

BSc/MSc-project

Title: Comparison study of EMG measurement methods

Description:

In this project you will help to establish and perform the comparison between standard Electromyography (EMG) measurement methods and that of PreCure Elbow.

PreCure Elbow measures EMG using dry-electrodes, which allows for the EMG pads to be re-usable, compared to the traditional method where the pads are glued to the patient with a gel to create good electrical connectivity to the skin, and discarded after each test. PreCure Elbow is wireless.

The purpose of the project is to establish whether the PreCure Elbow measurement method is comparable to existing, clinical EMP measurement methods and are the measured EMG signals equivalent.

The project will contain:

- Development of comparison study protocol and defining how to ensure the validity of the new measurement method,
- Execution of test, and
- Analysis, interpretation and report of test results.

Required qualifications:

- Knowledge of basic human anatomy
- Knowledge of excitation of muscular tissue and action potentials
- Skills within signal recording, e.g. differential and instrumentation amplifiers, analog-to-digital converters etc.
- Skills within signal processing e.g. filtering, frequency analysis, root-mean-square, power-spectrum, etc.
- Knowledge of Matlab and its toolboxes will be of great use.

Contact information:

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Allowed no of students per report: 2

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