Docket #: S07-136

Neuromodulation with Focused Ultrasound

Researchers in Prof. Karl Deisseroth's laboratory have developed a novel system for modulating brain activity with moderate intensity focused ultrasound. In this technique, ultrasound is used to increase the intrinsic firing rate of targeted neurons. The affected neuronal circuits can then maintain their altered activity through long-term potentiation or long-term depression. This process has the potential to effectively and durably sculpt brain circuits to perform more efficiently for the treatment of conditions such as depression, Alzheimer's disease, Parkinson's disease, or autism.

Applications

- **Therapeutic ultrasound** for neuromodulation

Advantages

- **Greater durability** of treatment effect
- **Non-invasive**
- **Site-specific** modulation of cellular activity

Publications

- US Patent Application: 12/263,026

Patents

- Published Application: 20090112133
- Published Application: 20190022425
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