

Smart textile and e-textile solutions for indoor environments

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A manufacturer of high-performance, mission-critical narrow textiles, OTEX creates e-textile and smart fabric product solutions for a variety of applications such as apparel and PPE. This image was taken at the company's R&D lab where new products are designed, engineered and tested. Photo: OTEX Specialty Narrow Fabrics.

Wiring narrow fabrics

For a number of years, OTEX Specialty Narrow Fabrics® (formerly Offray) has been involved in the design, development and manufacturing of e-textiles and smart fabrics, says Eric Aerts, director of R&D/marketing for the company. Located in Bernardsville, N.J., OTEX manufactures high-performance, mission-critical, narrow textiles utilizing specialized fibers and other materials for applications like personal protective equipment (PPE) and apparel, industrial and mechanical products, and aerospace and defense applications. Markets include first responders, military, industrial safety and fall protection, flood protection and architectural/construction projects.

"Our company has a long history of incorporating wiring into textiles from our years as a decorative-ribbon manufacturer," says Aerts. "It was C.M. Offray & Son who first wove wires into ribbons so they could be positioned to hold their shape. Today, we weave narrow fabrics with wires almost as fine as a human hair, all the way up to steel cables that can support tens of thousands of pounds and everything in between."

Aerts says given the burgeoning interest from various sectors on wiring, energy storage and componentry that can be integrated into fabrics/textiles, the challenge is to winnow out what offers the potential for delivering meaningful solutions. Some of the areas OTEX has explored include specialized garments that monitor physiological conditions, temperature and pressure sensing, light emitting (for safety), and data transmission and reception.

One arena where he sees a strong potential for indoor smart fabric applications is gaming, saying there is a "big future" with motion tracking and virtual reality. Smart home and offices incorporating controls, sensing, security and other electronics could also present opportunities for smart textiles. "But like all new markets, there's an initial Wild West aspect, until the leaders and trends emerge," he adds.

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