EE 492 Weekly Report **MAY15-21 Final Report**

Advisors: Venkataramana Ajjarapu **Client:** Venkataramana Ajjarapu

Members (roles):

- Daoxi Sun- *web master*
- Riley O'Connor- *team leader*
- Trevor Webb-*communication leader 1*
- Shihao Ni – *web master*
- Xiaokai Sun- *communication leader 2*
- Ben Ryan- *concept holder*

Project Title: Hybrid Solar Wind Generation System

Summary

At the end of fall semester our team had successfully simulated both the solar and wind generation systems in Matlab Simulink. The challenge for this semester is now to implement our designs with equipment, and produce the desired results.

The wind team has successfully implemented the system as designed, but the boost converter we bought has an unknown issue with connecting to the inverter to power the AC load. We also have an issue with send serial data from anemometer to the microcontroller since Matlab does not supply the code generation. In the demo, we will collect the wind speed data for half hour before start. Then we will import the data into the Matlab at one time. The motor, generator, rectifier and filter all work as desired.

The solar team has successfully implemented the system as described in the Final Design Document. The system includes a variable load that we made and have used to test the solar system up to 400 W. Our goal was to be able to supply a load up to 400 W. When solar is plentiful, the solar power is prioritized over the battery power. The system only relies on the batteries when there is more demand than the generation.

Pending Tasks

1. Final Presentation of our work
2. Demo to IRP