



Biosensors

Biosensors are used to measure and analyse biological compounds and are becoming more and more established in medicine, assisting in the diagnosis and various treatments of diverse diseases through continuous and reliable analysis.

Biosensors are a molecular cell technology based on a biological component and a physical sensor that continuously communicate with each other. The biological basis is provided by enzymes, DNA receptors, complete cells, tissue sections and antibodies, which react together with a substance to be tested and create a biological-chemical signal. This signal is transformed into an electrical signal by the physical sensor.

Considering that biophysical sensors can only measure vital and mobility parameters, biochemical sensors are able to explore human health on a biomolecular level. To perform such analyses, biofluids are used. These can be sweat, tears, saliva or extracellular fluids, among others. The biofluids make it possible to provide physiological information without an invasive procedure, which can monitor biomarkers such as metabolites, hormones and drugs in the biofluids through various techniques. The monitoring is then used to diagnose and treat mental illness, gout and cystic fibrosis. Furthermore, it can be used to treat drug abuse.

The coupling of biomaterials and electronics enables measurements based on biocatalytic reactions. The innovative technology promises to improve the analytical capability of HealthCare Wearables through the interaction of biomaterials, electrochemical sensors, microfluids, big data and cloud computing. This also allows a direct interaction with the human skin without the use of rigid wristbands. Regularly, biosensors are based on two-dimensional materials such as nanomaterials that are bonded together with polymer coating, various printing techniques or conductive polymers, making them more flexible, lighter and highly biocompatible.

The advantages of invasive and non-invasive biochemical sensors are their rapid data acquisition, ease of use, size and flexibility, which promises the user a high level of comfort as well as detailed and complete results.

INNOVATIVE TECHNOLOGICAL APPROACHES

- ◇ **Company:**
Innovative Sensor Technology IST AG
- ◇ **Technological base:**
Biosensoren
- ◇ **Fields of application:**
Multiparametric measurement of glucose, lactate, glutamine and glutamate concentration in aqueous media.
- ◇ **Measurement technique:**
enzymatic-amperometric measuring principle
- ◇ **Website:**
<https://www.ist-ag.com/de>

Your area of interest includes innovative approaches and technologies in the field of medical technology?

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