



accensors

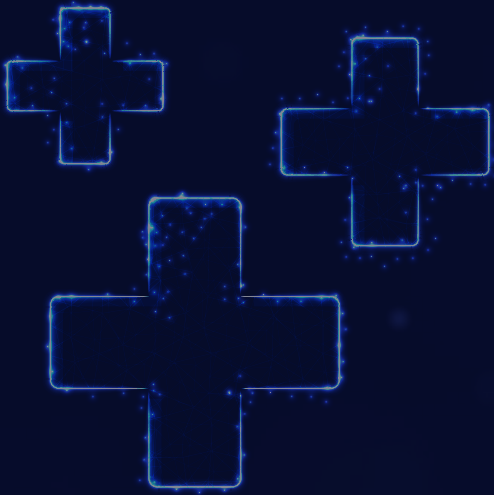


Smart Patch

customized smart patches for your application - completely flexible, excellent wearing comfort and multiparametric sensor technology



www.accensors.com



accensors *Printed Foilsensors*

accensors is a business unit of innoME GmbH, which was founded in 2015 as a spin-off from the Erwin Quarder Group. Today, we are an interdisciplinary team of engineers, chemists, physicists and biologists who are passionate about developing and implementing new sensor solutions at our locations in Munich and Espelkamp.

We want to realize customized and customer-oriented foil sensors, inspire our customers and end users and provide valuable and sustainable knowledge through sensor data.

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More sustainable wearable patch sensors for greater patient comfort

Our health is our greatest asset. One of the growth markets of the next few years will be the area of wearable and eHealth. At accensors, we are working intensively on foil-based sensor solutions that can be used close to the body.

Wearable smart patches are used in medical technology for diagnosis and long-term monitoring of patient vital parameters, such as pulse. These patches can be equipped with numerous sensors and adhere to the human skin using a skin adhesive.

Current trends show increasingly versatile functionalities, improved comfort and miniaturization of these wearable devices. This also includes aspects of sustainability and long-term use.

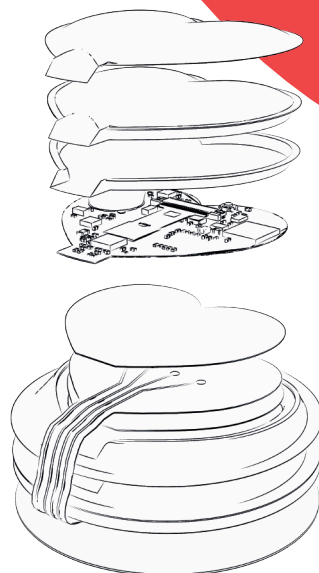
As part of different R+D projects, we are currently developing a non-invasive sensor system for wound monitoring as well as for monitoring vital parameters.

