



## Scientific/Educational Workshop

### Workshop information

**Workshop responsible:**

Aleksandra Vuckovic

**Workshop title:**

Brain Computer Interface and Functional Electrical Stimulation for Rehabilitation of Movement

**Workshop goals:**

Explain the difference between BCI-FES systems used for rehabilitation and as assistive devices; present different strategies to achieve BCI control of FES; introduce the concept of home based patient/caregiver managed BCI-FES therapy; demonstrate portable BCI-FES system for home based patient/caregiver managed BCI-FES therapy

**Abstract:**

Brain computer interface (BCI) controlled functional electrical stimulation (FES) has two major applications, restoration of movement and rehabilitation of movement. This workshop will present the concept of BCI-FES for rehabilitation, i.e. as a therapy, and contrast it to requirements of BCI-FES for restoration of movement. We will then provide an overview of different BCI-FES strategies for rehabilitation of movement and discuss evidences of their mechanism and efficacy. Finally we will introduce the concept of home use BCI-FES hand therapy, that is managed by a caregiver rather than by a therapist. At the end of the session, we will demonstrate the home-use BCI-FES system to attendees of the workshop.

**Speakers:**

Aleksandra Vuckovic  
Manaf Kadum Husein Altaieb  
Bethel Osuagwu  
Dario Farina