Docket #: S23-373

Apparatus and method for efficient multichannel vibrotactile stimulation with compound pulses

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 enables spatially more focal and/or shorter activation by means of novel (compound) pulses or continuous stimulation with specifically modulated amplitudes. Compound stimuli are the core key feature of the invention. Thus, this enhanced technology enables more effective vibrotactile stimulation, i.e., stronger physiological effects with less vibration power/amplitude.

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
23-406: Apparatus and method for efficient combined vibrotactile and electrotactile stimulation for the therapy of disorders of the nervous system
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

- **Next generation glove therapy** for patient suffering from Parkinson's disease and a variety of other movement disorders
- **Other potential applications include:**
  - **Medical** applications: for rehabilitation, dedicated training and fitness
  - **Military** applications: navigational and alert cueing for soldiers
  - **Aviation** applications: for simulation and training and situational awareness (warning) systems, e.g., for pilots
  - **Automotive** applications: for alerts/warnings and navigation

Advantages

- Non-invasive
- More effective vibrotactile stimulation
- Stronger physiological effects with less vibration power/amplitude
- Personalized calibration

Innovators

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