

In conversation with Smartfiber AG.

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RUDOLSTADT – In our latest product profile, we join Sarah King, director of business development at Smartfiber AG., to take an in-depth look at the patented technology which enables the Germany-based company to scientifically-develop functional fibres that are said to be versatile and deliver benefits directly to the skin and body. Tony Whitfield reports.

Many recent industry reports suggest sustainability will be a driver for growth across the textile industry – and functional fabrics will be no exception. Technological innovation will be pivotal in influencing designers to think about new ways to be creative and adopt regenerative methods. With this in mind, we will take a look at some of the new and existing products available on the market.

This week, we focus on Smartfiber AG – a company which produces textile fibres within a spinning process. The company says the “possibility of the uniform incorporation of natural, organic or inorganic additives into its fibres allows the production of different functionality based on

cellulose.” Company director of business development, Sarah Kings comes under the T.EVO spotlight.



T.EVO: *Smartfibre has a patented process to permanently incorporate natural additives (such as zinc and seaweed) into cellulosic fibres. What can you tell us about technical process behind this?*

SK: It's based on the Lyocell manufacturing process, which uses cellulose (wood pulp), normally processed from beech trees. With our patented technology, we can permanently embed natural additives inside the fibre. We then add zinc oxide and seaweed (in powder form) to the liquid stage of dissolved cellulose. The solution is then spun into fibres,

cured in water and processed into staple fibres. All process liquids and water are recycled and re-used. We only use pure and chemical free additives, which makes them fully biodegradable. Our seaweed is sustainably harvested from the Icelandic Fjords, one of the purest eco-systems still existing. Sustainability is very important to us, so that's why we make sure that the seaweed plants are always cut above the regenerating part of the plant, so they can grow back after time. The seaweed is dried, crushed and ground into a powder. The zinc is recycled (usually from the automotive industry) produced using the indirect (French) process. The result is pure and highly pharma-graded zinc oxide.

T.EVO: *What types of end-use applications benefit from Smartfiber technologies?*

SK: The greatest thing about our fibres are their versatility. They can be processed with any other fibres (natural and synthetic) to develop materials for all kinds of applications and functionalities. Our fibres are already successfully used in sport and lifestyle collections, underwear and lounge-wear, baby and children's clothes. It is also used in footwear, home textiles and bedding. Our products deliver added environmental benefits to any finished garment by the fact that they are both natural and sustainably produced.

T.EVO: *What would you say are the main advantages of incorporating skin protection and hygiene properties at the fibre level, rather than using fabric finishing technologies?*

SK: The biggest benefit of adding it in at the fibre stage of the production is that the additives are permanently embedded inside the fibre. That means that garments using our fibres can be washed multiple times without losing any of the fibre properties. We've done wash tests where even after 100 wash cycles our fibres still retained their high performance. The other big benefit is that there's no need for any chemical finishing treatments in our process.

T.EVO: We spoke at the Performance Days (PD) trade show in Munich – which this year leaned significantly towards biodegradability developments in the functional apparel sector. Where do you stand on this?

SK: I was delighted to be invited by Performance Days to speak about the importance of biodegradability in the functional material sector. This shows that the industry is changing and is looking more for natural and sustainably produced alternatives.

I've been working in the fashion industry all my career, so from a personal perspective, I'm happy to see this shift from both customers and brands. It's important that everyone understands the impact the fashion industry has on our environment. It's the second largest polluter after the oil industry and every year over 50 million tons of textiles end up on landfills globally, with most of it not able to either degrade or be recycled.

Through forums like the one at PD we can help to educate and make designers and brands more and more aware of these issues. Hopefully, we can help them to change the way they think about a product's lifecycle and show them the alternatives that are available to adopt a more sustainable approach for their products.

T.EVO: Is it possible for industries such as the outdoor sector, which relies upon technical fibres and advanced processes to enhance performance, to adopt completely biodegradable fibres/fabrics? And if not, what are the barriers to doing this?

SK: It's not easy and biodegradability and a more sustainable approach are still in the early stages in the functional material industry. The sector has been relying for so many years on synthetic fibres, so it will take a while to change perceptions. There's still a lot to do regarding finding the right alternatives without compromising on the functionality and price. But I'm positive that this will change over the years, especially as now there are more alternatives available in the market and there is more innovation than ever before. I'm proud that smartfiber can offer such an alternative, using nature's strength to create functional fibres that offer great benefits and added value to any textile.

Awards and certification

Smartfiber's Seacell (LT and MT) and 'SmartCell Sensitive' brands have been tested and endorsed by leading institutes and laboratories and are OEKO-TEX 100 certified for baby products. Most recently, ISPO selected SeaCell and SmartCell as two top innovations for summer 2019. Previous awards gained include the prestigious German Innovation Prize, and the Grüne Blatt award for the production of environmentally friendly materials from recycled, renewable raw materials with low environmental impacts in the life cycle.

Web: www.smartfiber.de (<http://www.smartfiber.de>)