Docket #: S23-357

Apparatus for efficient vibrotactile stimulation, especially vibrotactile fingertip stimulation

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 vibrotactile stimulation efficiency by introducing a novel vibrotactile mechanical stimulator (tactor). This device incorporates elements such as a shock absorber, a physiologically optimized contactor shape, and a wavebreaking hole to reduce surface wave spread. The specific fingertip fixation allows the tactor to be mounted on fingertips of various sizes, maintaining consistent contact pressure.
The key advantage of this innovation is its ability to achieve more effective vibratory stimulation with lower vibration amplitudes, resulting in significantly reduced noise levels and minimized propagation of skin vibration waves.

Stage of Development

- Prototype
- Ready for clinical pilot studies

Figure:

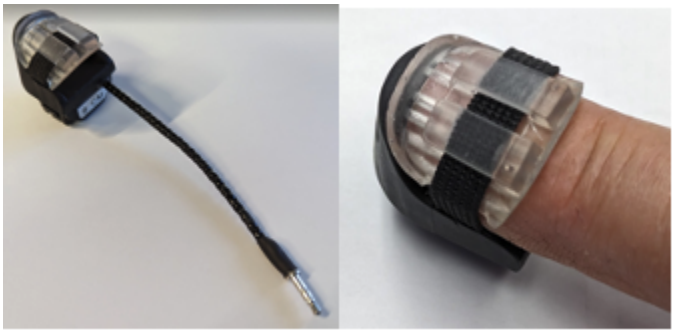


Figure description: Device Prototype. (*Image credit: Tass Lab*)

Related Technologies:
17-270: Safe and efficient vibrotactile multi-channel stimulation for the treatment of brain disorders
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
23-407: 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

- Vibrotactile glove/fingertip stimulation array therapy for the treatment of Parkinson's disease as well as further movement disorders

Advantages

- Non-invasive
- Enhanced vibrotactile stimulation efficiency
- More effective vibratory stimulation with lower vibration amplitudes, resulting in significantly reduced noise levels and minimized propagation of skin vibration waves

Patents

- Published Application: WO2025097075

Innovators

- Peter Tass
- Gary Barbadillo
- Eric Aldenbrook
- Sean Brinkerhoff
- Mark Brinkerhoff
- John Dring
- Greg Gengarelly
- Justus Kromer
- Eric Wurtz

Licensing Contact

Seth Rodgers

Licensing Manager, Life Sciences

Email