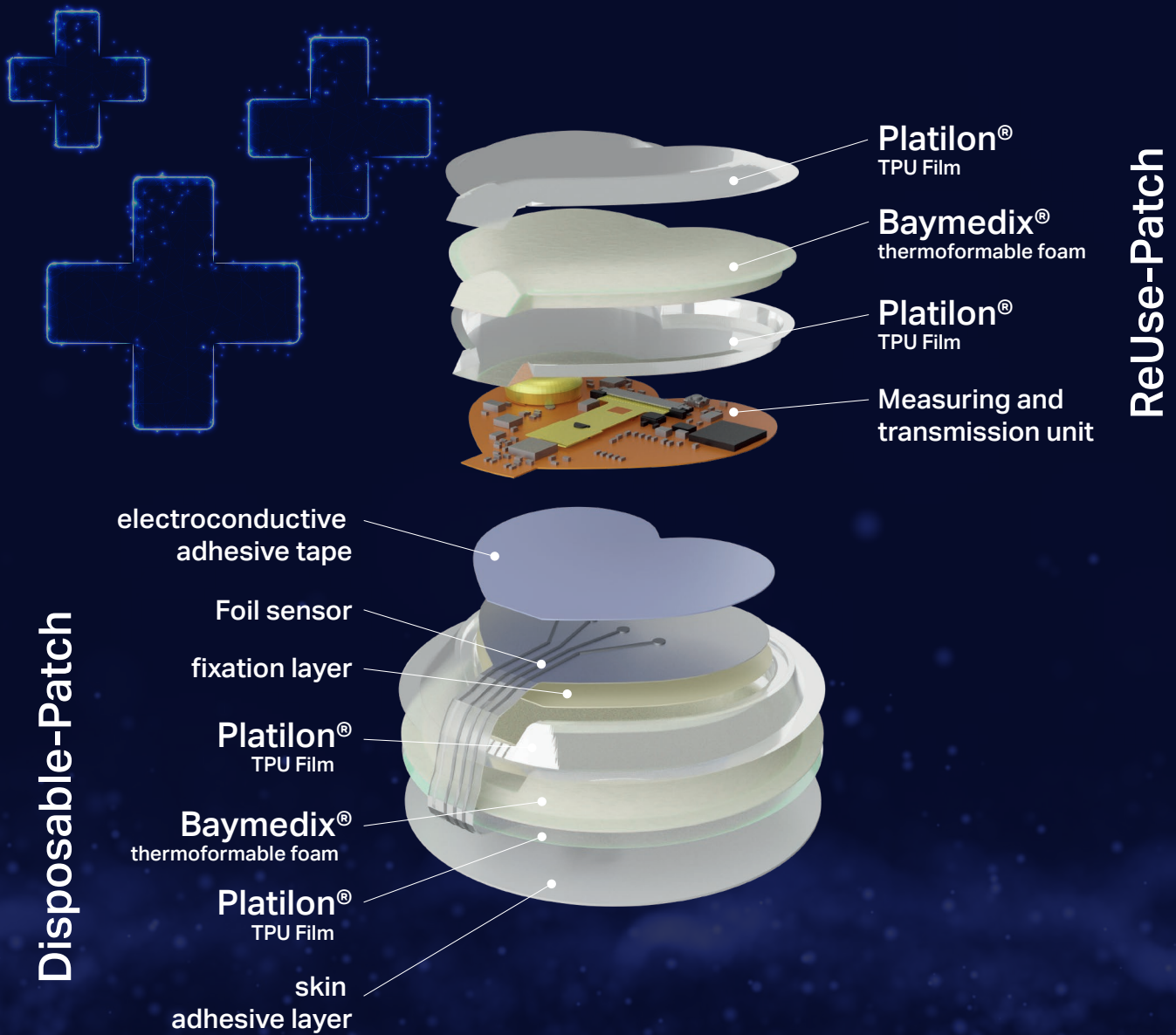
Together with Covestro, we wanted to develop a completely new design for wearable smart patches that simultaneously enables improved comfort, reduces waste, and supports monitoring and diagnosis as a medical device.

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With our very thin, soft and comfortable-to-wear solution, we are opening a new door for remote patient monitoring. This is clearly a huge advantage for the patients – they can stay at home; they can live their life.

Eike Kottkamp
CEO, innoMe GmbH / accensors





The solution is a clever two-element system consisting of a Disposable Patch for single use and a ReUse Patch that can be used multiple times, thus conserving resources. As the monitoring sensors for vital signs come in contact with the patient's skin, they are housed in the Disposable Patch, while the electronics are embedded in the foam of the ReUse Patch. They are connected to each other via an electrically conductive adhesive tape so that sensor data is passed on to the measurement and data transmission unit. The application is easy: the ReUse Patch can be easily inserted and removed from the Disposable Patch.

With our accensors foil sensor technology it is possible to record multiparametrically for example pulse, pH and temperature via the skin. The ReUse Patch can also be used to measure environmental parameters such as movement, brightness and pressure. An inward-facing camera can be integrated for wound monitoring. There are various options for wireless data transmission, such as Bluetooth LE, NFC, WiFi, etc.

