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Automotive Smart Surface Industry Research Report, 2022

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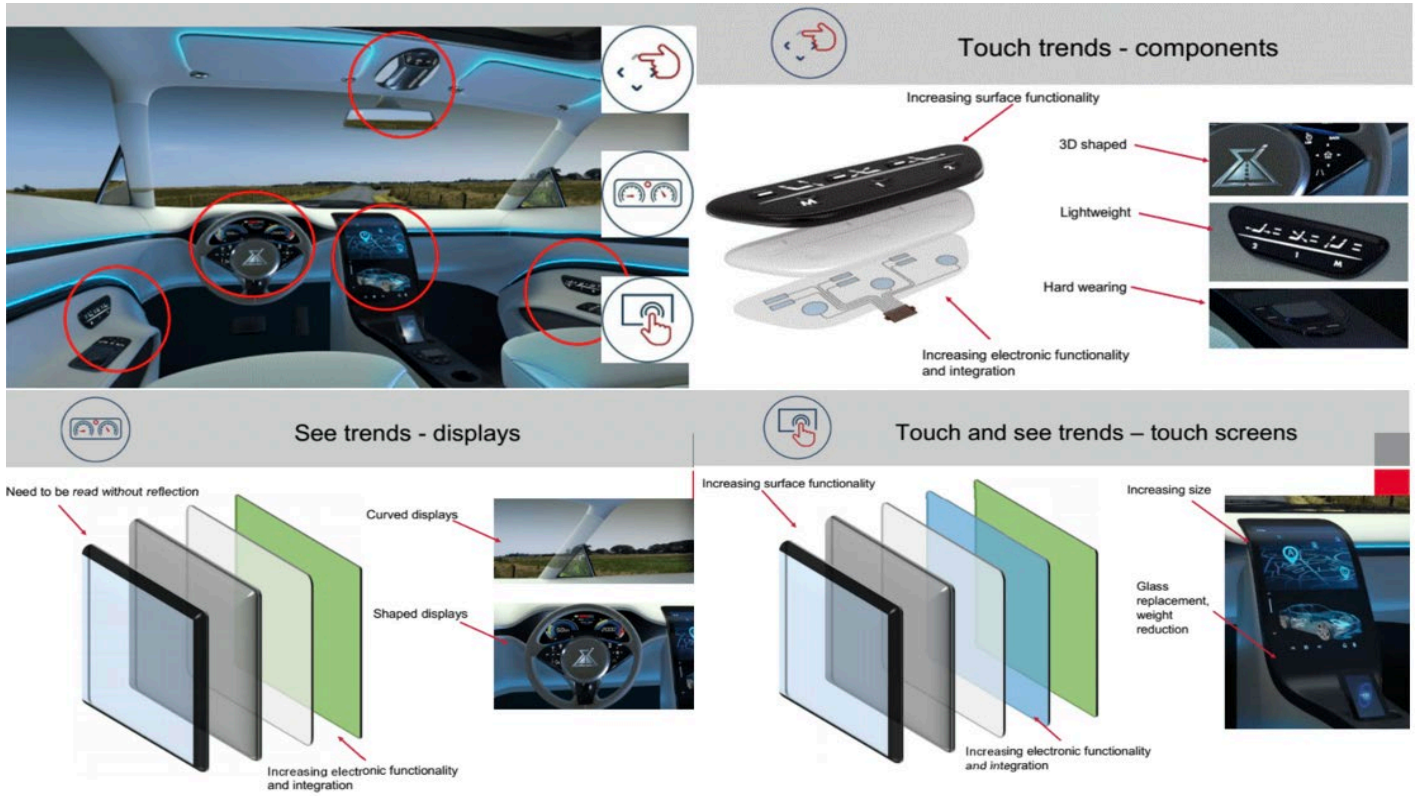
Smart Surface Research: As an important medium for multimodal interaction, smart surfaces lead the trend of smart cockpits.

Smart surfaces represent the development trend of automotive interiors and exteriors.

Smart surfaces represent the development trend of automotive interiors and exteriors, as an important part of smart cockpits and a crucial medium of multi-modal interaction. On center consoles, steering wheels, doors, windows and other automotive interior parts, smart surfaces upgrade traditional interactive media such as buttons or knobs in traditional automotive interiors to touch interactive media made of surface materials such as plastic or fabric.

Application of Automotive Smart Surfaces



Source: MEIS

Advantages of Automotive Smart Surfaces

Compared with traditional automotive interiors, smart surfaces feature lightweight, intelligence and functionality.

Lightweight: The weight is reduced by 60%-80%, the thickness is cut by 90%, the PCBA area drops by 25%, and the number of parts is slashed by 95%.

Intelligence: The integration of intelligent components such as electronic switches, lighting, and sensors provides a medium for multimodal interactions.

Functionality: With more design freedom and higher functional integration, smart surfaces can provide more functions for drivers and passengers in a more convenient way.

