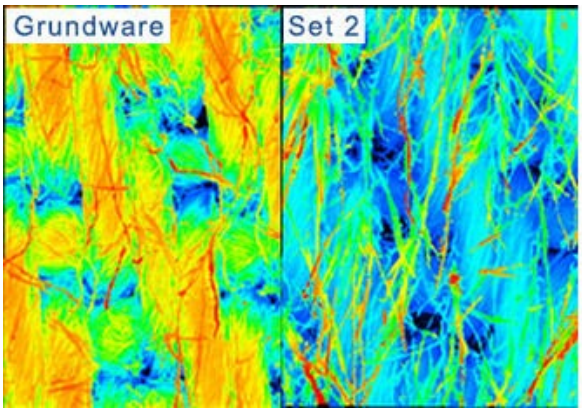

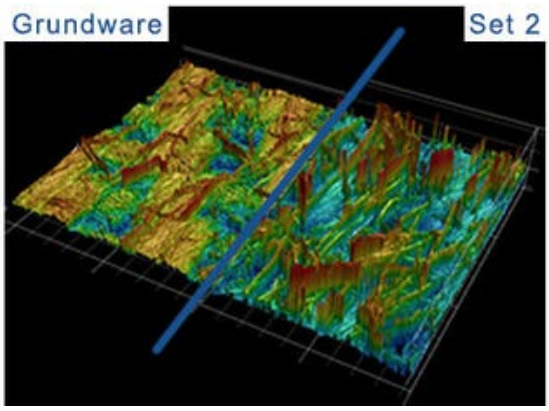

HapTex 4.0 - Development of a roughness-guided continuous quality and surface control in the dry finishing of textiles by means of a haptic sensor that can be widely used in the textile industry. Partial project: Realization of a new evaluation scale for the grip assessment of textiles based on measurement data from a haptic sensor for implementation in virtual product development processes

The overall project addresses the development of an evaluated measuring system for the continuous in-situ determination of the surface properties of a textile under production conditions to ensure the intended pleasant feel and wearing sensation for the user. In a sustainable emerizing process using a diamond-coated emerizing belt, the product quality is to be monitored online with the help of continuous measurement data acquisition of surface roughness (quality assurance and reduction of textile waste).

Divided into sub-projects, the project comprises the development of a piezoelectric-based sensor system using structure-borne sound measurement from friction in the textile-sensor contact and its integration into the mechanical textile finishing process at relevant points, including supplementary moisture and temperature sensors. This requires interfaces for machine communication and control as well as easy-to-understand evaluation software that can display the surface properties of the treated textile in a user-friendly way.

The sensor data should allow a quantitative evaluation of the grip properties of the finished textile according to a new standard, e.g. for digital communication exchange. The limits and possibilities for the qualitative and objective description of textile properties will be investigated and evaluated for selected textile products and areas of application.

Duration

18 Month (01.07.2022 – 30.12.2023) after extension

Project consortium

QASS GmbH, Wetter (sensor measurement systems, quality assurance, component testing) | Matchpoint Textilmaschinenbau Deutschland GmbH, Mönchengladbach (dry textile finishing, emerizing technology) | Research Institute for Textiles and Clothing at Niederrhein University of Applied Sciences (FTB), Mönchengladbach

Acjnowledgement

The ZIM cooperation project (KK5163009KU1) is funded by the Federal Ministry of Economics and Climate Protection (BMWK) on the basis of a decision by the German Bundestag.

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