

EE / CprE / SE 492

**Project title: Small-Form-Factor Solar-Powered Self-Sustainable IoT Sensors with
Long-Range Wireless Communication**

March 26-April 2

Group number: 7

Client &/Advisor: Dr. Cheng Huang and Dr. Meng Lu

Team Members and Roles:

Calvin Condo - Solar Power

Qin Xia - Sensors

Chuxin Chen - Arduino / Sensors

Lun Zhang - Testing/Sensors

Yuchen Zhao - LoRa Wireless module/Arduino

Luke Healy- Testing/Sensors

Where we left off:

The previous week, we were able to get into the lab to test our light sensor more with the specific illuminations that the chemicals emit and do some more research on how to power our device and how to store that power in order to meet the requirement of self-sustainability.

Bi-Weekly Summary:

These two weeks have been especially challenging in that we left for Spring Break and then were put in quarantine due to the Covid-19 outbreak. We met our client last week and talked about the possible changes in our senior project deliverables. The major issues that arise from this situation is that different team members have different parts of the device, making it impossible for other members to work on a specific part that another member has.

Some changes were made to our light sensor code that will theoretically allow the sensor to pick up smaller values of light, but we might not be able to test this because of lab restrictions on Campus.

We were also able to decide on the specific power management components needed to effectively power our device. We decided on a Li-ion battery to store our power.

Pending Issues:

These last two weeks presented a lot of new issues that we were not expecting, including different team members having different parts of the device, not being able to test in the lab, and not having direct access to tools in Coover such as soldering stations. On top of these issues, we still have some previous issues that need attention. We have decided on the implementation for power management, but will not be able to really test power until we have a final PCB printed and functioning. Encasing our finished device in something that will allow accurate sensor readings as well as protecting it from nature has also presented confusion

Team Contributions

Team Member	Contribution	Hours this Period	Cumulative Hours
Calvin Condo	PCB	18	72
Chuxin Chen	Light Sensor Testing	14	56
Qin Xia	Peer Review	14	56
Yuchen Zhao	Light Sensor Testing, Sensor Code	14	56
Lun Zhang	Peer Review	12	68
Luke Healy	Sensor Code, Peer Review	14	70