

CACT's new nanotechnology fabrication plant will spark regional development

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A \$1.8 million nanotechnology pilot plant to develop and test new products will "be the spark" for development of Allegany County and the region, said State Senator Catharine Young at a ribbon-cutting ceremony to mark the opening of the new facility. "This the future of our region. This is the future of our state," said Young. "This is why the Legislature works so hard to fund the New York State Foundation for Science, Technology and Innovation (NYSTAR)," she said, referring to the state agency that provided the funding for the creation of the new facility. "We are building what we need to move ahead." The nanotechnology pilot plant is a joint project of the New York State Center for Advanced Ceramic Technology (CACT) at Alfred University and the Center for Advanced Materials Processing (CAMP) at Clarkson University. Both are also NYSTAR-funded research centers. "This is a true partnership," said Dr. Vasantha Amarakoon, CACT director. Clarkson researchers will develop the nanoparticles, or powders, that will provide the building blocks for the new materials, which will then be processed and tested at the nanotechnology plant in Alfred, housed in the Ceramic Corridor Innovation Center. "Because of the state, because of NYSTAR, we were able to make this happen," said Amarakoon. "Without the state investment, we would not have been able to make this happen." The new facility consists of a Class 10000 clean room with an array of equipment used to process the new materials that will be used in the next generation of electronic components, solid oxide fuel cells, photovoltaics and other applications. Ceramic materials are "hidden inside most of the magic gadgets we can't live without," explained Steve Arrasmith, assistant director of the CACT, who demonstrated the pilot plant's capabilities to approximately 50 people gathered for the ribbon-cutting. Many of those new applications, however, depend on development of new materials, and that's where the nanotechnology pilot plant will prove to be of value to industrial partners. Researchers will be able to engineer materials with specific properties, process, produce and then test the new products in the pilot facility and adjoining labs as the final step prior to commercialization. Nanotechnology is engineering on a molecular scale, creating new materials by designing them atom-by-atom, molecule-by-molecule, to create desired properties, such as strength, toughness, the ability to conduct heat or electrical current, or compatibility with the human body. "This is the next phase of our CACT development," said Amarakoon. "Industries are waiting for this."