## Thesis Project Form

### Title (tentative):
Multi-well chip for the development of neurotoxicity tests

### Thesis advisor(s):
Martinoia Sergio, sergio.martinoia@unige.it

### E-mail:
Sergio.Martinoia@unige.it

### Address:

### Phone:
(+39) 010353 - 2251

### Description

#### Motivation and application domain
- Development of high-throughput systems for drug screening
- Test and validation of new device-systems

#### General objectives and main activities
The main objective is to test and optimize an existing system constituted by a multi-well plates in which the 24 wells contain a small micro-electrode array for electrophysiological measurements. The focus of the activity will be to set-up the system in collaboration with CNR-IBF (Institute of Biophysics) and to perform experiments with neuronal cells and specific chemical compounds whose mode of actions is known. In parallel a specific sw will be adapted and optimized to automatically extract dose-response curves. Finally the experimental results will be critically analyzed and discussed.

#### Training Objectives (technical/analytical tools, experimental methodologies)
- Use of advanced instruments for network electrophysiology.
- Software development (Matlab).
- Design of experimental protocols.
- Analysis of neuronal signals for neurotoxicity.

#### Place(s) where the thesis work will be carried out:
- Neuroengineering and Neurotechnologies Lab@UNIGE;
- CNR-IBF

### Additional information

#### Curriculum:
Neuroengineering and Bio-ICT

#### Maximum number of students:
1