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Wirelessly-Powered Implantable EMG Recording System

A wireless, RF-driven EMG electrode, small enough for injection, provides a less-invasive, low-risk alternative to traditional wired or surgically implanted prosthetic control systems.

Electromyography (EMG), a technique for evaluating and recording the electrical activity of skeletal muscles, is increasingly incorporated into functional prosthetics. Currently, EMG signals are either recorded using surface electrodes or wired implants. Very few are implantable, and of these, most are large enough that they require surgery for implantation and pose a high risk of infection.

Researchers at Purdue University have developed an implantable EMG electrode that is wireless, low power, RF-driven, and retains good signal quality following amplification. The electrode is small enough to be implanted via injection, decreasing the risk of infection associated with invasive surgery.

Advantages:

-Small enough for injection

-RF-powered

-Radiotransparent electrode

-Multiple channels are possible

Potential Applications:

-Medical/Health

-Medical devices

-Implantable medical device

TRL: 4

Technology ID

65805

Category

Materials Science & Nanotechnology/Biomedical & Bioinspired Materials

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Intellectual Property:

Provisional-Patent, 2012-07-31, United States | Utility Patent, 2013-07-31, United States | CON-Patent, 2023-08-25, United States | Unknown, N/A, UNKNOWN

Keywords: Electromyography, EMG electrode, wireless EMG, implantable medical device, RF-driven electrode, injection implantable, low power EMG, functional prosthetics, radiotransparent electrode, muscle electrical activity