EE 491 Weekly Report
Week 4(9/22/14-9/28/14)
Group number: May15-29
Advisors: Meng Lu **Client:**
Members (roles): Wenbing Ma, Jiangxiang Zhang(sensor design), 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 : **Members did assignment for each part. All members get process for each part. We learned how to design for our part and we feel confident for what we did. We trust it will be a good project.**

Meeting notes:
9/27 Group Meeting with Advisor
Duration: 60 *min* **Members Present:** *All*

Purpose and Goals: Members know each assignment more clearly, members realized that assignment is not an easy one. We made the assignment plan and we try to finish the first stage in two month.

Achievements:
1. The solid work design is almost done. We need one or two days to improve the design and then we will use 3-D printer to print it out.
2. Labview is connected to oscilloscope with standard program.
3. C++ code of motorized stage is achieved.
4. The measurement of wavelength (1D PDMS, 2D PDMS) has finished.

Pending issues: 1. The material of making sample holder is still in discussion.
          2. Unstable connection status between oscilloscope and labview.
          3. There is no significant deep shown on the waveform of the PDMS transfer function. Will explore one more material for sensitivity testing.

Plans for next week
Xuan Zhang and Chenyin Liu
 - use 3-D printer to print the sample holder.
Wenbing Ma and Zhikai Cui
 - plan to write labview code to utilize motorized stage.
 - get labview ready for receiving laser signals under certain frequency transmitted by oscilloscpe.
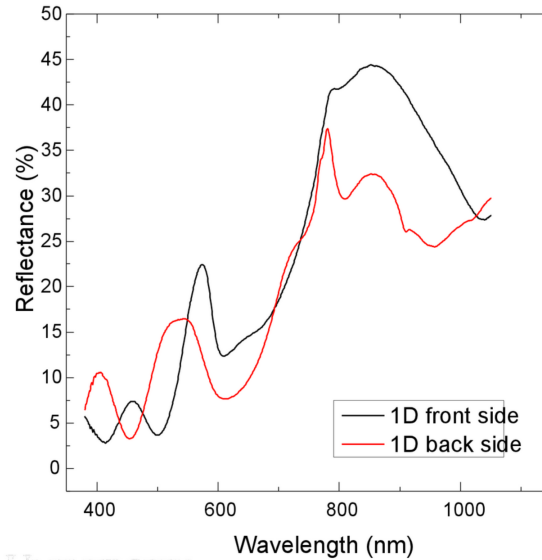Jingxiang Zhang
- Finish new material for testing.
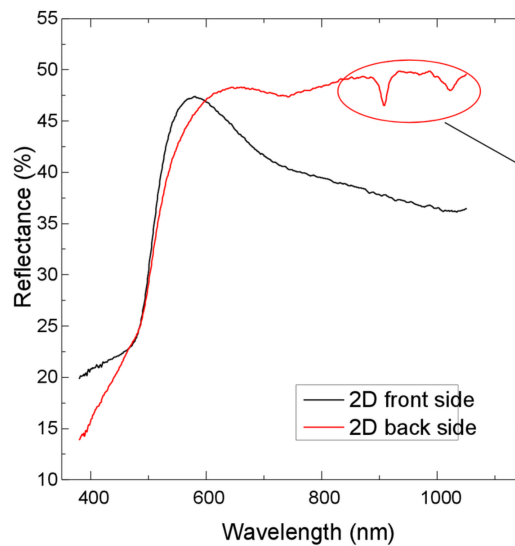- Figure out which material is best for making the fiber tip sensor.

1D (measured by filmetrics)

2D (measured by filmetrics)

For 2D device, the spectrum not shown very good, is this because the material for 2D grating is not h-PDMS?

The reason is might be the regular PDMS can not transfer grating very well for 500 nm pattern.

Are these deeps we expect?

Individual Contributions (this week)
- Wenbing Ma attended the meeting(1hr). Connect labview with oscilloscope(2hr). Do research for the datasheet of the oscilloscope and photodetector(1.5hr)
- Jingxiang Zhang attended the meeting(1hr). Finished the measurement of wavelength(1.5hr). Explored the new materiel property(1hr).
- Xuan Zhang attended the meeting (1hr).Use Solidwork to Design the sample holder

and check the 3D printer with College of Design.(2 hr)

- Zhikai Cui attended the meeting(1hr). Connect labview with oscilloscope(2hr). Write sample labview code for motorized stage(2hr)
- Chenyin Liu attended the meeting (1hr). Designed the website (1 hr). Design the sample holder in Solid work software.(2 hr)

Total contributions for the project

Wenbing Ma (4.5hr)

Jiangxiang Zhang (4.5hr)

Xuan Zhang (3hr)

Zhikai Cui (5hr)

Chenyin Liu (4 hr)