Development of a bio-based and interactive car interior with a user-centred design

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Motivation

The ongoing problems of climate change and environmental pollution require a shift to more green production or use of sustainable materials to achieve the United Nations’ sustainable development goals. As a result, the automotive industry is undergoing technological change with the trend towards increasing electrification and sustainable mobility. This project follows this trend with the aim of developing new interactive, bio-based surfaces by creating a product personality that addresses the environmentally conscious car customer. On the one hand this should ensure more sustainable use of resources and on the other hand reduce the complexity of the user interfaces in the car interior.

User-friendliness & Product personality

Design of intuitive interfaces that communicate sustainability through green design cues

Bio-based materials

Materials identification with regard to their perceptible sustainable properties

Following materials were ranked by 15 subjects as the most natural:

1. Cork
2. Structural wood
3. Composite flax, hemp, sisal, epoxy resin
4. Tree bark fleece
5. Wovenfelt, pure wool

Textile Switches

Printed and embroidered switches and conductor tracks

The textile surfaces become an interface with switch function. These will be integrated into the in-vehicle infotainment.

Summary

In this project, textile-based sensors and circuits will be integrated into a driving simulator that works with CAN-Bus technology commonly used in the automotive industry. These technological aspects are integrated into the work that develops an innovative operational design for less complex operational controls in an interior that is perceived as sustainable.

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