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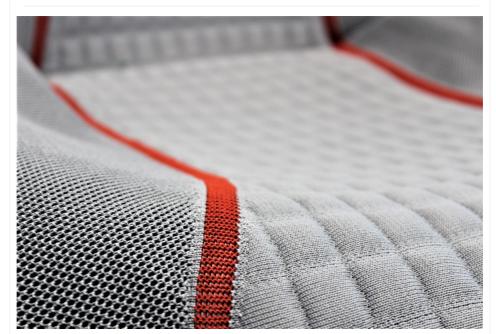
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27th August 2019, Rheinberg

# 3D knitted seat with integrated upholstery

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3D knitted seat with integrated upholstery. © Bache Innovative

Bache Innovative, a flat knitting company, based in Rheinberg, Germany, has developed a 3D knitted seat with integrated upholstery. The special feature of the seat is the combination of different structures and techniques, for  $example, mesh \, structures, in tarsia \, and \, gore \, techniques, as \, well \, as \, a \, we ave-in \, are \, integrated \, in \, one \, product.$ 

The weave-in technique combines the knitting and weaving technology and a polyamide filling thread is inserted between two knitting layers, whereby a targeted padding of individual areas can be achieved. Precise stitch positioning results in a stitch-accurate, knitted quilted seam optic. In addition to inserting filling threads, the process also offers the possibility of inserting electrically conductive threads, which – thanks to the two knitted layer - will not come in contact with the skin.

The company premiered its innovative product at this year's Techtextil in Frankfurt, exhibiting at the show for the first time. "The field of technical knitting has grown more and more in recent years and the flat knitting technology with its variety of shapes and patterns in particular has a great potential. We were able to make many new contacts and had interesting conversations at the fair and our 3D-knitted seat gave many impulses for exciting future projects," said Thorsten Bache, Managing Director.

### Freedom of design

Bache Innovative also showed a prototype with an inlaid copper yarn at the fair, which heats up when electricity is supplied. In the future, the upholstery as well as the seat heating could be knitted directly into the seat cover and used in the automotive, mobility and interior sector, the manufacturer explains.











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Jana Bukolovska

8th March 201

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## 3-5 September 2019

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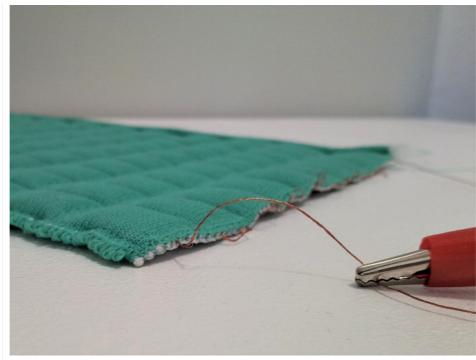
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58th Dornbirn-GFC 2019

#### 11-13 September 2019

Berlin
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In addition to the freedom of design and the combination of different feel and appearances, the 3D knitting technology also offers a sustainable advantage. The seamless knit has no disturbing seams and works according to the zero-waste principle, since the cutting process, as well as a large part of the assembly, are omitted. "The minimisation of the work steps guarantees optimal production processes and lead times and enables a production site in Germany and Europe - so we can continue to guarantee that our products are 100% made in Germany," commented Mr Bache.

#### Offering individual complete solutions

Bache Innovative, headquartered in Rheinberg, emerged from the family-owned company Strick Bache, which has been in its fourth generation since 1927. Equipped with over 20 flat knitting machines of various gauges and latest technologies of the companies Stoll and Shima Seiki, as well as an assembling and finishing department, the company offers individual complete solutions in the area of flat knitting and its portfolio mainly includes the production of seamless products, 3D knits and the development and production of technical knits.

### Bache INNOVATIVE -"tech-knit"



"The innovative power of the company is the development team, consisting of trained textile engineers, who, through their many years of experience as well as an in-depth expertise, are advancing research and development in the field of flat knitting," the company says.

### Other research projects

Bache Innovative is currently working on two research projects from various fields. In the EFRE project *KneTex*, Bache Innovative, together with the University of Applied Sciences Niederrhein, Krefeld and the Institute for Psychophysiology, Düsseldorf, is researching the development of a textile-integrated sensor technology for feedback-supported rehabilitation after surgery of the anterior cruciate ligament.





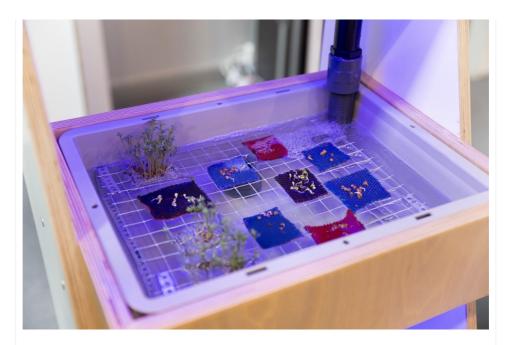












Bache Innovative is developing a wide range of textile substrates based on knitting to be used for farming. © Bache Innovative

The project is intended to significantly reduce the recurrence and complication rate of patients with surgically treated anterior cruciate ligament tear. For the implementation of this innovative approach, various technologies from the field of textile technology, sensor technology and embedded IT are combined with relevant analytical methods and actuators.

With the University of Applied Sciences, Bielefeld, Bache Innovative is also developing a wide range of textile substrates based on knitting and nano-fleeces in the ZIM project *Vertical Farming*, on which in the future crops ranging from marine algae to moss to fruit and vegetable are to be planted.

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