

# EE 492 Biweekly Report 7

**Timeframe:** 4/6/18 - 4/20/18

**Group:** 38

**Project:** Sensors for Measuring Chemical Content in Soil

**Client and Advisor:** Dr. Liang Dong

**Team Members** – Broken down into 3 group roles (Control Box, Sensor, and Software).

Colin Cox – Software

Jarrold Droll – Sensor

Rachel Hoke – Sensor

Wage Miller – Control Box

Scott Rowekamp - Software

Tyler Thumma – Control Box

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## Summary:

*Control Box* – Tested PCB with charger and amplification circuit for demo. Designed new box files in CAD and got them manufactured. Soldered voltage chargers for client.

*Software* – Reworked parts of the server to make the design more extensible. Documented the API so that it is easier to integrate into the app. Updated portions of the API to work with new data parameters.

*Sensor* – Tested Sensors with various nitrogen concentrations and at different temperatures. During testing applied an epoxy glue to the edges of the working and reference electrodes in order to solve the previous issue we faced during testing with the membranes removing over time.

## Accomplishments:

*Control Box* – We now have a working PCB circuit which we can demo. We also have a box that is cut and ready for use.

*Software* – The server is now more extensible and well documented. In the future it will be easier to add functionality if that is desired.

*Sensor* – Fixed peeling membrane issue that we were facing with epoxy. Fabricated final sensors for project demo. Successfully collected data under various testing conditions for baseline and analysis.

### **Pending Issues:**

*Control box* – All we need to do now is assemble the control box before our presentation Wednesday. We have all of the components completed.

*Software* – The server has a little bit of work left. There are some client-side html pages that need to be finished. The ability to download a csv and resetting passwords also needs to be finished.

### **Individual Contributions:**

Name	Contribution	Hours	Cumulative Hours
Colin Cox	Reworked app added step by step instructions to direct user how to use the app added additional filter for mcu	16	61
Jarrold Droll	Tested sensors in lab across various conditions and recorded results. Researched and tested new solution for peeling membrane issue.	13	51
Rachel Hoke	Soldered and tested sensors in lab across various conditions and recorded results. Tested new solution for	17	60

	peeling membrane issue. Soldered multiple boards for the control boxes.		
Wage Miller	Tested PCB with graduate student. Worked with Tyler and ETG in order to get CAD files for box and to get it cut.	13	53
Scott Rowekamp	The Server	15	57
Tyler Thumma	Tested final PCB. Completed .dwg files for ETG to make final cuts on our Control Box, soldered several Power Charger circuits for our design.	17	60