GENUINE LEATHER USER INTERFACE ENABLES A NOVEL CONTROL PANEL FOR THE AUTOMOTIVE INDUSTRY

NOVEL INPUT INTERFACES WITH FUNCTIONALIZED, SMART LEATHER SURFACES CAN BE INTEGRATED INTO VEHICLE INTERIORS AND ALLOW FOR NOVEL AND INTUITIVE USER INTERACTION.

In addition to known technology and environmental aspects such as cost-effectiveness, weight and energy savings and processability, user perception also design and cultural aspects must also be taken into account in future product development considerations. One example of an industry that has been dealing with this trend shift for some time and is addressing new megatrends is the automotive industry.

Aesthetics, functionality, user perception and classic "conventional advantages" must be taken into account when designing future interiors. Even if this vision is currently becoming reality for a large number of future markets, it is very important for the automotive (supplier) industry (which continues to be a strong economic factor in Europe) to adapt to these trends in good time in order to maintain its leading position in international competition. Therefore, a pro-competitive and sustainable development of novel technologies can ensure weight savings, increased safety and sustainability in the final application. The resulting products offer new functionalities with creative designs and thus provide decisive benefit for companies that address those trends.

In the Smart@Surface project, a novel input unit was integrated into a car door. This is based on wafer-thin, pressure-sensitive piezoelectric polymer sensors,
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which are applied to leather using a screen printing process. Due to the wafer-thin sensor construction, Wollsdorf Leder can still designate the resulting component as genuine leather.

Impact and effects

However, the best technological solution will not increase the competitiveness of European industry without sufficient customer acceptance. Therefore, the further development of novel and creative concepts is essential for future-relevant developments that lead to innovative and ambitious future products with novel sensory surfaces.

There are a number of notable advantages of design-driven form electronics in smart surfaces compared to the assembly of mechanical switches. The innovation potential of Smart@Surface is based on the combination of sensory, lighting and feedback technologies. Premium surfaces with high aesthetics and ergonomics, e.g. Leather in combination with those technologies allow for the realization of innovative and intuitive user interaction-devices. These functionalized surfaces offer a seamless integration of the sensors, allow creative designs and extend the original functionality of the raw material many times over.

The Smart@Surface project will also have a strong impact on industrial manufacturing processes, as assembly times, material waste and the weight of the new product can be drastically reduced.

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