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Press Release

Printed electronics meets haute couture

Wearable technology is a growth market that encompasses more than just the sports and healthcare sectors. More and more fashion designers are including printed electronic elements into their collections. Smart clothing is another topic at LOPEC, the International Exhibition and Conference for the Printed Electronics Industry, which is taking place in Munich, Germany, from March 13 to 15, 2018.

Dresses lighting up to the rhythm of breathing and sweaters embracing you via mobile phone signal: Printed electronics revolutionizes fashion design and makes our outfit interactive. “Light-emitting diodes, sensors and other components for garments must not only be extremely thin and light but also stretchable and washable. This is a very interesting field of application for printed electronics,” emphasizes Dr. Klaus Hecker, Managing Director of OE-A (Organic and Printed Electronics Association) and co-organizer of the annual LOPEC. From March 13 to 15, the leading international exhibition for printed electronics will also specifically address the fashion industry. Smart textiles have been a trend in the sports and health sector for quite some time.

[Cutecircuit](#) from London, a pioneer in the field of electronic fashion, will present its technology in a plenary lecture at the [LOPEC Conference](#). Among other things, the company has designed an evening dress with over 10,000 integrated light-emitting diodes that show animated images on the flowing fabric. Wearable electronics can, however, do much more than just blink in different colors. It lends our clothing functions that could not be implemented with any other technology. One example is the Soundshirt from Cutecircuit. It was designed for deaf people and lets them “feel” concerts. There are 16 micro-actuators embedded in the fabric that translate sounds into vibrations – violins, for example, can be felt on the arm, drums in the back. Similarly, the Hug Shirt™

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works by gently hugging the wearer when a person sends a hug signal to the shirt via mobile phone.

The question remains how durable the smart clothes are. “In recent years, materials researchers have been able to significantly increase both the machine washability of the electronic components as well as their general resilience,” says Hecker. Researchers at the Dutch [Holst Centre](#), for instance, have developed textiles with integrated electronics that survive up to 100,000 stretching cycles and more than 25 washing and drying cycles without any damage. The LOPEC Conference is also dedicated to this topic: During his presentation, Professor Takao Someya from Tokyo University, member of the Scientific Board of LOPEC, will talk about conductive silver pastes that can be expanded fivefold.

As LOPEC reflects the entire value chain of printed electronics, equipment manufacturers from Germany and abroad with their latest technologies will also be represented in Munich. The electronic components are printed either directly on the fabric or on thin films that can be laminated onto the textile. In the future, the fabrics could even consist entirely of conductive materials. Cutecircuit has designed a "little black dress" out of the miracle material graphene, a light and yet extremely sturdy carbon material with an extraordinarily high electrical conductivity. The highlight: Sensors that are integrated into the garment record the wearer's breathing pattern, a microprocessor analyzes the data and changes the color of integrated LEDs depending on the depth of the breaths.

These examples show: When two industries as different as the electronics industry and the world of fashion merge, unexpected things become possible. Hecker emphasizes: “In order for an idea to be successfully translated into a product that is suitable for everyday use, material developers, equipment suppliers, designers and manufacturers must work closely together from the very beginning.” LOPEC offers all of them the ideal forum.

More information about LOPEC is available at: www.lopec.com

General [photos & logos](#) of the event in print quality and [film material](#) are available free of charge.

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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. 2,585 participants from 50 countries attended the event in 2017. There were 154 exhibitors from 17 countries, and 182 conference presentations from 22 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 13 to 15, 2018 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