

NanoSonic: Nanotech on the move

NanoSonic, a nanotechnology company with roots in Blacksburg, this week celebrates its new quarters in Giles County, vertical blue stripes and all.

By [Duncan Adams](#)

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Photos by MATT GENTRY The Roanoke Times

Michelle Homer, a laboratory technician with NanoSonic, mixes water while preparing a smart-textile application in the new NanoSonic research and production facility (shown at bottom) in the Wheatland EcoPark in Giles County.

The first visitor waited for the right moment and then politely inquired. The second, arriving about 10 minutes later, wasted no time. Both asked about the broad vertical striping emblazoned upon some exterior sections of NanoSonic's new, leased home in Giles County. Their unexpressed question was, "What were you thinking?"

Rick Claus grinned. He was one of three founders of NanoSonic and is its current president. As did Jennifer Lalli, the nanotechnology firm's chief technology officer and director of nanocomposites. (Claus' last name is pronounced like Santa's.) "We're hearing that question from a lot of people," Claus said, smiling. "We thought the stripes were going to be very narrow or pinstriped. Instead, it looks like a barber pole that isn't cylindrical."

Lalli added, "Our theme colors are blue, white and green. The wide stripes outside are a little different [as an exterior feature], but we're a little different." The stripes, she said, "are indicative of our self-assembly [nanotechnology] process and were thus a natural fit with our architect's suggestion."

NanoSonic's differences seem to be paying off.

The company's products have attracted the attention of potential clients, competitors, firms looking to buy the business or license its products, and even those urging NanoSonic to go public. "Those things have come up," Claus acknowledged. "Most of those discussions have been very flattering, but that's not what we're planning right now."

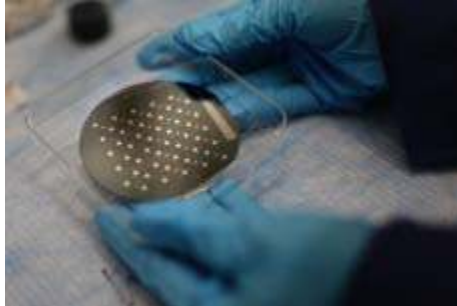
Ramping up

In August, the company moved from cramped quarters of about 12,000 square feet in Blacksburg to a new, 30,000-square-foot building in Giles County. NanoSonic became the first and so far only tenant in the county's Wheatland EcoPark business/light manufacturing park near Pembroke. The small, private company's plans for the building include manufacturing of materials invented by NanoSonic, including Metal Rubber, Fire/Blast and others.

About three years ago, the U.S. Navy asked NanoSonic to develop a nontoxic fire- and blast-resistant material, and it appears that Fire/Blast's potential applications are many, ranging from helping to protect Navy vessels to providing fire resistance for homes, firefighters' clothing and many other applications.

The company currently manufactures daily about 2,000 pounds of Fire/Blast. The Navy or other customers might demand more in coming months and years, but NanoSonic said speculating about future output is "probably not a good idea."

"However, what we can say is that our new building has sufficient space for us to produce more than 5 million pounds [of Fire/Blast] a year, and we know that," Claus said.



Research scientist Echo Kang holds a solution-treated macroelectronics disk.

NanoSonic will continue manufacturing a nanomaterial known as Metal Rubber -- which conducts electricity like copper but stretches like a rubber band -- as well as other specialty coatings. Claus said the company has begun to tinker with microelectronics.

One definition of nanotechnology: "The design, characterization, production and application of structures, devices and systems by controlled manipulation of size and shape at the nanometer scale (atomic, molecular, and macromolecular) that produces structures, devices and systems with at least one novel/superior characteristic."

On July 20, the company took a calculated risk with Fire/Blast. It sprayed the coating on the upper portion of one-half of an abandoned, rundown duplex before Blacksburg firefighters torched the structure as a training exercise. The Fire/Blast-coated portion resisted the fire's spread for a long time as black smoke and flames boiled out of the uncoated side.

The big move

Claus did not link NanoSonic's move to recent product innovations. The decision about when and where to relocate followed an eight-year discussion, he said. That dialogue intensified about three years ago, he said, "when Fire/Blast was not even a gleam in anyone's eye."

The company said it has invested about \$3 million in the move. NanoSonic's lease with Giles County extends 10 years, with a 10-year renewal option. Monthly lease payments to the county's Industrial Development Authority are \$13,850, according to Chris McKlarney, county administrator.

"We have been truly blessed to have the opportunity to work with NanoSonic and to get to know their staff," McKlarney said.

NanoSonic plans an open house Monday beginning at 10 a.m.



Rick Claus, president of NanoSonic, observes as a research technician works on a microelectronics project in the research and development area of the company.

'Pedigree'

Claus and Lalli seem thrilled with the company's new home, even though getting there requires a longer commute for many of the company's 73 workers. (NanoSonic anticipates its employee count will double during the next 12 years.)

When asked about her reaction to the move and commute, Lalli replied, "I smile all the way to work."

Their excitement stems from qualities both seemingly mundane and singular.

"We actually have a loading dock," Claus said.

The building's additional space, rural setting and windows in many offices provide new amenities.

"You can tell when it's raining," Claus said. "You don't have to eat lunch next to the restroom. We saw 20 wild turkeys the other day, and they were being followed by two coyotes."

Why move?

"We were out of space on Main Street," Lalli said. And there was an issue also of appearances, she said. NanoSonic had matured beyond its scruffy startup days, she said, and needed a more mature look. "Some customers told us we had pedigree issues," Lalli said.

The new quarters aren't perfect, of course.

"The Roanoke airport is a little farther away," Claus said. "And there's no Wendy's across the street."

And why Giles County?

Aric Bopp is executive director of the New River Valley Economic Development Alliance. "We are very excited that NanoSonic decided to stay in the New River Valley," Bopp said. "They are such an exciting company and we can't wait to see them continue to grow and prosper in the NRV."

Claus said NanoSonic looked at sites in the town of Pulaski and in Floyd, Montgomery, Pulaski and Roanoke counties before choosing Wheatland EcoPark. Claus said he and others experienced Giles County officials as "honest and straightforward." And the park's virtues included more room to grow.

"We're already talking about a new building next to this one," Claus said. "And it won't take eight years this time."