Quality Inside – Made in Europe
Automation and high-tech materials for the upholstered furniture industry

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Every two years, Techtextil and Texprocess take place in Frankfurt. The trade fair duo offers the upholstered furniture industry an update on efficient production technologies and functional cover materials. Both trade fairs also covered the entire textile process chain and for the first time visitors were able, to experience production processes live in five mini-factories.

A total of 1,818 exhibitors from 59 countries exhibited at Techtextil and Texprocess (Frankfurt/Germany) in May (14.5.–17.5.2019). With 1,501 suppliers, Techtextil was the larger event, with 317 companies exhibiting at Texprocess. This means that this year's edition was attended by more suppliers than at the previous event. Around 47,000 trade visitors from 116 countries were interested in both trade fairs and were able to visit both events with their admission tickets. Both trade fairs not only appeal to the upholstered furniture industry, but also offer materials and solutions for the automotive, clothing, packaging, construction and medical sectors.

Automated manufacturing

While at Techtextil the furnishing industry was mainly able to find out about new functional properties of high-tech fibres and available ecological materials, at Texprocess they experienced possible solutions for automated production in the textile sector in the light of five micro factories. During the four days of the fair, these mini-factories demonstrated how self-propelled shuttles supply the production stations and how robots not only take over the handling, but also carry out certain processing operations automatically. Individual sewing steps can also be carried out fully automatically in the future.
After cutters have been cutting upholstery fabrics and leather in the upholstered furniture sector for many years, the suppliers have come up with further innovations and further developments. SRME (Italy), for example, exhibited the world's fastest cutter with an acceleration of 1 g and a speed of 120 m/min. At Kuris (Germany), the single layer cutter "Cutty2321" is to achieve an output almost twice as high thanks to its double cutting bridge "Twin Bridge". Bullmer (Germany) presented not only a robot-supported production line but also the industry 4.0 solution "Clouver". Developed by ProCom (Germany), the solution is intended to make processes in the upholstered furniture industry more transparent and production more efficient. For this purpose, the production is linked with its digital image so, that comprehensive data is available for analysis and predictive maintenance. Zünd (Switzerland) exhibited the "S3" cutter, which is equipped with an over-cutter camera (OCC), that makes cutting patterned and digitally printed fabrics as precise and simple as cutting unprinted or plain textiles. The camera captures all registration marks simultaneously. If there are no registration marks, the OCC can also recognize the position of the printed image by means of a frame printed with it. The fabric pattern and any material distortion are also detected automatically. On the basis of reference points, the software automatically calculates the most efficient arrangement or nesting of the cut pieces on the textile web.
Digitalization had also found its way into industrial sewing machines. The new sewing machine generation "M-Typ-Delta" from Dürkopp-Adler (Germany) is networkable and can be connected to the manufacturer's IoT solutions "Quondac". Not only does it make manufacturing processes more transparent,

it also enables international production sites to be monitored across national borders. In addition, the machine guides the user and constantly expands its functions and “knowledge”.

Flexibility through micro-factories

In a mini-factory, the DIHT (German Institutes for Textile and Fiber Research) demonstrated how a robot arm places the cut parts on a self-propelled shuttle and how the vehicle then automatically transports the cut parts to the sewing stations. At the fully automated micro-factory of the RWTH Aachen (Rheinisch-Westfälische Technische Hochschule Aachen/Germany), visitors experienced the embroidery, cutting and sewing of a smart cushion that helps the user to operate different applications through sensor surfaces, light and wireless communication.
At the stand of Expert (Germany), visitors could also experience the digitally supported sorting according to the sewing plan. Thanks to the visually supported beamer projection, cut parts are correctly sorted from the sorting table into the displayed transport containers. A barcode scan identifies the cut part, activates the compartment display of the destination and thus also the quantity display. The information about the correct insertion of the textiles into the correct basket is transmitted to the merchandise management or warehouse management system with the aid of a data glove and the current order status is recorded directly.

Conductive yarns

Techtextil provided a comprehensive overview of the wide range of functional textiles on offer. Decorative and antimicrobial textiles, sound-absorbing elements, smart textiles and lightweight materials were to be found there. With a view to the “Open Spaces”, which describe open office architecture, the exhibitors presented textile acoustic solutions for use in partition walls and office partitions. The fibre manufacturer Trevira (Germany) presented special UV-stable, spundyed filament yarns made of Trevira-CS, as people increasingly spend their leisure time outdoors and outdoor catering is on the increase. Other flame-retardant fibres and yarns as well as cover materials were also on display at the trade fair. The company Ettlin (Germany) presented a novelty under the name “Decolux”: a self-adhesive black fabric which, in combination with a light source behind the fabric, creates three-dimensional light effects. In future, the fabric can also be applied to glass or acrylic surfaces by craftsmen and interior decorators. The conductive yarn “Steel-tech” from Amann (Germany) can be directly incorporated into fabrics and functions as an RFID antenna that records the number of washes, for example. Integrated as a pressure sensor in composite materials, such “intelligent” threads can also be used to record load data.

Sustainability

In addition to functional features, sustainability was an important issue. The exhibitors’ range of products and services ranged from fibres made of recycled polyester and bio-based high-tech textiles to water-saving dyeing and finishing processes. The companies were also stepping up their efforts to ban substances that are harmful to health or cause allergies from their fibres and raw materials. Among other things, Trevira (Germany) presented biopolymer yarns that are recyclable and 100% biodegradable in industrial composting. Filament yarns made from recycled PET bottles were also on display.
Special areas such as the theme area “Urban Living – City of the Future”, which deal with textile products and solutions for increasing urbanisation, offered visitors to both fairs additional information on future topics. Expert presentations at the Techtextil Forum and the Texprocess Forum were also part of the supporting programme of the two trade fairs.
The next Techtextil/Texprocess trade fair double will take place from 4 to 7 May 2021 in Frankfurt (Germany). *Richard Barth*

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Links

- Techtextil
- Texprocess

Downloads

- W_sp0119_Texprocess.pdf