on the test station.

UM contracted with SERC for the test station in March 2002. SERC engineers designed, built, and tested the system at their laboratory, then disassembled it and shipped it to Ann Arbor. There the SERC staff reassembled the system and trained UM researchers in test station operation and maintenance.

Professors Stefanopoulou and Peng will use the test station to develop control and diagnostic systems for vehicular fuel cell power. Graduate students doing thesis research and advanced engineering classes will also use the station.

The test station can monitor up to 32 individual cell voltages and power outputs as high as four kilowatts. The test station computer uses a custom LabVIEW™ operator interface to monitor and control the fuel cell. Other test station features include a four-kW electronic load, an uninterruptible power supply for continuous long-term testing, and hardware- and software-based safety alarms and shutdowns. A circulating water system provides stack heating, cooling, and humidification as needed.

SERC has built several test stations for in-house fuel cell testing. Now, for the first time, SERC has taken advantage of a decade of experience to provide a test station for another university. SERC's director, Dr. Peter Lehman, lauded the project. "It has been rewarding and enjoyable to work with our Michigan colleagues. It's great to help them validate their analytical work the physical hardware."

UM's professors are pleased with the results. When the installation was complete, Professor Stefanopoulou emailed, "Thank you very much for all the time and enthusiasm you put in this project. In Greece, we use the word 'meraki' to describe such a good craftsmanship."

The Schatz Energy Research Center is located at Humboldt State University in Arcata, California. For more information, email [serc@humboldt.edu](mailto:serc@humboldt.edu) or visit their website at [www.humboldt.edu/~serc](http://www.humboldt.edu/~serc).

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