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NanoSonic wins R&D 100 Award for unique fire and blast protection material

Pembroke, Va., June 22, 2011 - R&D Magazine has named HybridSil™, a new coating technology that provides fire, blast and ballistic protection to various types of structures from ships to buildings, as one of the 100 most technologically significant products introduced worldwide during the past year.

This award marks the second time NanoSonic, Inc., located in Pembroke, Va., has won a Research and Development 100 Award in the international competition. The first time was for its development of Metal Rubber Textiles.

The *Chicago Tribune* has called these R&D awards “The Oscars of Invention.”

“The unique properties of these coatings are their ability to combine flame and blast protection. A handful of materials provide either feature but not both since the properties are mutually exclusive with currently available material technologies,” said Vince Baranauskas, director of polymer science and engineering at NanoSonic, co-inventor of the material with Michael Bortner, director of manufacturing process development for NanoSonic.

Baranauskas said the new hybrid coating material was developed in his lab for the U.S. Navy through the combined use of nanotechnology and polymer science. Successful testing of the novel technology led to a U.S. Navy Commercialization Pilot Program to demonstrate the manufacturing of pilot scale quantities.

According to Roshdy Barsoum, program manager of the Office of Naval Research’s Explosion Resistant Coating, Ships and Engineering Systems Division, HybridSil represents a major development in the application of protective coatings for ship structures, “because of its superior fire and blast resistance.” Barsoum served as the program technical monitor when NanoSonic developed HybridSil™ and was named as the co-submitter for the R&D award.

Commercial applications for the flame and blast resistant material include safer, protective coatings for buildings, factories and vehicles. Future uses could include fire-resistant clothing

and furniture, according to NanoSonic's President Richard Claus, a past recipient of Virginia's Outstanding Scientist Award.

High profile buildings in countries prone to terrorist attacks could be easily retrofitted to reduce greatly the threat of fire and smoke toxicity resulting from explosions and subsequent fires, Baranauskas added.

Baranauskas explained his efforts to develop this new material started three years ago. He was responding to the U.S. Navy's request for better blast protection of its military fleet without the concerns of flammability and smoke toxicity that challenge current products.

The new polymer nanocomposite HybridSil "will reduce the probability of lost lives and lessen damages to ships, thus increasing survivability against explosive and flame threats," Baranauskas said.

NanoSonic makes this self-assembling material using a patented, environmentally friendly, room temperature nanotechnology manufacturing process. Baranauskas said the material may be tailored for initial cure in 20 to 60 minutes at room temperature followed by full cure within 24 hours in open air environments. It can be applied using conventional painting or spraying.

Original product testing occurred in several major laboratories nationwide.

The award will be presented to NanoSonic at the R&D Magazine's Gala Awards Banquet on Oct. 13, 2011, at the Renaissance Orlando Hotel at SeaWorld in Florida.

NanoSonic, founded in 1998, is considered a leader in small business success in nanotechnology. A study conducted during the past decade on the strength of small businesses in nanotechnology indicated NanoSonic was the leader of the 13 southern states in the overall dollar amount of contracts it received as well as the number of contracts awarded. The report, *Connecting the Dots: Creating a Southern Nanotechnology Network*, was authored by the Southern Technology Council and Georgia Tech.

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