Embedding the lightweight and flexible materials in special films and foams from Covestro, it enables comfortable use and a high level of wearer comfort.

Our claim in sensor development

No matter whether it is a challenge or a complex problem. We love working with sensor technology. For all our love of technology, our focus as sensor product developers is always on the benefits in the use case.

For us, the development of non-invasive sensor technology and skin patches includes:

- Close exchange with representatives from the health sector regarding the functionalisation of new sensors
- Responsibility for the selection of medically approved materials (e.g. foam, foil, skin adhesive) and inks
- design of thin, lightweight and flexible measurement electronics and data transmission units
- Foilsensor research and development under high-quality standards
- Embossing foam and foil material





Development

The know-how of accensors is the development of customized sensor solutions. According to your needs and the attributes of your product, the sensor technology is adapted.



Prototyping

We are specialized in accelerated development processes. As a result of the first R+D phase, rapid prototyping and the production of small functional batches are part of our daily tasks.



Testing

Our production facility has a wide range of options for testing sensors and validating functions. In-house developed and built test equipment is successfully used here.



Up-scaling

Here small-batch manufacturing to large-batch production. This is done in collaboration with our partner network. Membranes and sensor components will be applied by us afterwards.



Integration

To connect your foil sensor to your product, we have a variety of different integration methods at our disposal.

gluing & bonding / Laminat / Injection Molding / Assembling / Welding



Serial production

Finally, the product design allows for large scale production with roll-to-roll processes in our partner network. Together, we make sure that we take care of all quality steps.



Quality Control

Finally, the product design allows for large scale production with roll-to-roll processes in our partner network. Together, we make sure that we take care of all quality steps.



The accensors USP's form a mix of

- Know how*
- Desire*
- Intellectual property rights*



Know how

Skills - That's what it's all about.

At accensors, we bring together a team of technicians, scientists, health experts and business economists to fully realize maximum success for our sensors right from the start.



Desire

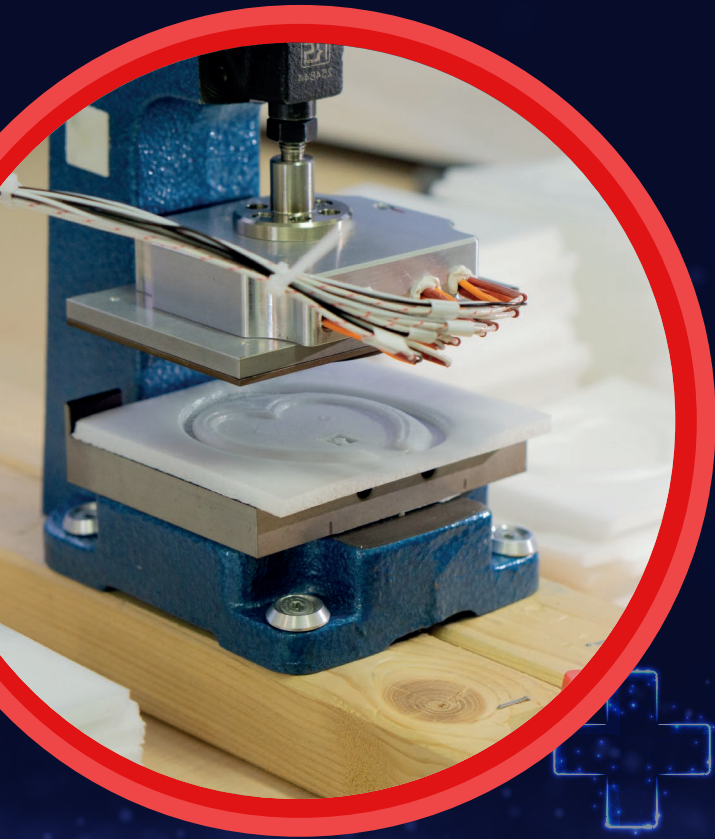
Realization strength and motivation to achieve something new, to realize new sensors, is in our DNA. As a whole accensors team we want to make a meaningful contribution to more safety in healthcare, higher quality of life for patients and professional assistance through our foil sensor solutions.



