

# EE 491 Weekly Report    MAY 15-26    Week 11 (11/10/14-11/16/14)

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**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

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## Weekly Summary

The main goal this week was to talk about our new design. We had a lot of progress for everyone in terms of new results for simulation and design modeling. And the other thing we talked about was how we would go about our final presentation.

## Meeting notes

11/10    Group meeting with advisor

**Duration:** 60 min

**Members Present:** All

### Purpose and Goals:

We met to talk about the past two weeks' progress. We presented our two weeks' individual works to our advisor and found out the expectation from our advisor and pending issues we should work on.

### Achievements:

1. Shared everyone's progress.
2. A hardware part ordered.

## 11/14 Group meeting with members

**Duration:** 60 min

**Members Present:** All

### **Purpose and Goals:**

The purpose of this meeting was to talk about our final presentation. We went through the guidelines of our presentation and checked what contents we should focus on in the remaining time. We also checked our Gantt chart to keep up with our plan.

### **Achievements:**

1. Detailed contents decided for individual parts of our final presentation.

## **Pending issues**

1. Ask advisor about some parts in our final presentation.
2. Get our planned things done by the end of Thanksgiving.

## **Plans for next week**

Jessica Staley: Finalize rotation code, continue working on remote start for treatment.

Saurabh Minocha: Do complete simulations for halo coil on a heterogeneous model for different angle of rotation and record results. Start looking into python code for improvement in simulations.

Anqi Deng: Modify the accurate dimensions of the linear actuator in the model and change some animation to get a better appearance to later presentation.

Yixiao Shen: Prepare for the presentation; simulate the new design in terms of heat and force use COMSOL.

## **Contributions (individual)**

Jessica Staley: communication between members and Professors, attended the meetings, gave ideas of the report, researched possible linear actuators for design, continued to work on remote start from treatment ( 8 hrs.)

Saurabh Minocha: attended the meetings, helped compile the report, Semcad simulations for halo coil on homogenous head model. (9 hrs.)

Anqi Deng: Drew all parts of our new design, made animation for Halo coil, ordered hardware part and tried it on the coil, compiled the report, attended the meeting, and gave ideas of the report (10 hrs.)

Yixiao Shen: Simulate the heat and force of our design in COMSOL, attended the two group meeting, gave ideas of the report, prepare for the presentation. Meet with COMSOL masters to solve problems of my files. Give idea of structure design. (7hrs.)

## **Contributions (Total)**

Jessica Staley: 78 hrs

Saurabh Minocha: 81 hrs

Anqi Deng: 82 hrs

Yixiao Shen: 81 hrs