

Group number: 22

Project title: Smartphone based nano-device for human breath sensing

Client &/Advisor: Prof. Long Que

Team Members/Role: Jared Smiley-Team Leader, Zhaobo Huang-Webmaster, Mengzhou Sha-Communication Leader, Concept Holder-Xin Chen

o **Weekly Summary**

This week we completed most of the design document so that next week we can proofread and submit it. Additionally we researched how to determine what angles in the spectrometer we need to build will give us the correct image on the camera. We found what angle the light should come into the spectrometer, what angle the diffuser panel should be at, and then what angle different frequencies of light will leave the spectrometer. These angles will allow us to determine where on the screen different frequencies will land. We found that our test device a nexus 7 has a camera that is 2592 pixels wide and a lens can focus the diffracted light so that it utilizes the whole width. We found that we need to determine whether we want our spectrometer to only be compatible with one device or several different tablets and smartphones because this could mean that the image detector size will change and the distance from the diffraction grating to the camera must change to get an image that we can use to determine frequencies. This is a question for our mentor at next week's meeting.

Past week accomplishments

- Xin: finished testing/development section of design doc
- Mengzhou: finished introduction section of design doc
- Zhaobo: finished results section of design doc
- Jared: Wrote design section of design document, found resources for determining angles, created preliminary design for angles

o **Pending issues**

o **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Xin	Attended project work meeting, worked on Matlab code, wrote part of design doc	2.5	16.5
Mengzhou	Ditto	2.5	16.5
Zhaobo	Ditto	2.5	16.5
Jared	Ditto	2.5	17

o **Plan for coming week**

- Xin: Transfer Matlab code to android app, discuss website plan, present finished matlab code to mentor, test code, start 3d design
- Mengzhou: Transfer Matlab code to android app, discuss website plan, present finished matlab code to mentor, test code, start 3d design
- Zhaobo: Transfer Matlab code to android app, discuss website plan, finish design doc, present finished matlab code to mentor, test code, start 3d design
- Jared: Transfer Matlab code to android app, discuss website plan, finish design doc, present finished matlab code to mentor, test code, start 3d design

- **summary of meeting with our professor**

N/A