SMART SKIN PATCH

WEARABLE BIO-MONITORING SENSOR FOR MONITORING PHYSIOLOGICAL PARAMETERS FOR HEALTH AND PERFORMANCE

TECHNOLOGY FIELD

Biomedical, Healthcare, Human Performance

IP PROTECTION

Patent No. US 7,731,979 B2

RESEARCHERS

Dr. Kim Cluff (left) is an assistant professor at Wichita State University, and is titled principal investigator for the Biomedical sensors, Imaging and Modeling Engineering Laboratory (BIoME). His work there has resulted in over $1 million in funding.

Dr. Jeremy Patterson (right) is well recognized for his research history in clinical exercise physiology, recieving over 25 grants. Dr. Patterson also holds several patents, is a professor at WSU, has started over 25 businesses,and is Dean of the Institute for Interdisciplinary Innovation.

BACKGROUND

Biosensors are an emerging technology, allowing individuals to monitor various health parameters in real-time without the need to consult a medical professional. By monitoring the status of biological processes and functions for physiological parameters, biosensors can indicate the overall health status of a user and any health-related issues. Low detection sensitivity, complex circuitry, expensive costs, and slow detection rates are a few common limiting factors within current biosensors. Such limitations can hinder the accessibility, sensor accuracy, and mobility. These drawbacks prevent biosensors from reaching their highest potential as a product in the consumer marketplace.

ADVANTAGES

The presented technology is a wearable and disposable biosensor with no electrical connections or complex circuitry, strapped to the body or woven into garments, and can even be integrated into a medical implant. This biosensing system is equipped to monitor and detect human biological functions of tissues and fluids by detecting changes in properties, such as electric and magnetic fields.

APPLICATIONS

Having the ability to remotely monitor personal health allows for early screening of conditions that can potentially cause major damage to the body. Therefore, early-stage diagnosis is crucial and an often a deciding factor for treatment options. This biosensor can detect many conditions, including:

- Peripheral artery disease
- Diabetes
- Skin melanoma
- Intracranial swelling
- Implant degradation
- Lung damage

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