sdmay20-39: Batteryless, Encapsulated Hydrometer
Week 3 Report
October 20 - November 1

Team Members
Jason Cheng — *Technology Lead*
Zach Higgs — *Project Lead*
Craig Phillip — *Communications Lead*
Harel Cohen — *Hardware Lead*
Ben Colson — *Test Lead*

Summary of Progress this Report
We've finished up doing basic design and testing and have planned out the rest of the semester. For the next reporting period, we need to dedicate it completely to hardware finalization and manufacture. We've speced out most of the parts, and have decided that our main focus for this semester is going to be varying input voltage and our MOSFET selection to see if various limits have impacts on the circuit overall. We know that a higher voltage decreases the rise time, so a boost converter will be put on the input to try and raise voltage without changing our input. We will continue specifying MOSFETs to try and find an ideal medium.

Pending Issues
Parts need to be finalized and the PCB needs to be designed and ordered. In addition, our testing plan needs to be planned and documented so we know when the board comes in, what we need to do.

Plans for Upcoming Reporting Period
We need to finish our PCB and order it. We will then have something to test and use.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jason Cheng	Draw schematic with input from others to figure out exactly what we're changing on the circuit, and make sure that we have something to work on so we can see exactly what our nets will look like on the PCB	10	0
Zach Higgs	We have worked out our schematic, and have added a component. The key component we have added to our schematic is the option to add a voltage booster to the circuit. Through our testing we have found that increasing the supply voltage will decrease our rise time. However, we wanted to keep our 15V input, and so we added a boost regulator onto the PCB. The next step is for our group to review	10	

	the changes we have made to the circuit and make a PCB.		
Craig Phillip	I have been working on updating the design document, so it is ready for the final revision. I am adding comments so I know what needs to be changed in each person's field and then I am having them update it and send it back to me so that I can compile it all together. I continued to filter down the MOSFET list to find one with a smaller input capacitance that would still work with the current circuit. I sent out the MOSFET list to Jason so that he could find the one that best fit our design and then he added that to the PCB.	8	
Harel Cohen	This week I have finally had the chance to look more into MOSFET driver for a better output. The driver would drive the gate voltage of the MOSFET to higher voltages, and from my findings, there are some drivers with supposedly no lag due to their fully mechanical design with no type of internal clock or any AND/NOR gates.	5	0
Ben Colson	Jason for Ben - Ben has been out due to a funeral, so he hasn't contributed with the team's permission.	0	

Gitlab Activity Summary
Nothing to report.