EE 491 Weekly Report
MAY15-29   Week 10 (11/03/14-11/09/14)

Advisors: Meng Lu   **Client:**

Members (roles): Wenbing Ma（coding）, Jiangxiang Zhang, Xuan Zhang
(Webmaster) , Zhikai Cui (Leader), Chenyin Liu(sample holder design)
Project Title: A high resolution two-dimensional ultrasonic detector using plasmonic
crystals

Weekly Summary   :This week, members get involved into the solving problems heppened in the process of setting up so far. We spend some time on how to make the equipment looks better and easy to understand. Since we just have 4 more weeks to make presentation, we are preparing how to show people how fancy the project is.

ok
Meeting notes:

11/8   Group Meeting with Advisor

Duration: *60min*   **Members Present:** *All*

Purpose and Goals:
1.   Test the sensor to make sure the sensor works
2.   Finish the sample holder and make sure the water will not come throught the water container.
3.   Use camera to take picture of all checking process to upload to internet

Achievements:
1.   the sample holder is successfully finished
2.   The sensor can be put inside the sample holder.

Pending issues

The power cable has not been connected to acoustic scope, the scope need 110 voltage. We all thought the making process would be dangerous. We will go to machine shop or ask some professional people for assistant.

Plans for next week

Wenbing Ma & Zhikai Cui

- wait for the correct DAQ to arrive
- help the members to finish the team webstie
- Aid help to the power cord setup for the PCB board
- Do coding for the Measurement computing DAQ(the new one about to arrive)

Jiangxiang Zhang:

- Since the sensor is already finished. The next step is testing.
- Assist Chenyin's group to finish the setting up and make another model to test
- Help member to finish the website
- Help members to finish coding and design for scope and CCD camera.

Xuan Zhang & Chenyin Liu

- Help Jingxiang set up the equipment of optical process.
- Use a speaker instead of the acustic wave transducer to do the first expriment
- Test the sensor and try to collect the first version of data
- Wenbing and Zhikai will sketch the data into scope and figure
- Our website will be transferred from Weebly.com to signed web address located on IASTATE.COM domain
- Be ready to take picture within CCD camera

Individual Contributions (this week)

- Wenbing Ma attended the meeting(1hr), Spend time reading instruction sheets(2hr), User manuual for USB 3103 (3hrs). Setup the software for USB 3103(1hr), found out USB3103 is not the correct type that we intend to have(1hr). Start learning codeing for Measurement Computing(Universal Language) (2hr)

- Jianxiang Zhang attended the meeting(1hr), talk with some professional people for manufacturing assistant for 5 hours. Check the valid for sample holder to make sure it works properly for 2 houres. assist chenyin Liu to make the setting up(2hrs)..

- Xuan Zhang attended the meeting.(1hr) Sample holder & machine shop.(3hrs) Learn how to set up device.(4hrs)

- Zhikai Cui attended the individual meeting   (1hr), Spend time
  User manuual for USB 3103 (3hrs). Setup the software for USB 3103(1hr), found out USB3103 is not the correct type that we intend to have(1hr). Start learning codeing for Measurement Computing(Universal Language) (2hr)

- Chenyin Liu attended the meeting.(1hr, talk with some professional people for manufacturing assistant for 5 hours. Check the valid for sample holder to make sure it works properly for 2 houres. Go to machine shop to pick some tool for making-1 hours. Search for some information about connecting cable 2 hrs.) ,
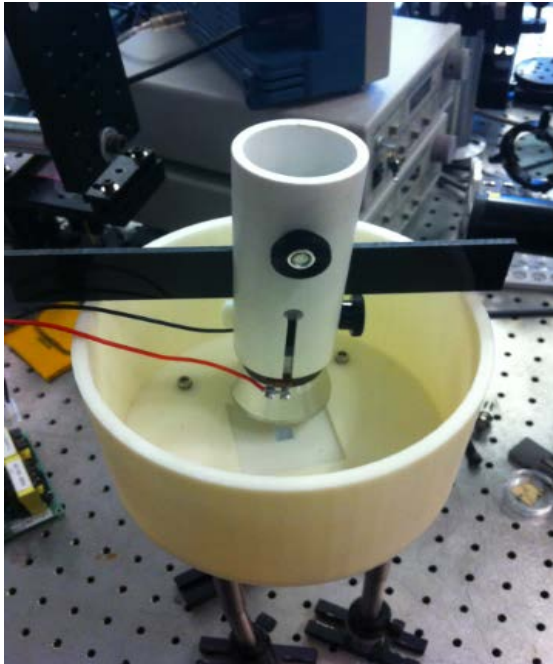
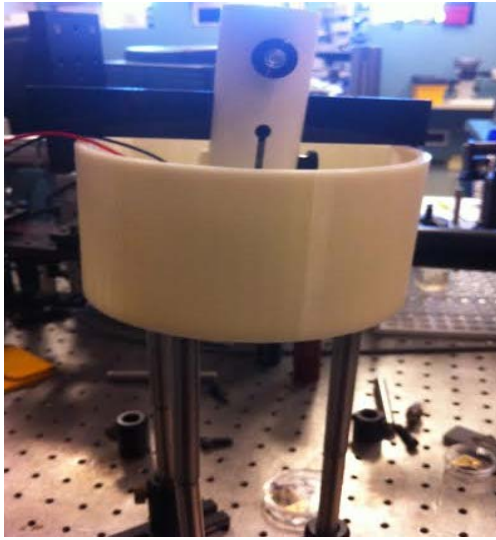## Total contributions for the project

Wenbing Ma (10 hr)

Jiangxiang Zhang (11hr)

Xuan Zhang (10hr)

Zhikai Cui (10hr)

Chenyin Liu (11hr)

Parameter	Value
Readout noise (KAF401e sensor)[1]	15 e- RMS
Transfer constant	1.01 e-/ADU
Readout time KAF401/402 (KAF1601/1602)	2 s (8 s)
Analog to digital converter resolution	16 bits
Main camera cooling below ambient[2]	40-45 °C
Maximum data rate into PC (16 bit data)	0.5 MHz
Communications interface	USB 2.0
Number of independent control lines to CCD board (output only)	8
Parallel I/O ports	1 bidirectional, 1 output
Filter wheel control	12-24V DC drive, w. position sensor
Shutter control	6V Uniblitz or other 6V solenoid
Input power	10-14 VDC, 8A maximum draw
Power dissipation	Standby: 8.8 W Cooling off: 11.5 W Cooling on: 41 W
CCD output amplifier turn-off during integration	Software selectable