Small Fibers, Big Future

Nanotech materials continue to be one of the fastest growing marketable new products in the world today. On the textile side, we’ve seen the commercialization of a variety of nanotech fabric and leather innovations improving appearance, color, durability and breathability, as well as providing protection from odors, water, dirt, oil, and stains.

Recently, one of the most exciting nanotech innovations for textiles has come from ongoing research at the University of Akron, with its joint venture partners, Strikto Company of America and German based Schill & Seilacher. SNS Nano Fiber Technology, LLC, is the company that was born from this partnership, along with the development of Nanosan, which is a new type of nonwoven composed of polymer micro- and nanofibers.

Through SNS’s proprietary technology, nanofibers can now be produced in larger quantities and at a substantially lower cost, making Nanosan the first commercially available material of its kind on the market. Nanosan is currently available in either rolled goods or cut-to-length sheets, and specialized nanofiber membranes can also be produced to customer specifications.

“Nanosan is available in a variety of basic weights, including self-supporting mats of nanofibers up to 2 mm thick, whereas most electrospun materials are produced as very thin layers on a substrate,” explains Laura Frazier, who was involved in the development of Nanosan while in graduate school at the University of Akron, and is now director of SNS Nano Fiber Technology. “Nanosan can also contain particles (up to 150 microns), dispersed throughout the nanofiber matrix or encapsulated within the nanofibers themselves. Other production methods will not allow the inclusion of particles in the spinning solution, unless they are soluble or have diameters in the nanometer range.”

Nanosan is suitable for diverse applications, including personal care products, protective tapes for electrical cables, wound care, and barrier and protective garments for the military. While Nanosan is just beginning to scratch the surface commercially, Frazier sees a great future for the product, including a variety of outdoor market applications.

She states, “Typically, we would sell Nanosan in roll goods form, but a variety of uses can be envisioned. Garment applications would be most likely, particularly where there’s a need for a fabric that has antimicrobial, breathable, and/or soft qualities.”

LAURA FRAZIER, SNS

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