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Press release

LOPEC 2024: Printed electronics for the mobility transition

- **Focus topic Mobility with numerous examples of applications**
- **Innovative safety features and efficient heating concepts**
- **Electric vehicles: more powerful batteries thanks to integrated sensors**

How to achieve sustainable mobility: LOPEC, the world's leading exhibition and conference for flexible, organic and printed electronics, will be showcasing numerous applications of printed electronics for the transport sector under the focus topic of Mobility from March 5 to 7, 2024 in Munich.

From battery monitoring in electric vehicles to safety features for autonomous driving: Printed electronics is driving innovation in the automotive sector. "The technology is already an integral part of vehicle construction today and is indispensable for the mobility of the next generation," says Wolfgang Mildner, General Chair of LOPEC and CEO of the consulting and technology company MSWtech. Printed electronics devices are so flexible and thin that they can be integrated seamlessly into any object or surface. Thanks to their compactness, they also help to reduce the weight of vehicles. "There are many arguments for the use of printed electronics in automotive engineering. That's why we see more and more successful applications at LOPEC every year," emphasizes Mildner. Established examples include seat occupancy sensors for airbag control, surfaces with touch functions as an alternative to mechanical buttons and innovative lighting and heating concepts.

The emphasis is on greater safety and comfort when driving. LOPEC exhibitor Henkel, for example, offers inks with overheating protection for printed seat

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heaters. The composition of the ink can be used to set a maximum temperature so that the seat heating switches off automatically at 60 degrees Celsius, for example. The technology is also suitable for safely heating the interior of electric vehicles, as new concepts are required here due to the lack of waste heat from the engine. LOPEC exhibitor InnovationLab therefore recommends printed heating elements not only for seats, but also for steering wheels, armrests and other surfaces close to the body. InnovationLab will soon be using transparent printed heating elements to protect windscreens and headlights from icing and fogging. Backlit heating elements in the interior are also possible.

Focus on e-mobility and autonomous driving

Printed heating foils can also be used to preheat the battery in the electric vehicle to increase its performance and service life. As the pressure conditions in the battery pack are also crucial for this, InnovationLab has developed a battery monitoring system consisting of printed temperature and pressure sensors. It records the conditions in the cells and supports battery optimization. The batteries work best when all cells have the same voltage. This is where LOPEC exhibitor IEE comes into play with its battery balancing. The company offers complete solutions consisting of printed sensors and other components that monitor the voltage level of the many cells and balance the charge. IEE's portfolio also includes battery safety sensors that detect imminent overheating or other dangerous battery conditions early enough. Hands-on/off detection (HOD) from IEE, on the other hand, is a must for autonomous driving. A printed multi-zone sensor detects whether the driver has a firm grip on the steering wheel or is only touching it lightly or not at all. This information is crucial for safely switching from automated to manual driving mode.

Innovation driver in many industries

As a key and cross-sectional technology, printed electronics acts as a booster in many industries. "Representatives from a wide range of industries meet at LOPEC and inspire each other," emphasizes LOPEC Exhibition Director Armin Wittmann. Exhibitor E Ink, for example, is now entering a new market with the automotive industry. The company's electronic paper has so far mainly been

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used in e-readers but is also an ideal solution for self-tinting windows, digital signage, electric license plates and car bodywork that changes color and pattern at the touch of a button. “Printed electronics expands both the technical possibilities and the creative scope. This makes the technology unbeatable in many sectors of the economy,” summarizes Wolfgang Mildner. LOPEC provides cross-industry information about the products and potential of printed electronics along the entire value chain.

The next LOPEC takes place in Munich from March 5-7, 2024 (exhibition: March 6 and 7, 2024). You can find the preliminary list of exhibitors [here](#).

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LOPEC

LOPEC (Large-area, Organic & Printed Electronics Convention) is the world’s leading event for printed electronics. The combination of exhibition and conference covers the complexity and dynamism of this young industry perfectly. LOPEC is organized jointly by the OE-A (Organic and Printed Electronics Association) and Messe München GmbH. The next event will take place from March 5-7, 2024, at the ICM – Internationales Congress Center München. www.lopec.com

Messe München

As one of the world’s leading trade fair organizers, Messe München presents the world of tomorrow at its more than 80 trade fairs worldwide. These include eleven of the world’s leading trade fairs such as bauma, BAU, IFAT, electronica, and ISPO. Messe München’s portfolio comprises trade fairs for capital and consumer goods, as well as for new technologies. Together with its subsidiaries, it organizes trade fairs in China, India, Brazil, South Africa, Turkey, Singapore, Vietnam, Hong Kong, Thailand, and the U.S. With a network of more than 15 affiliated companies and almost 70 representations worldwide, Messe München is active in more than 130 countries. The more than 150 events held annually attract around 50,000 exhibitors and around three million visitors in Germany and abroad.

OE-A

The OE-A (Organic and Printed Electronics Association) is the world’s leading industrial association for flexible, organic and printed electronics. It represents the entire value chain of this industry. Its members are world-leading companies and institutions, from research and development institutes to, mechanical engineers and material manufacturers to producers and end users. More than 200 companies from Europe, Asia, North America, and Africa work together in the OE-A to further advance the development of a competitive infrastructure for the production of flexible and printed electronics. OE-A is an international working group within VDMA. www.oe-a.org