

## BSc/MSc-project

Title: **EEG and TES neurostimulation**

### Description:

In classical electrical neurostimulation (TES) DC or AC current is applied to two or more electrodes placed on a subject's head, to create a current flow through the brain on the subject to induce different type of cognitive effects. Some of the challenges with TES is that (1) the stimulation protocols used are based on general data gathered through classical brain scanning (mainly fMRI), and (2) that the possibilities for monitoring (a) the actual effect of the stimulation and (b) the amount of current running in the skin and not entering the brain, are limited. There have been some attempts to overcome these challenges by the use of EEG, to (1) create individual benchmarks for stimulation ('copy-paste' of individual electrical patterns), (2) measure the actual effect of stimulation (how the natural current flow changes during a TES session) and (3) to measure the amount of electricity running in the skin (by the use of EEG electrodes as measuring devices on changes in skin current), but the existing knowledge within all three areas is still limited. In this project, the students will create a prototype integrating two existing devices (one EEG and one TES), and approach one or more of the challenges outlined above. The project will be carried out in collaboration with PlatoScience ([www.meetplato.com](http://www.meetplato.com)), a private company producing the Plato neurostimulator.

For more information students can contact CEO Balder

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