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Munich, December 12, 2019

Press Release

Printed electronics: More safety and comfort in automobiles

- The automotive industry relies on printed electronics
- The success story of seat occupancy sensors and heating
- E-mobility and autonomous driving are advancing developments with the help of printed electronics

Whether e-mobility or autonomous driving: In times of change, the automotive industry relies on printed electronics. From March 24 to 26, 2020, LOPEC, the International Exhibition and Conference for the Printed Electronics Industry in Munich, will be providing information on innovative concepts for the automotive industry.

The electronic control systems including several miles of cables that are installed in a premium car weigh about 550 pounds. An end to this is now in sight because the automotive industry is increasingly relying on printed electronics. “Printing processes can be used to manufacture sensors and many other electronic components, some of which are thinner than a tenth of a millimeter,” emphasizes Dr. Alain Schumacher, CTO of IEE Luxembourg, Vice Chairman OE-A Europe, and speaker at the 2020 LOPEC Conference.

IEE has evolved from a three-person start-up to one of the market leaders for printed sensor technology in the automotive industry. “In research, development and production, we have relied on printed electronics right from the start,” says Schumacher. In his plenary lecture at the LOPEC Conference, he will discuss the success story of IEE and the diverse applications of printed electronics.

“Printed electronics can be placed in the immediate vicinity of or even exactly where they are needed in the car,” emphasizes Schumacher. There is no need for time-consuming cabling and there are hardly any limits to the design, as, due to their properties— thin, lightweight, flexible, stretchable and transparent—, printed electronics can be integrated into surfaces and components of almost any shape. Another advantage is the cost-efficient production with printing processes suitable for volume production. The range of inks, pastes and carrier materials required for this has been expanded enormously over the recent years. In addition to manufacturers and users of printed electronics, material developers and plant manufacturers will be presenting their innovations at LOPEC.

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The success story of printed electronics in the automotive industry continues

The automotive industry already uses printed electronics as standard, for example in systems reminding people to fasten their seat belts or controlling the deployment of airbags. Printed seat occupancy sensors are integrated in the seat surface and generate an electric signal when deformed. “The technology was originally developed to ensure that an airbag is deployed only when someone is actually sitting in the seat,” explains Schumacher. Meanwhile, the sensors even detect child seats and, via integrated antennas, can detect the direction in which a baby seat has been installed.

Seat heaters printed on film with conductive inks also make vehicles safer and more comfortable at the same time. They offer several advantages over the previously common filaments: They are easier to integrate into car seats, warm more evenly and save energy. What is more: “The maximum temperature can be determined through the composition of the ink. Dangerous overheating is thus made impossible,” explains Schumacher. The heating films are now to be increasingly used in electric cars, as their motors do not produce any significant waste heat for a heat exchanger. Heating films in side panels and other surfaces solve this problem.

With the trend towards autonomous driving, the interior of vehicles is changing fundamentally anyway, because drivers hardly have to concentrate on traffic anymore. The interior is therefore intended to provide relaxation at times and an office environment at others. The visions range from sensor-controlled OLEDs for individual lighting concepts to flexible displays to 3D cinema. There is no way around printed electronics for reasons of weight and space, but above all because they are easy to integrate.

There is no better place than LOPEC in Munich to learn about what is already technically feasible today and what potential printed electronics has in the automotive sector and other sectors.

Service

Further information and background data can be found at www.lopec.com. Image material is available from the [media database](#). All contributions from LOPEC TV can be found on our [webpage](#) as well as in the [media library](#).

LOPEC

LOPEC (Large-area, Organic & Printed Electronics Convention) is the leading international event for printed electronics. The combination of an exhibition and a conference is the perfect way to depict the complex and dynamic nature of this young industry. More than 2,700 participants from 44 countries attended the event in 2019. There were 163 exhibitors from 19 countries, and more than 200 conference presentations from 25 countries. LOPEC is organized jointly by the OE-A (Organic and Printed Electronics Association) and Messe München GmbH. The next event takes

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place from March 24 to 26, 2020 at the ICM – Internationales Congress Center München in Munich, Germany. www.lopec.com

Messe München

Messe München is one of the leading exhibition organizers worldwide with more than 50 of its own trade shows for capital goods, consumer goods and new technologies. Every year, a total of over 50,000 exhibitors and around three million visitors take part in more than 200 events at the exhibition center in Munich, at the ICM – Internationales Congress Center München and the MOC Veranstaltungszentrum München as well as abroad. Together with its subsidiary companies, Messe München organizes trade shows in China, India, Brazil, Russia, Turkey, South Africa, Nigeria, Vietnam and Iran. With a network of associated companies in Europe, Asia, Africa and South America as well as around 70 representations abroad for over 100 countries, Messe München has a global presence.

OE-A

The OE-A (Organic and Printed Electronics Association) was founded in December 2004 and is the leading international industry association for organic and printed electronics. The OE-A represents the entire value chain of this industry. The members are world-class global companies and institutions, ranging from R&D institutes, mechanical engineering companies and material suppliers to producers and end-users. Well over 200 companies from Europe, Asia, North America, South America, Africa and Oceania are working together to promote the establishment of a competitive production infrastructure for organic and printed electronics. The OE-A is building a bridge between science, technology and application. The OE-A is a working group within VDMA. www.oe-a.org.