Docket #: S23-407

Apparatus for efficient electrotactile fingertip stimulation for the treatment of disorders of the nervous system

The Tass Lab has invented non-invasive, Vibrotactile Coordinated Reset (vCR) stimulation devices and methods to safely and efficiently treat brain disorders characterized by abnormal neuronal synchrony such as Parkinson's disease.

This invention enhances non-invasive stimulation by introducing a 3-channel electrotactile stimulation specifically targeting a designated area of the skin, such as one fingertip. This method enables convenient application, even during nighttime. The innovation achieves more physiologically effective stimulation with reduced battery usage and minimal noise. Stimulation can be administered through a single site, like one fingertip, or multiple sites, such as 2 or more fingertips, depending on the stage of therapy—utilizing multiple sites in early stages and transitioning to single-site therapy for future maintenance.

Stage of Development

- Proof of Concept

Related Technologies:
17-270: Safe and efficient vibrotactile multi-channel stimulation for the treatment of brain disorders
23-357: Apparatus for efficient vibrotactile stimulation, especially vibrotactile fingertip stimulation
23-359: Apparatus for efficient vibrotactile and electrotactile fingertip stimulation
23-360: Apparatus and method for efficient long-term multi-channel non-invasive stimulation for the treatment of disorders of the nervous system
23-373: Apparatus and method for efficient multichannel vibrotactile stimulation

with compound pulses
23-406: Apparatus and method for efficient combined vibrotactile and electrotactile stimulation for the therapy of disorders of the nervous system
23-408: Apparatus and method for efficient wireless synchronization of multi-site non-invasive stimulation for the treatment of disorders of the nervous system
23-409: Method and apparatus for autonomous parameter adaptation of non-invasive multichannel stimulation

Applications

- Glove (fingertip stimulation) for the therapy of Parkinson's Disease and other movement related disorders

Advantages

- Non-invasive
- Easy implementation with current prototype
- Physiologically more effective using 3-(physiological) channel electrotactile stimulation
- Lower battery requirement
- No noise

Innovators

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