***EE 491 WEEKLY REPORT 6 Date: 10/11/16-10/17/16***

***Group number: 24***

***Project title: Ultrasound Water Purification***

***Client &/Advisor: Prof Bigelow***

***Team Members/Role:***

***Jacob Bernhard/Team leader***

***Yuhao Fu/Team Communication Leader***

***Parker Oltrogge/Team Webmaster***

***Subin Mao/Team Key Concept Holder***

***Xiyuan Wang/Team member***

***Tao Wu/ Team member***

* **Weekly Summary**

On the meeting this week, our group discussed the design of housing (the cover that has a focal point at the middle top above the transducer ). We need to have our own design ready for next week’s meeting. Furthermore, we had a brainstormed about the transducer that we will use based on the research.

* **Past week accomplishments (please describe as what was done, by whom, when)**
* Jacob Bernhard: Found suitable transducers via humidifiers, and worked on the housing unit using autocad software.
* Yuhao Fu: Write the project plan and designed the housing of the transducer by solidworks; Weekly Report
* Parker Oltrogge: designed the housing of the transducer
* Subin Mao: Create my version of transducer Housing in solidworks.
* Xiyuan Wang: Construct my version of the transducer by solidworks.
* Tao Wu: helped to write draft of project plan and designed the housing of the transducer by solidworks
* **Pending issues**
* Jacob Bernhard: Issues with the transducer misting the water so that the water mists rather than humidifies the water in order for it to catch easier.
* Yuhao Fu: Since the distance from the water to the focal point is 54.8mm, I am wondering where should I put the transducer in order to pimp the water out through the focal point. Also, we are still struggling with the Network Analyzer, it is way too expensive (5000 dollars) to buy a new one that will suit our system.
* Parker Oltrogge: I am overly worried about the scope of water testing. Many tests of water safety can be very expensive and time consuming. There is also the issue of to what parameters we are setting our water quality to, High standard of living countries might have overly tight constraints that an individual in dire need of safe water might not care about.
* Subin Mao: not familiar with the transducer’s parameters, the housing for it might not fit.
* Xiyuan Wang: I just designed a transducer, but there are still some details that are not clear.
* Tao Wu：missing data about the housing I created. If the thickness doesn't matter? Didn't have a clear mind of how to keep the water level. Also, need to know how to avoid water to spread out. Since bottom of the housing is open. Still need to design another part to fix it.
* **Individual contributions**

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| --- | --- | --- | --- |
| **NAME** | **Individual Contributions** | **Hours this week** | **HOURS**  **cumulative** |
| **Jacob Bernhard** | Draft of Transducer/ Finding suitable secondary transducer | 4 | 15 |
| **Yuhao**  **Fu** | build the draft version of transducer’s housing/work on project plan | 5.5 | 16.5 |
| **Parker Oltrogge** | drafted transducer housing in solidworks/ worked on project plan | 5.5 | 16.5 |
| **Subin Mao** | Create my version of transducer in solidworks | 5 | 15 |
| **Xiyuan Wang** | Construct my version of the transducer by solidworks | 5 | 16 |
| **Tao**  **Wu** | provide my version of the housing/worked on project plan | 5 | 16 |

* **Comments and extended discussion**

Our group has already built the basic idea of the whole project: Purifying system and Testing system. The thing is we are facing the huge problem in Purifying system - transducer. If we use our own transducer, we need the Network analyzer to test if it is matching or mismatching, but it is way too expensive! and the one that professor has is industrial serving. We have discussed it during next week’s meeting with professor and move on to the testing system.

* **Plan for coming week**
* Jacob Bernhard: Additional meeting set up with Bigelow to go over purchased transducer.
* Yuhao Fu: We will design the floating system to let the water float into the housing and float out of the housing. the material of the floating system will be the major issue we will face.
* Parker Oltrogge: Doing research about water testing
* Subin Mao: evaluate everyone’s transducer housing, Pick the best transducer housing; decide what material used for housing
* Xiyuan Wang: I will choose one of the six transducer to be our best with my teammates and we will use this best transducer as a part our project.
* Tao Wu: try to figure out second draft of the housing. Find out how to keep water floating into the housing. See how transducer works and find a suitable one for us.
* **Summary of weekly advisor meeting**

We will meet professor Bigelow next Week.