Advantages of Automotive Smart Surfaces

Source: ResearchInChina

Professional IME enterprises and Tier1 interior enterprises jointly promote the development of automotive smart surfaces

In-Mold Electronics is the main smart surface technology at present, featuring excellent bending and tensile properties, supporting 3D molding, requiring no new molds and enabling more free modeling design. Moreover, environmentally friendly and economical printed conductive ink solutions can meet the growing demand for model facelifts.

At present, there are not many companies that focus on automotive IME technology. Most companies take into account consumer electronics or industrial electronic components, such as Tactotek, Canatu, Sekisui, Kurz, e2ip, etc. At the same time, most automotive interior Tier1 companies are paying more and more attention to the application and development of smart surface components.

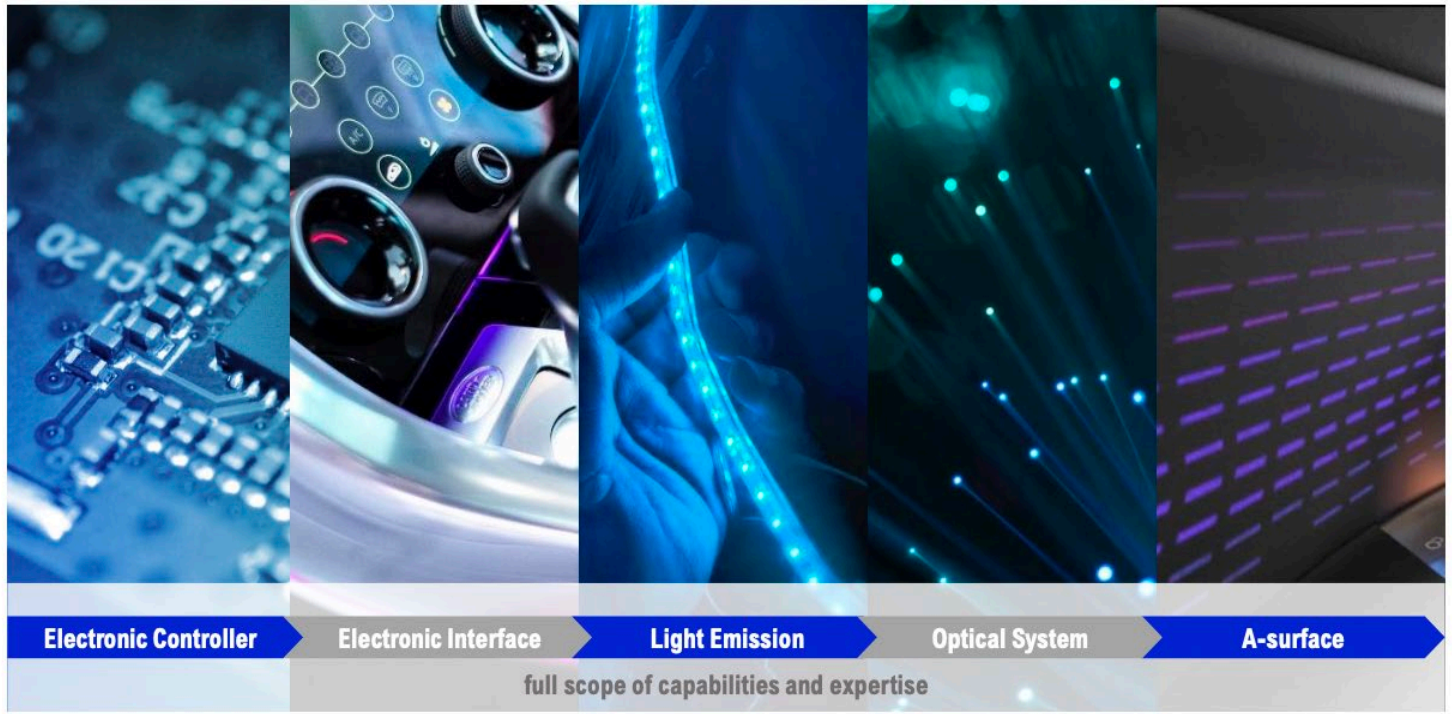
Automotive Smart Surface Industry Chain

Source: ResearchInChina

FORVIA’s Interiors with Smart Surfaces

Faurecia envisions the cockpit of the future as a multifunctional, connected and intelligent space. The smart surface developed by Faurecia draws on the Group's experience in many professional fields: cockpit architecture, system integration, kinematics and mechatronics. In 2021, Faurecia and Immersion announced a multi-year license agreement, providing Faurecia with access to Immersion's patented technology as well as haptic technology solutions for automotive touch screens and control systems. In 2022, Faurecia completed the acquisition of Hella, and named the newly combined Group “FORVIA”. Smart surface products will also integrate more smart lighting functions.

