

EE 492 Progress Report 2

MAY 15-26

Advisors: David Jiles and Ravi Hadimani

Client: Iowa State University/Magstim Company LLC

Members (roles): Jessica Staley (GUI/Leader), Saurabh Minocha (SEMCAD/Webmaster), Anqi Deng (3D Design & Modeling/Communication), Yixiao Shen (Comsol/Key concept holder)

Project Title: Design and Development of Adjustable Halo coil for Non-Invasive Treatment of Brain Disorders

Summary

The main goal this period was to collect our hardware part and set up the wireless communication element, we also assembled the standing system to support the Halo coil.

Meeting notes

02/11 Group meeting with advisor

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

02/18 Group meeting with advisor

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

02/25 Group meeting with advisor

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

Purpose and Goals:

We presented our personal progress for the previous week every week to our advisor and seek advice on ordering part after our research and ask advisor to order them.

Achievements:

1. Got all hardware we need ordered
2. Soldered the wireless module and shield to communicate with Arduino board
3. Assembled the frame and the plastic part together to support the coil

Pending issues

1. Resolve issues on the wireless module
2. Research for proper support part for grap the cord of the coil

Plans for next period

Jessica: Troubleshooting the wireless module to communicate with each other, start working on the rotational issues, get communication of the bluetooth part.

Saurabh: Continue with SEMCAD simulations on Duke head model and start rotations.

Anqi: Modify the helmet structure when testing the coil's movement, help to get wireless communication to our design.

Yixiao: Assemble the new linear actuator and write code for it. Calibrate the hardware in order to make actuator running exactly like what we want it to be.

Contributions (individual)

Jessica Staley: Attended meeting, began troubleshooting the existing linear actuator movement, researched how to program for the rs232 connector, calculated and coded in the rotation movement, troubleshooted the wireless communication.

Saurabh Minocha: SEMCAD simulations for 0 degree rotations and 5 degrees.

Anqi Deng: Attended the meetings, solder the wireless module and shield, assemble the standing system and write progress reports.

Yixiao Shen: Attend the meetings, give idea of the design. due to the fact that our linear actuator does not arrives, I have to doing research again to find a substitution to fit our schedule.