

Project Title	Electric artificial muscle for wearable robotics
Supervisor	Dr Majid Taghavi
Theme	Neurotechnology and Robotics
Project Type	Lab based
Project Description	<p>This project will focus on a new and exciting area of research in soft robotics muscles. Dielectrophoretic liquid zipping (DLZ) is a new actuation concept that can be used as an electroactive artificial muscle.</p> <p>A pair of insulated electrodes contract like a zipper when a high voltage is applied to the electrodes [Majid Taghavi et al, Science Robotics, 2018]. Application of a tiny bead of dielectric liquid (oil) to the zipping area leads to a gigantic force amplification through a synergistic interplay of various physical phenomena. In this research, we will develop a new embodiment of this actuation concept in a soft structure with the aim of reducing the input voltage, allowing it to be used on the human body for restoration and augmentation of motor functions.</p> <p>You will be trained in actuation development, data acquisition, and characterization.</p>