

Texprocess presents 'Digital Textile Micro Factory' for the first time

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Fully networked textile production chain presented live. All stages in the process from design to the finished product. On the way to Industry 4.0: at the upcoming Texprocess trade fair, a 'Digital Textile Micro Factory' will present a live demonstration of an integrated production chain for apparel. In collaboration with the German Institutes for Textile and Fibre Research in Denkendorf and a number of well-known companies in the textile sector, Texprocess will, in the micro-factory in Hall 6.0, demonstrate the entire networked production of items of clothing – from the design stage to digital printing, automatic cutting out and fabrication. Visitors at Texprocess will follow a signposted path through the various individual stages of manufacture in the micro factory and will be able to get information from experts at each stage. In addition, there will also be guided tours on offer. 'Especially when it comes to 'fast fashion', micro factories offer the opportunity to put ideas into practice immediately and to try out new business models, based on specific customer requirements. They facilitate a type of production that is responsive to the market and, as an additional bonus, ensure optimised use of material, so as to contribute to greater levels of sustainability in textile processing,' says Olaf Schmidt, Vice President Textiles and Textile Technologies at Messe Frankfurt. 'The demand for individualised products necessitates making the entire production process more flexible. Serial production with, at the same time, smaller and smaller batches, right down to batches of just one, is only possible with industrially manufactured individual products. These fully automated and networked processes can now be implemented through the use of digitalisation,' adds Elgar Straub, General Manager of the VDMA's Textile Care, Fabric and Leather Technologies Division.

Stages in the digital textile micro factory

The first stage in the micro factory is the CAD/Design area. With the help of computer-aided design (CAD) and the Vidya 3D-simulation software, creative designs are put into effect in a virtual reality and/or adapted. The data that emerge from this are immediately merged with data for subsequent processes such as the digital printing of the textile, the cutting out and sewing. Our partner for the Design area is Assyst, a company in the Human Solutions Group. The next stage (Printing) demonstrates large-format inkjet printing, involving sublimation printing on polyester and pigment printing on cotton and mixed fibres. Manufacturing tasks can be flexibly combined here with various printing parameters so as to produce a print with reproducible colours. Our partners in the software and hardware business Caddon Printing and Imaging, Ergosoft and Mimaki as well as Coldenhove and Monti Antonio are the ones ensuring optimum printing results at this station. After this comes the Cutting area. At this juncture in the production process, the individual orders need first to be identified without anyone touching them. Identification is made possible by automatically loading the appropriate data files for the cutting-out process. A feeder system at the cutter ensures that the material is transported as smoothly as possible and without distortion. Camera systems recognise the cutting points, as a result of which the path the cutter is to take is optimised and a top-quality cut can be achieved. Our partner in this area is Zünd. In the next section of the production process (Assembling), the cut-out elements of the various orders are also identified in a context-specific manner and added to the garment. This area shows the process of identifying the individual orders and the sewing process, carried out on the latest sewing machines, which can also be linked to the internet. Furthermore, the area will show ultrasonic welding for apparel fabrics. Our partners in this area are Dürkopp Adler and Pfaff. In the last step (Labeling) the garments will be provided with logos and graphic details that will be washable, can be ironed and are suitable for dryers. Partner of this area is Seripress. Additional partners of the Digital Textile Microfactory at Texprocess are Eschler Textil and Schoeller Textile. The Digital Textile Micro Factory was already drawing lots of interested visitors at the last edition of Heimtextil in January of this year. In the micro factory at Texprocess, the participating companies will now be exhibiting in the context of a sector that processes apparel and is very much technology oriented. Texprocess takes place in parallel to Techtextil, leading international trade fair for technical textiles and nonwovens (also from 9 to 12 May 2017). A total of 1,662 exhibitors from 54 countries and 42,000 trade and professional visitors attended Texprocess and Techtextil in 2015. Over 13,000 trade professionals visited Texprocess. In addition, there were around 7,600 visitors who came across from the concurrent Techtextil.