CURRICULUM VITAE

Name & Surname: **Alessio Di Clemente**

Actual profile

I am currently involved in a three years PhD project working on the neural control and biomechanics of the octopus arm muscular hydrostat at the Italian Institute of Technology (IIT), in Genova. The project is born from the collaboration with the micro-biorobotics group. It aims to give further insights into the structure-to-function relationship and the neural circuits of the octopus arm with particular focus on the possible implementation of these insights into the soft-robotic field.

Work Experience

November 2018/today
PhD at the Italian Institute of Technology (IIT) in Genova under the supervision of Letizia Zullo and Fabio Benfenati.

April 2018/August 2018
Traineeship at "Theoretical neurobiology and neuroengineering laboratory", Antwerpen Universiteit, under the supervision of prof. Michele Giugliano.
The traineeship was about the analysis of "oscillatory reverberating activity" in dissociated rat neocortical cells plated on multielectrode arrays (MEA) and provided basic computational and programming skills as well as the ability to prepare dissociated cultures and to handle multi-electrode-arrays.

December 2016/March 2018
Master degree internship at SISSA, Trieste, in the "Neuron technology and physiology laboratory" under the supervision of Prof Laura Ballerini and Rossana Rauti
For my master degree thesis project, I tested a new graphene-based nanomaterial on rat hippocampal dissociated cultures using electrophysiological, immunohistological and live imaging techniques

July 2014/November 2014
Bachelor degree internship at Biochemistry Department University of Rome "La Sapienza" under the supervision of Prof Rossella Miele.
For my bachelor degree thesis project, I participated in the evaluation of the activity of a mutant isoform of the Prokineticin receptor, a G-protein coupled receptor

Education and Training

February 2019
"XXIII School of Pure and Applied Biophysics on EMERGING TOOLS IN BIOMECHANICS: FROM TISSUES DOWN TO SINGLE MOLECULES" organized by the Italian Society of Pure and Applied Biophysics (SIBPA) in Venice, Italy.

July 2017
"7TH NEURON TECHNOLOGY SUMMER SCHOOL" at International School for Advanced Studies (SISSA) in Trieste, Italy.

March 2017/September 2017
Building a (simple) Brain Computer Interface (BCI) for the project "con la forza del pensiero" presented by prof. Battaglini's group at the "Trieste Next Festival" in Trieste, Italy.

September 2015/today
International Master Degree in Neuroscience, University of Trieste
Final mark: 110 cum laude/110

September 2010/December 2014
Bachelor degree in biology, University of Rome "La Sapienza"
Final mark: 110 cum laude/110

September 2005/June 2010
Classical studies at the high school "Liceo Statale G. De Sanctis" in Rome

Languages

Italian: Native
English: Good (C1 level)

Experimental skills

Cell cultures
- Cultures of yeast cells
- Cultures of P0 rat hippocampal cells
- Dissection and cultures of P0 rat neocortex cells
- Dissection and cultures of adult octopus arm muscle cells

Electrophysiology
- Whole cell patch clamp on neuronal dissociated cultures
- Multi electrode recordings and analysis with Multi Electrode Arrays (MEAs)

Live imaging
- Calcium imaging on neuronal dissociate cultures

Muscle physiology
- Isometric and Isotonic tests on octopus dissected muscle strip

Immunohistochemistry
- Nissl staining on tissue slices
- Immunofluorescence staining on dissociated cells and tissue slices

Biochemistry and molecular biology
- Eterologus expression of human genes in yeast
- PCR
- DNA extraction and purification from yeast and bacterial cells

Computer skills

- Good command of office suite (word processor, spread sheet, presentation software
- Good command of data acquisition and analysis software packages (pClamp, Igor pro, Axograph, Imagej/Fiji, Volocity, Statistica)
- Good command of MATLAB package for signal analysis

Congresses

Poster presentation "Mechanical characterization of the octopus arm muscles"
48th European Muscle Conference, 7-11 September 2019, Canterbury (UK)