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GALVANIC ELECTRO-QUASISTATIC WEARABLE TO IMPLANTABLE COMMUNICATION FOR A SMART CONTACT LENS

Ultra-low power body-area network enabling safe, short-range data transfer for devices like smart lenses.

Researchers at Purdue University have developed an ultra-low power communication methodology between implantable and wearable devices. This system has a power draw on the microwatt scale, allowing for longer usage periods. This methodology also offers more robust data security, as the data from the signal can only be received within 10 cm of the wearer's body. This technology represents a step forward for Body Area Networks through greater power efficiency and security. The concept was designed around data transfer between a smart contact lens and a pair of headphones, but the underlying technology has a wide array of applications in the wearable and implantable device field.

Advantages

- Low power consumption

- Increased physical security due to small signal distance

Applications

- Wearable and implantable devices

- Wireless Body Area Networks

TRL: 4

Intellectual Property:

Provisional-Gov. Funding, 2022-02-28, United States

NATL-Patent, 2023-01-30, China

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View online

NATL-Patent, 2023-01-30, India

PCT-Gov. Funding, 2023-01-30, WO

NATL-Patent, 2023-01-30, European Patent

NATL-Patent, 2024-08-22, United States

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