A Novel Method of Removing Stimulation Artifacts (SA) from Multichannel Electrical Recordings

Tech ID: 25568 / UC Case 2016-038-0

INVENTION NOVELTY

This technology is a novel algorithm that can significantly remove stimulation artifacts (SA) from electrophysiological recording devices used for neuroscience research and/or clinical therapeutics.

VALUE PROPOSITION

Electrical stimulation of nervous tissue and its combined use with electrophysiological recordings have been successfully used for clinical diagnosis, treatment of neurological disorders, and restoration of sensory and motor function. However, there is no effective solution to remove SA during the time of stimulation. The presented technology provides a more powerful way to reduce SA than previous approaches such as blanking, frequency domain filtering, and template subtraction.

TECHNOLOGY DESCRIPTION

Researchers at the University of California, San Francisco have developed a robust algorithm which can be used in clinical devices combining stimulation with simultaneous recordings to filter out the electrical SA and then allow better detection of biological signals. This technology doesn't require the SA to be temporally or spectrally distinct from the signal only that electrical recordings are made across multiple electrodes.

STAGE OF DEVELOPMENT

Proof of Concept

DATA AVAILABILITY

Under CDA/NDA; tested in an animal model of a bidirectional neuroprosthesis

RELATED MATERIALS

- Not available at this time

PATENT STATUS

Country	Type	Number	Dated	Case
European Patent Office	Issued Patent	3595769	07/03/2024	2016-038
United States Of America	Issued Patent	11,596,797	03/07/2023	2016-038

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OTHER INFORMATION

KEYWORDS

Deep brain stimulation, Electrical stimulation, Stimulation artifacts, Multichannel electrical recordings

CATEGORIZED AS

- **Medical**
  - Devices
  - Disease: Central Nervous System

RELATED CASES

2016-038-0

Additional Patent Pending

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