



Press Release

March 21, 2017

Next-Generation Materials Enable Smart Health Devices and Structural 3D Electronics

Henkel to Showcase Material Sets for Smart Health Patches and In-Mold Electronics at LOPEC 2017

Düsseldorf, Germany – From Hall B0, Booth 401 at the upcoming LOPEC printed electronics show (www.lopec.com), Henkel Adhesive Electronics group (www.henkel-adhesives.com/electronics) will showcase some of the industry's most impressive innovations in comprehensive material sets for printed electronics applications. Among the material leader's latest breakthroughs are advanced formulations that support smart health technology and medical devices, as well as products that facilitate in-mold electronic applications.

The Future of Health Optimization and Medical Diagnostics

Henkel's contributions to medical electronics are well-documented and its most recent developments are poised to deliver 'smart' technology to the healthcare sector, providing real-time, wirelessly-accessible data for a variety of human vital signs.

At the foundation of the Henkel material set is a Loctite conductive electrode ink, which is contained in a disposable patch on which a skin-compatible, pressure-sensitive adhesive is used to adhere the device to the skin. The second part of the smart health patch contains a printed circuit board (PCB). The protection of the PCB-containing side of the patch from environmental influences is facilitated with Henkel conformal coating materials and [Technomelt](#) hot melt low pressure molding materials. The result is a functional device that measures heart rate and reports it via any wireless-enabled device (smart phone, tablet, laptop, etc.), eliminating cumbersome cables and control boxes. The smart patch can be worn and re-used for several days, after which only the electrode portion requires disposal. A new electrode patch can be re-applied to the enclosed PCB portion of the device for



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continued use. The technology has broad application for measurement of numerous types of body functions.

Integrating Form and Function with Structural 3D Electronics

The future of modern, functional design is taking shape with Henkel's portfolio of materials for in-mold electronics, which will also be on display at LOPEC on the Henkel booth. With this technology, thermoformable conductive inks have the ability to enable electronics functionality to be embedded directly into plastics and molding materials, thereby eliminating the need for conventional switches, buttons and wires. Use of this novel technology has appeal in many market sectors.

For applications within automotive dashboards, for example, functionality such as temperature, in-cabin lighting and audio control can be embedded in the dashboard material itself and adjusted by touch. This integration vastly reduces weight, which is an important consideration in modern automobile design and manufacture. Similarly, common household electronics like washing machines can now incorporate electronic capability into the product structure and do away with protruding knobs and dials.

Henkel's solution for in-mold electronics is a holistic, compatible material set that includes advanced Loctite thermoformable conductive inks, conductive adhesives, solder pastes and Technomelt low pressure molding materials.

Technology in Practice

LOPEC show delegates are invited to visit Henkel in Hall B0, Booth 401 to see product samples that highlight these latest materials breakthroughs. The smart health patches, developed in cooperation with the Holst Centre (<https://www.holstcentre.com/>), will also be part of a live demonstration, with Henkel staff wearing the devices throughout the two-day exhibition, while monitors in the booth display the real-time cardio data.

To schedule a meeting with a Henkel technical specialist during LOPEC, send an e-mail to electronics@henkel.com. For more information on Henkel's advanced printed electronics solutions, visit www.henkel-adhesives.com/electronics.



About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2016, Henkel reported sales of 18.7 billion euros, adjusted operating profit of 3.2 billion euros. Its three top brands, Persil (detergent), Schwarzkopf (hair care) and Loctite (adhesive) generated more than 6 billion euros in combined sales. Henkel employs more than 50,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com

Photo material is available at <http://www.henkel.com/press>

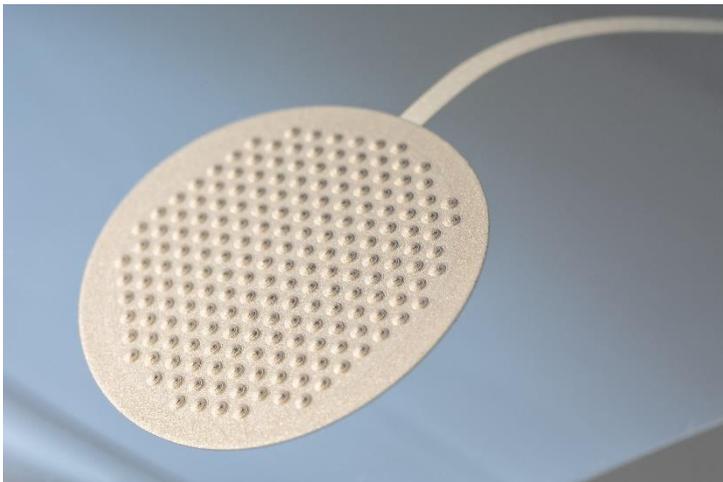
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Henkel AG & Co. KGaA

The following material is Available:



— Stretchable material for formed & in-molded electronics.



— Wearable patch with a skin-compatible, pressure-sensitive adhesive.