

Future FABRICS

Wearable technology is all the rage – but connected clothing is only one aspect of what's in store for fashion

Words by JOSEPHINE COLLINS



Fashion retailers and brands take note: when technology giant Intel signs up US brand Opening Ceremony, Barneys New York and the Council of Fashion Designers of America, the idea of wearable technology is no longer a niche area for sports nerds and academics.

While the partnership began with the development of a bracelet designed by Opening Ceremony and to be sold at Barneys with yet-to-be announced properties, this is a shrewd move by microchip company Intel, which has instantly upped its own fashion credentials at the same time as opening up the potential of embedded technology.

That potential now moves beyond life-logging products, such as wearable heart monitors that are already available for active sportswear.

'Smart', or connected, clothing is just one aspect of the future. In the world of clothing fabrics, it is the development of new blends of fibres that are enhancing performance together with the continuing refinement of scientifically manipulated fibres that are making the difference.

Dominique Mettraux, textile consultant at global trend forecaster PeclersParis, says there are a number of fibre performance developments to watch, including thermo regulation, bio ceramics, 'cosmetic' textiles and, looking further into the future, bio synthetics and bio plastics.

Bio synthetics and bio plastics can be used to create high-performance fabrics that are man-made but use natural polymers. These have a strong

crossover with the drive towards greater sustainability in the fashion supply chain. This is a point also made by Alan Douglas, product specialist at manufacturer Gore, who says environmental issues are feeding into product development.

"It's not exciting, but looking at the environmental side of product development and the impact of the supply chain is a massive undertaking," he says.

BERYL GIBSON, TEXTILE CONSULTANT for UKFT, concurs: "The two areas of future development are in performance and sustainability, and they are slowly coming together. And it does need to be one story."

Gibson has noted a greater use of high-performance textiles in fashion and believes this is set to increase – largely as a novelty in the short term. She points to the use of neoprene on a number of catwalks and in young fashion collections in recent seasons, and expects to see more neoprene in the future – but made into net, or embossed, laminated and sculpted.

"It looks very dramatic on catwalks and in fashion magazines, but is also light and comfortable. It gives volume. It's all about fashion and fun now, but it will develop as an apparel fabric, particularly for men."

As trends move towards more tactile fabrics and play on volume, 3D Spacer knits – high performance multi-layered, breathable fabrics usually used in products such as car seats – are also set to come into their own as they offer bulk without weight.

PeclersParis's Mettraux has already noted their use in sports footwear, but more directionally,



Appliance of science: a Nanimica jacket with a Gore-Tex membrane layer; (below, from left) James Long and Simone Rocha used 3D Spacer knits

Gore-Tex Pro product for extreme mountaineering in January. It incorporates a new woven micro-grid backer, which is ultra light at just 17 grams per square metre, and a new membrane for use in outerwear.

Gore's Douglas says this will now move through the market sectors. Product for the serious outdoor market, particularly hiking - and still very high performance - will launch for autumn 15. Named Hiking Shell, the jackets will have a softer feel than the extreme mountaineering garments.

The next stop, further into the future, would be the more general outdoor market.

Douglas says that much development for outdoor-wear is in insulation, and he can track, for example, the development of fleece from the extreme sector into high-volume low-cost garments.

The next garment type he predicts will get a performance update is stitched down products filled either with down, down and feathers, or with synthetics.

While these have been getting thinner and lighter as they have moved into the fashion sector they still have an obvious fallibility - they are not water-resistant.

"The latest performance trend is looking at how to protect the down," he says. This will either be through developments that will prevent the filling from picking up water, or developments that will stop water getting through from the outer fabric.

"It will be all over ISPO [a sports/outdoor show in Munich at the end of January] this year, making sure there is enough protection for the day-to-day weather that can be windy, but also damp and wet."

Gibson makes the point that fibre blends are getting more sophisticated and improving performance - even with existing fibre types. This focus on getting fabric technology right is borne out by an initiative between fibre producers Invista and Lensing, working together to improve the performance of denim made with cotton plus Lensing's cellulosic Tencel and Invista's Lycra.

