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Tuesday, May 13, 2008

Researcher gets nearly \$1 million grant Engineer Botte will expand environmental research

Apr 28, 2008

By Andrea Gibson

The state of Ohio's Third Frontier program for research and economic development has awarded an Ohio University professor \$972,992 for alternative energy work on hydrogen production, ammonia fuel cells and wastewater remediation.

Gerardine Botte, an associate professor of chemical and biomolecular engineering in the Russ College of Engineering and Technology, will use the award to establish the Center of Excellence on Advanced Electrochemical Technologies at Ohio University.

The funds will cover the purchase of new equipment and renovation of facilities in Stocker Center and the university's research park on West State Street in Athens, along with salaries of a research technician and two postdoctoral student fellows.

Botte has gained international recognition for her research on and development of ammonia and hydrogen-based fuel cells to power vehicles, residences and commercial buildings. In August, she licensed to American Hydrogen Corp. an invention called the ammonia catalytic electrolyzer, which efficiently converts ammonia into hydrogen to produce inexpensive fuel. The company recently leased a manufacturing facility in Meigs County that is expected to employ 100 people in the next three years.

Botte currently manages the university's Electrochemical Engineering Research Laboratory, which employs six graduate students and four undergraduate student researchers and will be incorporated into the center of excellence. Her research also receives funding from the U.S. Department of Energy.

The Third Frontier award will allow Botte to expand her research on new technologies. Projects include electrochemical sensors for wastewater treatment; hydrogen production from electrolysis of unconventional fuels such as ammonia, ethanol and wastewater; ammonia and solid-oxide fuel cells; and waste remediation technologies.

"The Third Frontier program will really help us reach our goals," Botte said. "We have been recognized by a national and international program, which will help attract more attention and investment."

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Gerardine Botte during the news conference to announce the licensing of her ammonia catalytic electrolyzer to American Hydrogen Corp.

Photographer Rick Fatica

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The new center will function as a research and development and consumer service unit for companies that license the center research collaborators' technologies.

"Companies don't want to stop their manufacturing and production line to do research or analyze a problem or question," Botte explained. "The center can do it instead and transfer the technology."

American Hydrogen Corp. will be the first company to work with the new center.

"We are very pleased to partner with Dr. Botte and her groundbreaking alternative energy research," said Ben Schafer, president of American Hydrogen. "Having a manufacturing facility to move engineered solutions from the lab to commercialization is a win-win for American Hydrogen and Ohio University, as well as for the state of Ohio."

Russ College Dean Dennis Irwin believes Botte's research will have impact in the state and beyond.

"Dr. Botte's work is a unique breakthrough in the problem of feasibly and safely using fuel cells in vehicles," Irwin said. "This grant is yet another award recognizing the importance of the Russ College's research to the economy and environment of Ohio."

Ohio University was one of 17 recipients of the Third Frontier awards this spring. The state granted more than \$12 million to accelerate the development and growth of the advanced energy industry in Ohio, in the areas of wind, solar, alternative fuel, energy storage and instruments, controls and electronics.

If you wish to speak with a media representative about this story, contact Colleen Carow at 740-593-1488 or girtonc@ohio.edu.

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