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ELECTRICALLY SHIELDED CONTAINMENT SYSTEM FOR HIGH-COUNT ELECTRODE ARRAYS

BIOTECHNOLOGY

Gold screen for placement around high-count electrode arrays to reduce noise contamination from surrounding electrical signals.

TECHNOLOGY TYPE

Medical Devices
Class III

STAGE OF DEVELOPMENT

- Prototypes developed.
- Partially reduced to practice.

IP PROTECTION

U.S. Utility Patent Issued

System and Method for
Electrically Shielding a
Microelectrode Array in a
Physiological Pathway from
Electrical Noise

US8639312B2

U.S. Continuation Issued

System and Method for
Electrically Shielding a
Microelectrode Array in a
Physiological Pathway from
Electrical Noise

US8855737B2

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Reference Number: U-4388

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TECHNOLOGY SUMMARY

Nervous system disorders represent one of the nation's largest healthcare problems, afflicting more than 100 million people in the United States annually. Electrode arrays are emerging as premier neuroprosthetic interfaces for restoring sensory, motor, and other functions after nervous system damage or disease. While electrode arrays depend on action potentials to function properly, action potentials generated by nerves are relatively weak compared to surrounding physiological signals. This weakness obstructs clear array recording and stimulation.

University of Utah researchers have developed an electrically shielded containment system for high-count electrode arrays to combat signal contamination. This containment system consists of a gold screen that is connected electrically to ground and surrounds the array, reducing electrical noise contamination.

FEATURES AND BENEFITS

- Reduces electrical noise and electromyographic signals.
- Enhances electrode array function.
- Compatible with external wire and inter-array reference array systems.

RECENT PUBLICATIONS

Kagan, Z. B., Wendelken, S., Page, D. M., Davis, T., Hutchinson, D. T., Clark, G. A., & Warren, D. J. (2016). Linear methods for reducing EMG contamination in peripheral nerve motor decodes. *2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. doi:[10.1109/embc.2016.7591463](https://doi.org/10.1109/embc.2016.7591463)

INVENTOR PROFILE

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