



CONNECT

Smart patches - smart helpers

Background

As one of the world's largest polymer companies, Covestro develops high-tech polymer materials and innovative solutions for products used in many areas of everyday life. Covestro manufactures at 30 sites worldwide and operates in sectors ranging from automotive and electronics to sports and healthcare. The partnership with start-up InnoME, founded in 2015, led to the development of a special film sensor for smart patches. InnoME, which specializes in customizable foil-based sensor and actuator technology with its accensors business unit, operates primarily in the medical technology, pharmaceutical and biotechnology sectors. The paired expertise of the two companies, enables the development of the smart patches, whose sensor integration is based on the combination of special Platilon films and a Baymedix®-based thermoformable foam. All the materials used are breathable, very light, thin, and flexible, ensuring a high level of wearer comfort.

Functionality meets sustainability

Smart, smarter, wearables! Due to their concentrated function and complexity, wearables are not only convincing in leisure time, but are also increasingly popular in medical technology. The market for wearables in medicine is developing rapidly. While there were only 28.8 million wearables in circulation in 2014, experts forecast global sales of around 527 million by 2024. Following the trend, the medtech industry has now also developed health wearables that are intended to contribute to prevention, diagnostics, treatment, and monitoring.

Health wearables are used for digital self-measurement of patients and have long been used in their classic form in various treatment procedures, e.g. as pacemakers or cochlear implants. Unlike ordinary wearables, however, health wearables are subject to much stricter regulations and conformity tests in order to meet performance and safety requirements.

Smart patches, which offer numerous possibilities in medical diagnostics, represent a current pulsating trend. Greater functionality, improved wearer comfort and continuous miniaturization of the electronic patches, and besides all these Covestro promises a long-term, sustainable use. A change in the raw material composition of the adhesives, foams and films created an innovative solution for the development of the new sensor and electronics module. Always keeping in mind the challenge of designing the patches to be as small, flexible and barely noticeable as possible to increase patient comfort, Covestro partnered with Accensors to develop a smart patch consisting of a non-reusable component (disposable patch) and a reusable component (reuse patch) containing all the electronics. Here, the Disposable Patch, which contains the sensors close to the body, is attached to the skin using an adhesive and the ReUse Patch is inserted into it. The newly developed, specially integrated foil sensor forms the interface between the health wearable



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and the patient and enables the detection parameters to be individually adjusted to the patient.

The use of smart patches can be used for medical diagnosis of blood glucose levels, heart rate and body temperature measurements, but also for monitoring chronic wounds and skin cancer. Additionally, smart patches can be used for long-term monitoring of sleep patterns and specific drug dosages. The data generated by the smart patches is then used for more precise diagnostics during medical history consultations and, if necessary, can predict indications of potential problems that can be counteracted cost-effectively through early preventive measures.

You find the field of health wearables exciting and would like to learn more about it? We would be happy to put you in touch with the company. arcoro CONNECT links innovations, companies and people - personally and directly.

COMPANY	LOCATION	WEBSITE	FIELD OF EXPERTISE
Covestro x Accensors	Germany	https://www.covestro.com/de https://accensors.com/	Smart Patches
Varta AG	Germany	https://www.varta-ag.com/de/industrie/smart-patch	Smart Patches
Quad Industries SA	Belgium	https://www.quad-ind.com/	Smart Patches (Covid-19)
Epicore Biosystems Inc	USA (MA)	https://www.epicorebiosystems.com/	Smart Patches
Gentag Inc	USA (WA)	https://gentag.com/nfc-skin-patches/	Smart Patches
Nemauro Medical Inc	UK	https://nemauromedical.com/	Smart Patches
iRhythm Technologies Inc	USA (CA)	https://www.irhythmtech.com/	Smart Patches
Vivalink Inc	USA (CA)	https://www.ottobock.de/	Smart Patches

We are also happy to connect you directly with industry specialists in the field of Printed Electronics & Smart patches. Keep your knowledge up to date and be inspired by exciting perspectives and research approaches. We have done the research for you! We would be happy to establish a personal contact for you on a national and international level.



INDUSTRY EXPERT	JOB POSITION	FIELD OF EXPERTISE
Eike Kottkamp	CEO at Accensors	Smart Patches
Teemu Alajoki	Research Lead at VTT	Printed electronics
Dr. Joerg Schotter	Project Manager Molecular Diagnostics at the Center for Health & Bioresources at AIT	Electronic Signal Processing

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