

CACT receives state funds to build pilot plant

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Alfred University's Center for Advanced Ceramic Technology (CACT) will receive \$1.8 million in New York State funds to build a pilot plant to help develop and test the next generation of electronic components, Governor George E. Pataki announced. The funds, allocated by the New York State Office of Science, Technology and Academic Research (NYSTAR)'s Center for Advanced Technology Development Program, will be used to "develop pilot plant facilities and expertise in the synthesis of nano-sized particles and subsequent processing and consolidation into nano-structured ceramic components with enhanced properties." What that means is that researchers at Alfred University, working with colleagues at Clarkson University's Center for Advanced Materials Processing, will develop molecular-sized building blocks for new materials, and use them to manufacture prototypes of electronic components. Nanotechnology is engineering on a molecular scale, creating new materials by designing them atom-by-atom, molecule-by-molecule, to give them specific properties, such as strength or toughness; the ability to conduct heat or electrical current; or compatibility with the human body. Alfred University, with its undergraduate and graduate programs in biomedical materials engineering science, ceramic engineering, materials science and glass science engineering, is considered to be one of the top-ranked institutions in the country for the development, characterization and processing of materials. "This is another step forward in our efforts to build a strong program in nanotechnology, which is the way of the future for manufacturing," said AU President Charles M. Edmondson. "This award from NYSTAR will complement the initiative we have already started with the \$10 million endowment from the Kyocera Corporation for the Kazuo Inamori School of Engineering," said Edmondson. The University intends to use the income from the endowment to hire four professors who are experts in nanotechnology. The U.S. National Technology Initiative defines nanotechnology as "anything smaller than 100 nanometers with novel properties." In other words, nanoscale materials are building blocks, about 1,000 times smaller than the diameter of a human hair, that are designed to react in specific, and sometimes unusual or different, ways from more conventional materials. "This grant from NYSTAR's Center for Advanced Technology Program allows us to accomplish three things," said Dr. Vasantha Amarakoon, director of the Center for Advanced Ceramic Technology. "First, it allows us to strengthen our relationship with Clarkson University and its Center for Advanced Materials Processing." To better support New York State industries, NYSTAR encourages collaborative ventures between its Centers for Advanced Technology. "Second, this allows us to create the infrastructure we need at Alfred University to develop nano-structured ceramic components; produce them in our pilot plant and then test them," said Amarakoon. "The facilities at Alfred and Clarkson will serve as industrial proving grounds for innovative production technologies to assist NYS industries in adopting new, more competitive technologies." And finally, said Amarakoon, the grant "allows New York State companies to work with researchers at Alfred and Clarkson to develop new technology for the manufacture and commercialization of new products." Partner industries include Ferro Corporation, Ferronics, Inc., AVX, and Cooper Power Systems.