The initiative was launched at the Denim by Première Vision show last November, addressing issues that had been raised by customers, including fabrics not keeping their shape and fabric puckering due to seam slippage.

Five to watch

Thermo regulation maintains the body's temperature and is widely used in sportswear, outdoorwear and underwear, such as Uniqlo's Heattech range. It relies on the body to activate its properties.

Bio-ceramics have volcanic rock, for example, added to the fibres via microencapsulation during the spinning process with the claim they can help circulation and give a slimming effect. The Smooth Legs style of Wrangler Denim's Spa range launched in spring 2013 is an example of this.

Cosmetic textiles are also microencapsulated and claim properties as diverse as breast enlargement, smoother skin and anti-ageing. Wrangler's Spa Aloe Vera and Olive Extract jeans are examples of this type.

Bio synthetics are fibres that imitate nature but are man-made from natural polymers. Watch out for fibres made using the secretions of the Hagfish, an eel-like creature, which give the fabric high performance but a very soft feel. Lensing's Tencel C blends the cellulosic fibre with Chitosan - the treated shells of shrimp and other shellfish. This releases body heat while maintaining a silky handle.

Bio plastics use miscanthus grasses (from Africa and southern Asia) that can be used to create high-insulation filler materials.

Trials conducted by the two fibre producers that came up with a blend of Lycra DualFX paired with a blend of cotton and Tencel showed improvements in slippage and fabric recovery. These are exactly the kinds of initiatives that are improving performance at the same time as nodding towards sustainability.

As Federica Albiero, Invista's denim account manager, says: "The interest in artificial fibres is growing because they increasingly have the look of naturals, but with less impact on the environment."

Simone Rocha used this fabric type in her autumn 13 collection and James Long used it for spring 14.

While there is much hype about the potential for 3D printing across consumer sectors, so far there have only been examples of 3D-printed jewellery and accessories in fashion. Gibson says she is yet to see any 3D-printed fabrics: "I've seen proposals, but there is a way to go as yet." She sees potential in this area for pleating, embossing and embellishment.

Textile weight is another area getting fibre and fabric developers excited. Gore launched its latest

Stephanie Thiers-Ratcliffe International Marketing Manager, Cotton Council International

As we delve into the future world of apparel fabrics, we should go beyond the innovation of performance-enhancing garments. Functionality is just one element of a garment - consumers are ultimately drawn to items which look and feel good, such as those made from US cotton. Consumers are also becoming increasingly concerned with where the products they buy come from, and how they are made. It is therefore evident that responsible sourcing will become key for brands and designers.

The industry's future challenge is to create design initiatives which not only

improve performance, but also support the drive towards responsibly sourced fabrics and materials.

More consumers worldwide are demanding responsibly produced garments and textiles, and there's no turning back - this will be a permanent change in their preferences. As a consequence, there is a drive towards traceability and greater sustainability in the fashion supply chain.

While cotton has been known as a favourite with consumers and designers for centuries, it is also the fibre of the future. Through innovation, technology and regulation, the US

cotton industry for many years has endeavoured to cut the environmental impact of cotton production, setting the global standard for purity, quality, and responsibility. The main objective of the recently launched Cotton LEADS™ programme is to ensure the whole supply chain is aware of the practices for responsible cotton production. This is implemented in the US and Australia, and includes continuous, constant improvement.

Cotton LEADS™ is a solution for brands willing to prove their commitment to responsible production. The programme assures

retailers, brands and textile manufacturers, seeking transparency in their supply chain, that their partners can easily source reliable and responsible raw cotton.

Since its launch, 62 textile firms have formally acknowledged the merits of Cotton LEADS™ cotton and now include it in their sourcing guidelines. Among those that have become members are Fruit of the Loom, Brooks Brothers, Central Textiles, Tuscarora Yarns and the Esquel Group.