FORVIA's Interiors with Smart Surfaces

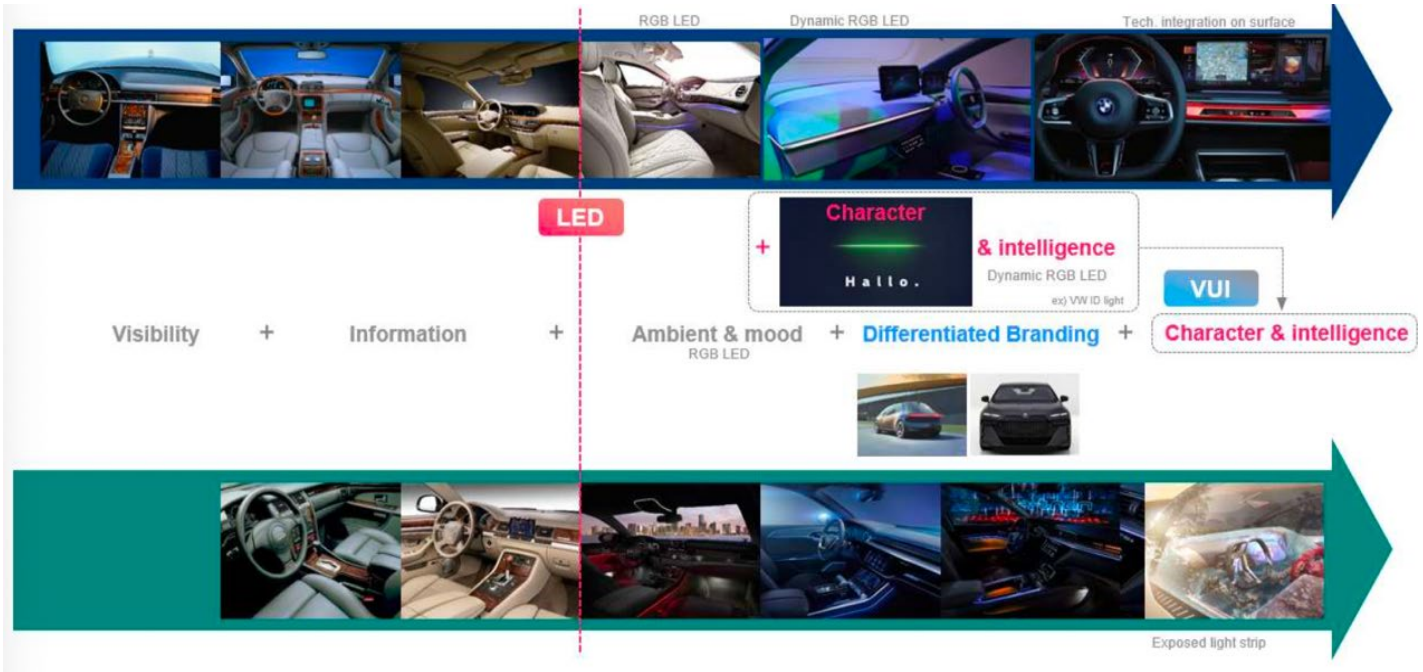


Source: FORVIA

The smart interior surface being developed by Yanfeng Automotive Interiors (YFAI) combines automotive interior aesthetics with HMI technology, and seamlessly integrates control, information display, lighting and heating onto the same surface. In February, 2020, Yanfeng demonstrated its latest smart surface technology through a "smart surface model" which includes seven HMIs and is seamlessly integrated on various interior surfaces.

In March, 2022, Yanfeng and SemsoTec signed a Memorandum of Understanding (MOU) for collaboration in display and sensor technologies, components and products for automotive application. The cooperation between the two parties aims to accelerate the seamless integration of HMI onto all interior surfaces of future cars, thereby offering unique in-car user experience.

Yanfeng's Smart Surface Products



Source: Yanfeng

More and more OEMs apply smart surfaces to smart cockpits of both luxury cars and entry-level cars. Touch center consoles, touch door control modules and touch window control modules are very common, and even touch modules appear on steering wheels.

In Porsche's new interactive interface design, the 8.4-inch inclined screen at the lower part of the center console mainly displays the power, charging status, air conditioning control, writing pad, etc., with tactile feedback and error-proof operation functions.

Porsche Taycan’s Interiors with Smart Surfaces

Source: XCAR

Li L9’s Interiors with Smart Surfaces

Li L9 cancels the cluster in front of the driver, and instead adds a small TouchBar above the steering wheel. The combination of 5-screen touch control, 6 microphones, 3D ToF sensors, and the multi-modal 3D interactive technology developed by Li Auto based on deep learning exalts the audio-visual and entertainment experience of the smart car to a new level.

Li L9’s Interiors with Smart Surfaces

Source: hexun.com

In order to embody a sense of science and technology and a simple design style, WM M7 not only removes all physical buttons, but also creates a touch gearshift mode integrated into the steering wheel. WM's "i-Surf Technology Skin" adopts superfine blended knitting technology, so that the texture feels like wool blend. At the same time, it features transparency. Combined with a flexible screen, it supports custom text or pictures.

WM M7’s Interiors with Smart Surfaces

Source: WM Motor

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