Technology Offer CSIC/EG/118

Control method for a neuroprosthetic device for the reduction of pathological tremors

Monitor and reduce pathological tremors in users through a neuroprosthetic system able to stimulate patient´s affected pathways.

Market need

Tremor is the most common movement disorder and its incidence and prevalence are increasing with the aging of the world population, affecting 15% of people aged between 50 and 89 years. The most common are tremors caused by the two neurodegenerative diseases: Parkinson's disease and Essential tremor. Although the disorder is not life-threatening, more than 65% of population suffering from upper limb tremor reports serious difficulties in performing the activities of daily living (ADL), greatly decreasing their independence and quality of life.

CSIC solution

This is a method for controlling a neuroprosthetic device for the treatment of tremors by modulating the affected afferent pathways. This new method allows the monitoring in real time of the tremorgenic bursts at the peripheral agonist muscle and concomitant stimulation of the antagonist muscle. Monitoring and stimulation are made at the peripheral level (muscles) of the nervous system.

Intellectual Property

PCT application

Intended Collaboration

Licensing and/or co-development

Stage of development

Prototipe tested in pacients

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Competitive advantages

- Avoid the side effects of invasive direct brain stimulation and potentiate the effects of tremor reduction of peripheral stimulation techniques to more than a few minutes post stimulation.
- Solves the problem of short-term effect of tremor reduction in methods based on peripheral stimulation.
- Allows customized stimulation through neuroprosthetic systems.