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Press Release

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LOPEC 2019 in Munich

3D Structural Electronics: A new dimension of mobility

Whether it is sensors, lights or displays: More and more electronic components in the automotive sector are being printed. And there are no limits to the design. From March 19 to 21, 2019 LOPEC in Munich will provide information about new developments and trends on the market for printed electronics. One focus of the international exhibition and the accompanying conference will be on applications in the automotive industry.

Vehicle construction is developing into one of the largest markets for flexible and printed electronics. Market research institutes are forecasting a strong increase in market volume for the sector over the coming years. LOPEC 2019 picks up on that trend and focuses on the automotive industry. “The industry is on the verge of change,” says Ashutosh Tomar, Principal Engineer Technology Strategy at Jaguar Land Rover, “the vehicles of tomorrow must meet an increasing amount of demands.” In the course of the development of alternative drives and autonomous vehicles, printed electronics play a key role in ensuring the high demands on safety and comfort.

More than 100 sensors are already installed in today’s automobiles. This number is going to become even higher in the future. Further features are data processing and control elements, displays and numerous other hardware components. With conventional electrical components and their cabling, there is hardly any room left in the vehicle interior for the occupants, Tomar points out. At LOPEC, exhibitors from all over the world will present innovations to solve this problem: Electronic components that are so thin and flexible, often transparent, that they can be integrated into side panels, seat covers and windows, in steering wheels, dashboards and other elements of any shape.

Injection molding, thermoforming or 3D printing?

“Sensors, lighting, data processing—all this must come together in modern user interfaces. Printed electronics are the best option to realize this integration,” emphasizes Wolfgang Mildner, owner of the consulting and technology company MSWtech and General Chair of the LOPEC Conference.

Dashboards with integrated electronics are already mass-produced by injection molding. The process for these so-called ‘in-mold electronics’ involves printed sensors and other elements being embedded by the manufacturers into the plastic surface during injection molding. Thermoforming of plastic materials, also known as deep-drawing, is also suitable for the integration of prefabricated printed electronic components. Thanks to the ongoing development of conductive printing inks and pastes, 3D printing is another option for the production of functional components with integrated electronics.

“The automotive industry is currently in intense discussions about which technology is best suited for which purpose,” explains Mildner. The prerequisite for injection molding and thermoforming is that printed electronics can withstand the temperatures and mechanical stresses during molding. 3D printing, on the other hand, is currently rather used for the production of small quantities and individualized components.

At LOPEC, company representatives and scientists will speak about their experiences with the production of printed electronics in 3D. This includes, for example, a Technical Conference session on “3D Structural Electronics” as part of the LOPEC Conference. Moreover, Professor Dr. Reinhard Baumann of the Fraunhofer Institute for Electronic Nano Systems in Chemnitz will introduce the project “Go beyond 4.0” in a keynote during the Plenary Session. Six Fraunhofer Institutes from the research network are investigating how small series and unique specimens can be produced cost-effectively under mass production conditions. One demonstrator of the project is a smart car door with integrated printed electronic structures.

More freedom in design

The fact that printed electronics can be used to create functional surfaces without buttons, knobs and cables is particularly pleasing to car designers. Their

creative freedom is one of the focal points of the LOPEC panel discussion on Wednesday afternoon, 20 March, titled “3D structural electronics and the future of automotive design”.

Since both the driving experience and the outside world retreat into the background in an autonomous car, the interior is gaining in importance and is increasingly becoming a selling point. In the future, passengers will use travel time to work or relax. Individually adjustable interior lighting, combined with sensor-controlled shading in case of strong sunlight, is intended to provide the appropriate atmosphere. In addition, the number of displays in the vehicle interior will continue to increase. They not only replace conventional displays, but in autonomous vehicles they also serve as a human-machine interface and, above all, for infotainment. Car manufacturers want to implement both innovative lighting and meet the increasing demand for displays with printed organic light-emitting diodes (OLEDs). With the flexible, flat and extremely energy-efficient OLEDs, the interior can be virtually wallpapered.

There is no longer any doubt about the unabated success of printed electronics in vehicle construction. “Printed electronics are already being used in the automotive industry, and many developments are about to go into series production,” emphasizes Mildner, inviting all those interested to learn about the latest developments and, at the same time, be inspired. Thanks to the combination of international exhibition and conference, which is divided into the blocks business, technology and science, LOPEC provides more comprehensive and cross-industry information across the entire value chain of printed electronics than any other event. Tomar sums it up: “LOPEC is a one-stop shop for creativity and the realization of ideas.”

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. In the download section, original recordings from LOPEC in broadcast quality are made available to you free of charge.

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. Around 2,500 participants from 51 countries attended the event in 2018. There were 153 exhibitors from 21 countries, and 188 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 place from March 19 to 21, 2019 at the ICM – Internationales Congress Center München in Munich, Germany.
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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 Veranstaltungscenter 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.
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