The textile industry consumes large amounts of water and its operating costs can be high. The European Union (EU)-funded project DIGITEX sought to change this. The team helped produce garments using technology evolved from inkjet printing to enable chemicals to be deposited and fixed on textiles in controllable quantities and prescribed locations. The results? Cleaner and more efficient production methods as well as textiles that are lightweight, comfortable, strong and protective.

The DIGITEX project team used technology that enables fabrics and garments to be digitally printed and finished. The application of different fluids or chemicals to the textiles gives the fabric multiple functionalities and performance characteristics that were previously not possible. Moreover, according to experts, the technology is expected to result in a new generation of smart textiles being launched on the market.

“Just as an inkjet printer can apply numerous colours based on digital commands, digital inkjet technology is being adapted to textile printing and finishing,” says project coordinator Gerrit Koele from TenCate in the Netherlands, who works closely together with industrial inkjet solution provider Xennia in the United Kingdom. “This breakthrough means we can apply multiple layers of substances with different functionalities and create multifunctional textiles,” he adds.

This innovative method of digital printing and coating textiles takes place at atmospheric conditions and controlled room temperature – an improvement compared to the previous wet and hot environments.

The technology is also fast and reliable, which is expected to increase the competitiveness of the European textile industry. In addition, its eco-friendly approach means a significant reduction in environmental impact and energy costs, thus contributing to a clean manufacturing industry.
After almost 10 years of research and technological development, the digital inkjet machine of TenCate Protective & Outdoor Fabrics was launched in July 2013. The machine supplies garment makers with an extensive range of top-quality and technologically advanced fabrics that form the basis for protective clothing. It is seen as an historic transition from analogue printing, which uses images on plates to transfer ink on to fabric.

Experts forecast that developments in digital inkjet platforms would further increase the speed and flexibility of textile finishing, opening the door to more and more applications, to on-demand delivery as well as mass customisation.

Related Documents:
DIGITEX leaflet [2]
See also:
CORDIS [3]
Project:
Digital Programmed Jetting of Fluids for Multifunctional protective Textiles
Project Acronym:
DIGITEX


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