

# Senior Design 492 Biweekly Report 6

Date : 04/05/2018

Project title : Patch-clamp microchip testing circuit interface

Client & advisor : Que Long

Team member & Roles :

---- Chenhang Xu - team communication leader

---- Daiyuan Ding - team webmaster

---- Li Qian - team leader & time keeper

---- Ningyuan Zhang - team programmer

---- Yigao Li - team test leader

## Weekly summary :

Had regular group meeting, client meeting and advisor meeting. Discussed the details of the cell that we used with graduate students. Got raw data table from empty model and resistance replacement methods. Did several tests with voltage source and with cells, and get datas for the results.

## Past Week Accomplishments

Member name	Accomplishments
Chenhang Xu	Regularly meeting with graduate student. Finish the test using the living cell and voltage clamp. Collect the data.
Daiyuan Ding	Collected the data from the neurons. Analyze the data about With_Cell and Empty_Pipette. Talk with the graduate student about the calculation for the actual current.
Li Qian	Met with graduate student, got more information and details about the cells that we used. Finished the tests with voltage source and with cells. Got the datas for the tests.
Ningyuan Zhang	Met with graduate student and collected the test data of empty pipette, with cell and voltage source tests of PC-ONE, calculated the current of each tests. Try to debug the errors during those tests and enhance the build up.
Yigao Li	Meet with graduate student to talk about the test.

	Collecting the data and analyse it. Finishing the tests with voltage source and cells.
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### Pending issues

Member name	Issues
Chenhang Xu	Keep test the voltage on the living cells and get more data from it. Calculate the current use the resistor(headstage, build in resistor and cells resistor) and voltage.
Daiyuan Ding	Not sure whether the data collected is accurate. Need further discussion about the measurements and calculations.
Li Qian	Make a conclusion of data that got from the tests of voltage source and cells. Use the datas to calculate the current of the circuit with voltage source and with cell. And compare the results.
Ningyuan Zhang	Still needed more data inputs to observe differences between different cell tested. Needed to test out the function generator method instead of the -20mV PC-ONE voltage input.
Yigao Li	Need more time and data to judge the accuracy of the data collected. Dealing with data like calculating current.

### Individual contribute

Name	Individual Contributions	Hours these 2 weeks	Hours Cumulative
Chenhang Xu	Regularly meeting with graduate student. To the test and collect the data. Input the data into excel and get the current plot	8	46

	of the cells.		
Daiyuan Ding	Analyze the data about With_Cell and Empty_Pipette. Talk with the graduate student about the calculation for the actual current.	8	46
Li Qian	Met with graduate student, got more information and details about the cells that we used. Successfully catch the cell and finished the tests with voltage source and with cells. Got the datas for the tests and make a list for datas. Finish the biweekly report.	8	46
Ningyuan Zhang	Calculated the current observed from three different voltage outputs from oscilloscope with three different setups. Finished up other extended tests with PC-ONE.	8	46
Yigao Li	Meeting with graduate student to talk about the details of cells. Finishing the tests and catch the cell successfully.	8	46

### Comments and Extended Discussion

Need to find out the accurate of the datas we have got, and compare them with the information we have got. Need some more tests to make sure the results.

### Plan for Coming Week

For the next week, we need to calculate the current of the electrons that moving through the neuron's membrane from the gained raw data cheat and make the first conclusion of the results.

### **Summary of Weekly Advisor Meeting**

Discussed the datas relate to the information we have. Discussed the details of how to get the current of the electrons that moving through the neuron's membrane.