

EE/CprE/SE 491 WEEKLY REPORT 01

9/2/19 – 9/27/19

Group number: sdmay20-11

Project title: Design of a Charge Measurement Device

Client &/Advisor: Jacob Starr/ Long Que

Team Members/Role: Nicholas Wolf – Scribe, Internal Meeting Facilitator – Daniel Frantik, External Meeting Facilitator – Brandon Degelau, Test Engineer – Ben Buettner, Chief Engineer – Keagan Plummer, Report Manager – Colin Ishman

- **Weekly Summary:** Over the first few weeks, we have been prioritizing setting up an introductory meeting with the client to gain a better understanding of the project. The project is still in the process of approval within the company. We have also done some preliminary research of charge measurement circuitry. Some of the circuitry rely on measuring the voltage across a capacitor with a known capacitance. This uses the fact that coulombs equal farads times volts ($C=F*V$). Another circuit is the constant current sink. We would put a known current to discharge the shell and record time it takes to dissipate. This would be using the fact that coulombs equal amps times seconds ($C=A*S$). This method is used for measuring the charge in batteries. Once we know more about the project, we can go into greater detail during our research to solve our client's problem.
- **Past Week Accomplishments:**
 - Had conference call discussing specifics of the project with the client.
 - Researched preliminary charge measurement circuits.
 - Using a capacitor ($C=F*V$)
 - Using Constant Current Sink ($C=A*S$)
- **Pending Complications:** We spent the first few weeks of this project trying to contact the client. We had a rudimentary idea of the project, but we wanted to get in contact the client before starting our research into the project. We were able get a conference call with the client on 9/26/19. This meeting cleared up a lot of questions and we are ready for more in depth research into the circuitry.
- **Individual Contributions:** (These numbers are rough estimates because of the complications we faced during the first few weeks of the semester.)

<u>Name</u>	<u>Contributions</u>	<u>Hours this Week</u>	<u>Hours Cumulative</u>
Keagan Plummer	Rudimentary research, Email client and advisor, Conference call with the client	6	6
Ben Buettner	Rudimentary research, Email client and advisor, Conference call with the client	6	6
Nick Wolf	Rudimentary research, Email client and advisor, Conference call with the client	6	6
Colin Ishman	Rudimentary research, Email client and advisor, Conference call with the client	6	6
Dan Frantik	Rudimentary research, Email client and advisor, Conference call with the client	6	6
Brandon Degelau	Rudimentary research, Email client and advisor, Conference call with the client	6	6

- **Plans for Upcoming Week:**

Begin design development process. Look into how to measure charge as a general concept and develop methods for doing so.

Consider a timeline to hit certain goals throughout this semester and next semester.

Find a time to meet with advisor and ask for resources (particularly a high voltage power supply).

Document our understanding of the problem presented to us and requirements of this problem.