

Clothing that makes up its own mind

by Sally M. Lourenco

You know all that guff fashion people spout about the blurring of lines between day wear and evening wear and women's wear and men's wear? It's but the tip of the sartorial iceberg. The most interesting lines being blurred these days are between technology and fabric. After all, what's a unisex jacket, with sequins or without, compared with interactive intelligent clothing incorporating nanotechnology?

"The apparel category is ripe for innovation. It really hasn't changed much in decades - aside from changes in colour, skirt length, embellishments there has been little innovation -but there have been big shifts in consumer dynamics and lifestyle," says Mark Brutton, senior marketing vice-president at Nano-Text, a California-based company with clients ranging from Gap to Hugo Boss.

Nano-Text specialises in engineering molecules to improve the properties and atomic composition of fabrics - for example, creating stain-resistant coatings, or fabrics that keep you cool and resist static.

"What we're seeing now is the beginning of this evolution, with ties that repel stains, and suits and dresses that help us feel more comfortable as we move between indoor and outdoor climates," says Brutton.

And while some argue that this is simply better chemical innovation, not nanotechnology, Nano-Text in effect permanently changes fabric on a molecular level, creating something new, however invisible or simple it may seem.

Paul Stuart and Hugo Boss are both using Nano-Text's spill-resistant formula, Boss in its Orange label men's shirts and Stuart in a line of ready-to-wear men's wool trousers available in Japan. And they are not alone.

"We are working with intelligent fabrics and with synthetics in exploring weightlessness, durability and temperature modification," says Waleed Khairzada, the designer who, with Julia Jentsch, former women's collection designer for Calvin Klein, created the Naum fashion house last year.

The pair's double-face cashmeres, mohair and metallic satins made of cotton mix with high performance details and textile technology. A suit made from paper yarn reduces its weight while retaining its shape and keeping the body warm.

Naum's spring collection for 2006, with its ethnic undertones, was seemingly inspired by a modern day safari. Antibacterial and sun-protective fabrics developed with the help of Schoeller, a textile and technology company based in Switzerland, blend in with kimono silk from Japan, shimmering jacquard, and sheer flowing knits.

"Schoeller is working with us on a paraffin technology that adds temperature control. Paraffin also has memory and in the fabric it releases warmth," says Khairzada.

"We take what has been done in a great way in the past, through craftsmanship and haute couture techniques, and merge it with new technologies," says Jentsch, "We're even thinking of an evening gown you can carry in your purse, and unfold and it keeps the drape of high quality fabric or silk."

CuteCircuit, a design and product development lab with offices in the US and Italy, works to make technology more streamlined and wearable, with some of its designs integrating Bluetooth technology and mobile phone accessories into clothing. The Hug Shirt, for example, allows one to feel the sensation of being hugged over a distance through telecommunication networks and the Mystique dress changes both shape and colour depending on the time of day, increasing in length from morning to night.

Sabine Seymour, chief creative officer of Moondial, a company that researches and consults on what Seymour calls "fashionable technologies" says the obstacle to most fashion usage of nanotechnology has been vanity.

"Accessories are easier. They are modular and can be worn with a lot of types of clothing. Embedded systems can work with the design, whereas with clothes it is harder to hide the different components as easily," says Seymour.

The technology is not far off however. Imagine putting on a T-shirt that will tell you how your body is doing throughout the day. That's just what Sundaresan Jayaraman, a professor at Georgia Institute of Technology, came up with when he created the Smart Shirt for Sensatex, a New York-based firm. It's a deceptive \$200 soft cotton T-shirt that picks up the wearer's vital signs through minute interwoven conductive fibres, which process the data from embedded sensors to a transceiver the size of a credit card.

This, in effect, demonstrates the power of nano-sized technology for clothing, and its possible uses for medical ends, the military, athletes and, even, monitoring babies.

"There will be a parallel in clothes that are luxury because of the traditional materials and handcraft and those that have light, sounds, colouring and interactive elements. But it seems the younger generation will be the more tech-forward," says Seymour.

Designers such as Naum are taking the sophisticated approach, however. They know the luxury fashion client wants the quintessential excitement implicit in evolved design with a priority on aesthetics.

And nanotechnology can take that silent simplicity even further, creating clothes that have a greater meaning and function in daily life. What this means for the consumer is a streamlined world filled with endless possibility, utility and interaction with intelligent fashion - and perhaps sooner, rather than later. ■