

Group number: 19

Project title: Portable Nutrient Data Collection System - Phase II

Client &/Advisor: Dr. Qiao & Dr. Qeu

Team Members/Role:

Ben Theisen - Group Leader

Michael Rupert - Webmaster

Zakk Belloma - Key Concept Holder

Ben Engebrecht - Communication Leader

Logan Boas - Communication Leader #2

Ryan Young - Key Concept Holder #2

o Weekly Summary (Short summary about what you did this week)

- ◆ We filled out an order form for a breakout board from the spectrometer to a GPIO pin layout. Started setting up and testing the bluetooth chip to an Android smartphone, and creating an app to display the received data. Researched voltage booster concepts and designs and components.

o Past week accomplishments (please describe as what was done, by whom, when)

- Contacted Yang Tian about meeting to get an insight into the previous group's contributions to the project - Rupert
- Attempted serial communication with spectrometer as well as USB communication - Many
- Began researching how to effectively use bluetooth in an Android application - Zakk Ben
- Ordered parts to prototype interface to spectrometer, inspected bus standards to facilitate rapid software to hardware interface - Ben
- Found parts for the voltage booster portion of the design that should allow for a better design - Logan
- Met with faculty mentor to test spectrometer and get some hands-on experience with how it works - All

o Pending issues (if applicable)

- Ordering the microcontrollers that we will use for testing (waiting)
- Get a breakout board for the GPIO pins of the spectrometer (ordered)
- Find out the needed voltage and current for the micro discharge sensor

o Individual contributions

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Michael Rupert	Worked on website, have been experimenting with Markdown to HTML for easy report submission. Haven't deployed it to the ISU site yet, will be before thursday. Met with Yang Tian, took some notes over the issues that he and his team ran into.	4	19
Ben Theisen	Experimented with Bluetooth on Android and creation of app.	4	17
Zakk Belloma	Received HC-06 bluetooth chip, began testing data transfer over bluetooth to android	5	16
Ben Engebrecht	Continued designing communication interface, ordered interfacing boards	4	15
Logan Boas	Researching different DC-DC voltage step up converters, how to build a converter, and what specific parts would be needed	3	16
Ryan Young	Looked into breakout board for spectrometer to send serial commands. further looked into serial commands-RS232-.	5	19.5

o Comments and extended discussion

o Plan for coming week (please describe as what, who, when)

- Meet with advisor on Thursday -All
- Finish up the initial design for website - Rupert
- Write up project plan - All
- Further experimentation with bluetooth and android app -Zakk, Ben T
- Work on extracting data from the spectrometer - Ben E, Ryan

o Summary of weekly advisor meeting (if applicable/optional)

Discussed ordering of the needed breakout board, filled out that form and submitted.

Discussed voltage booster circuit design and purchasing, decided against ordering a generic circuit through eBay.