Senior Design 491 - May1629 - Weekly Report 9

Advisor: Dr. Ravi Hadimani
Project: Development of "Triple Halo Coil" for Deep Transcranial
              Magnetic Stimulation
Client: Dr. Ravi Hadimani / Dr. David Jiles
Members: Wentai Wang
              Aashwatth Agarwal
              Dylan Jagger Rasmusson
Date: 11/03/2015

Summary

(Dylan Rasmusson)

As of now, each team member's work is independent of the others so the majority of the meeting was explaining our individual progress and duties. Wentai is contacting Magstim for the pin configuration of previous TMS coils so we can replicate it for the *Triple Halo Coil*. He is also in the process of ordering the copper for the new coil. Dylan is efficient in COMSOL and is ready to run simulations on the *Triple Halo Coil* design. The elliptical coils must first be designed in SolidWorks, then exported to COMSOL.

Group Meeting Notes
- Discussed individual work
- Reiterated our responsibilities
- Discussed what we can do to improve
- Due to independent work the meeting was brief

Advisor Meeting Notes
- Confirmed SolidWorks should be used for coil design
- Discussed coil configuration
- Confirmed copper wire dimensions
- Discussed lack of communication among team members
- Addressed issues within the team

Accomplishments

- Dylan is efficient in COMSOL (can run needed simulations)
- Progress made in coil design in SolidWorks
- Made contact with Magstim

Plans for Next Week

- Order copper coil
- Continue contacting Magstim
- Run simulations of figure-of-eight coil in COMSOL
- Finish elliptical coil design in SolidWorks
- Verify all required specifications for Triple Halo Coil

Pending Issues

- Getting Pin configuration from TMS Coil
- Aashwatth has been absent due to health

Individual Hourly Contribution

(Wentai Wang)

Keeping contact with Magstim company and asking for pin configuration. He also found 5 copper company and sent email to order a 1mm thickness and 5mm width copper coil. However, he met problem on measuring the resistances during different pin and will solve it next week.

(Dylan Rasmusson)

Dylan spent several hours training himself in COMSOL. He completed several simulations involving multi turn coils. He has been able to simulate and plot values of magnetic flux density, Maxwell's stress tensor, Lorentz's force, Joule heat, induction heat, and Von Mises stress.

He also started working with SolidWorks to design the elliptical coils for the Triple Halo Coil. Some time was spent learning SolidWorks and researching the best way to design an elliptical coil.

Name	Hours this week	Work
Wentai Wang	5.5	Fabrication prepare Weekly Report
Aashwatth Agarwal		
Dylan Rasmusson	10	COMSOL, SolidWorks, Weekly Report