

EE 492 Weekly Report MAY1633 Week 10(3/24/16-3/30/16)

Advisors: Dr. Daji Qiao, Dr. Long Que

Client:

Members (roles): Schilling, Anthony (Team Leader)

Bennett, Tyler (Concept Keeper)

Li, Liuchang (Web Master)

Lin, Haisong

Tian, Yang (Communication Leader)

Wang, Wentai

Time: Mar 30th 2016

Project Title: Portable Nutrient Data Collection System Based on MEMS Sensors and Smartphone technologies

Summary and Accomplishments

This week we make a decision about using which microcontroller we are going to use, build a temporary box and data conversion and data base construction.

WHO	WHAT	HOURS
Anthony	<ul style="list-style-type: none">▪ Bluetooth module chip program testing▪ Sam L21 and Sam B11 testing	13
LiuChang	<ul style="list-style-type: none">▪ PCB design▪ Summary and review of using the Sam B11	12
Haisong	<ul style="list-style-type: none">▪ Testing of the voltage booster and micro discharger device▪ Improvement of the circuits	8
Tyler	<ul style="list-style-type: none">▪ Program coding for the cell phone app▪ Building the database for the data reference	11.5
Yang	<ul style="list-style-type: none">▪ Contact the technician from the company which made the spectrometer▪ USART handshaking communication and testing	12
Wentai	<ul style="list-style-type: none">▪ Case construction▪ Data transmission method testing	10

Meeting notes:

1. Sam b11 will save some time for the programming part, as it has integrated Bluetooth, memory and microcontroller, besides there are still some data transmission problem issues need to be solved. From the software part, Sam B11 chip has different size from the Sam L21chip, some measurement and rearrangement about the PCB chip, and there is no available PCB CAD file for the Sam B11. Building the Sam B11 PCB design will take a lot of time, there may be not enough time to do that.
2. Temporary box has been made and some parts are put in the box to test the space of the box.
3. The data format including the “pixel” information, which are x and y axis and resolution, which could be used to plot a spectrum.
4. To make the voltage booster controlled by the microcontroller so that the system can gathering data at proper time, we need to design simple switch to control the charging time.

Pending issues

1. Anthony is working on Sam B11 and Sam L21 Bluetooth code testing.
2. Tyler is working on the cell phone app programming and data plotting.
3. Haisong is working on testing the micro discharger device and some improvements.
4. Liuchang is working on the PCB design of the board and transfer focus to Sam L 21.
5. Yang is working on data transmission from spectrometer to SAM L21 MCU and contacting the technician from OceanOptics.
6. Wentai is working on space arrangement to fit all system inside the box.