Intellectual property rights

A broad portfolio of intellectual property rights anchors our ability and desire. We at accensors differentiate our property rights into three classes.

- Basic technology and processes
- Special sensor features for UseCases
- Integration in or on products



from medium quantities to mass production -

we see ourselves as a development and production partner for your smart patch. No matter if niche application or giant market, let us realize new smart patch solutions together.



from vital signs to wound monitoring to physiometric data

one of the great capabilities at accensors is that we can develop and produce multiparametric, flexible sensors in a customer- and application-oriented way. Multiparametric makes sense because vital monitoring or healing processes are only essential and meaningful with a complete data picture of different parameters.



Key facts and uniqueness



Who always does what he is already able to do, always remains what he already is.
- Henry Ford

Thinner than a hair

At accensors we use foil materials from a thickness of 6µm on which we build our sensors.

Biocompatibility Clotting

The compatibility of our foilsensors is a "must have". We have developed different concepts to ensure compatibility.

Disposable ability

Foilsensors from accensors are developed in such a way that a sustainable recycling process can take place.

Not just some measurement values ...

but the really relevant ones - For us, it is standard to develop multiparametric sensors to record several different parameters simultaneously.

No "product change" due to upgradeability

To avoid major changes to the product or manufacturing process, we develop solutions for retrofitting foilsensors to existing products.

Response times

A big PLUS of foil sensors. Due to the small wall thicknesses and the quasi direct contact with the analyte, our foilsensors have extremely fast response times.

Material flexibility

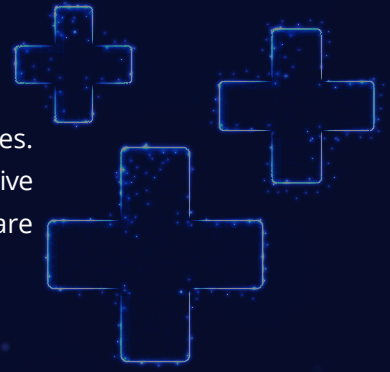
Depending on the conditions of use, we use different foil materials, such as PEEK, PEN, PC, PET or PI. Elastic foil material is also possible and offers options especially for balloon catheters.

In the future - Active treatment

We at accensors are working on further functions that can be directly combined with our foil sensors. Thus, active sensor-based monitoring and treatment becomes real.

Applications and handling

Many significant applications are conceivable with Smart Patches. Not only patients have direct added value from the wearable, wireless and unobtrusive measurement of vital parameters. In today's era of Quantified Self, healthcare consumers are also increasingly turning to self-monitoring tools.



Two examples of a Smart Patch application:

- Continuous wound monitoring for improved wound healing: sensor technology integrated into wound dressings.
- Long-term monitoring of dehydration status in people at risk for earlier targeted interventions via body-worn sensor technology.





why choose accensors?

*Your vision is our mission:
customised sensor development*

Whether smart plasters, intelligent catheters or other consumables with integrated sensor technology, as a service provider we offer companies and customers our development expertise and the corresponding connectivity. Let us transform your idea together to realise your innovation thrust and make your products become more intelligent.

„Who if not us – when if not now?“

We offer agile milestone-based development with regular review of deliverables and increments. After reaching each predefined milestone, there is the possibility to continue or stop the development process in the follow-up sprint. While you focus on your core business, we explore how we can solve your problem or come to new insights with your products.



Regardless of whether you already have a clear project idea or would like an initial brainstorming session with our team. Just contact us if you are curious about working together!



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