Docket #: S23-406

Apparatus and method for efficient combined vibrotactile and electrotactile stimulation for the therapy 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.

The invention enables more effective non-invasive stimulation, by combining vibrotactile and electrotactile stimulation. This new, hybrid stimulation achieves physiologically more effective non-invasive stimulation at considerably lower vibration amplitudes and, hence, significantly reduced noise levels. In addition, the combination of vibrotactile and electrotactile stimulation modalities, realizes a considerably larger inventory of effective stimuli. This increases therapeutic efficacy and counteracts habituation effects. This invention is similar to the solely vibrotactile simulation device in 23-357 (see related Technologies links below) except with a new contactor for hybrid stimulation which contains dedicated electrodes.

Stage of Development
Prototype

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
23-407: Apparatus for efficient electrotactile fingertip stimulation for the treatment 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
- More effective stimulation with added benefits of hybrid stimulation (vibrotactile and electrotactile)

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