

Fast, Compact, High Strength Magnetic Pulse Generator

EE 491 Weekly Report

May 15-30

Week 10 (11/3/14-11/10/14)

Advisors: Mani Mina, John Pritchard, Robert Bouda
Client: High Speed Systems Engineering Lab
Members: Team Leader – Adam Kaas
Team Webmaster – Gregory Fontana, Meiyong Himmtann
Team Communication Leader – Brittany Duffy
Team Key Concept Holder – Megan Sharp, Brandon Dixon
Team Commissioner – Alain Ndoutoume
Website: <http://may1530.ece.iastate.edu>

Weekly Summary

This week, the MOSFET and coil teams grouped up to test simulations. After deciding on the necessary coil to meet design specifications, we researched various MOSFETs to meet the needs of the coil design. We found a suitable MOSFET and ran simulations on this design. Currently, we are working on getting a layout in place for the schematic created in ORCAD. After further testing, we may decide that this is the design we will want to use as a final product for this semester.

Meeting Notes

11/03 Group meeting with core members

Duration: 1 hour **Members Present:** All members

Purpose and Goals:

This is a weekly meeting where members gave individual reports and expectations for the week ahead.

Achievements:

All purposes and goals were met. Work that needed to be completed this week is as follows: Adam and Greg test Gauss meter. Brittany send out instructions about Project Plan 2. Megan build single and Helmholtz coil with the single coil being the primary coil. Brittany and Greg will work with Megan to choose a MOSFET so we can have a somewhat finalized design for next week.

11/03 Group meeting deciding on circuit components

Duration: 2.5 hours **Members Present:** Brittany, Greg, Meiyong, Alain, Megan

Purpose and Goals:

Research MOSFETS and try to find one that has the qualities that we need. Test any possible MOSFETS in ORCAD to verify.

Achievements:

Found a suitable MOSFET and tested it in ORCAD. The part has necessary switching speed and can handle a large amount of current. We gave part number to Comish to order some for on the board testing.

11/03 Group meeting with soldering components and testing prototype

Duration: 1 hour **Members Present:** Meiyong, Alain

Purpose and Goals:

Stayed in the lab after the team meeting to work on the LED circuit board we created the previous week. Put the circuit together and did some soldering. Get the LED to blink as it is supposed to.

Achievements:

Did the soldering properly. Put circuit together. But we could not get the circuit to blink as expected. Meiyong worked on it again later and re-did the soldering. The LED circuit eventually blinked as expected.

Pending Issues

N/A

Plans for Next Week

Adam: Finish Project Plan v2, Assist where needed to ensure we have all parts ready to populate the finish design Brandon will be working on.

Greg: Finalize project plan. Work on figuring out what other parts we need for the circuit, resistor sizes and diode types. Will work with Brittany and Megan on this.

Meiyong: Help finish the project plan. Hopefully get a new prototype made with the updated layout from Brandon.

Brittany: Continue working with Megan and Greg to have a solid design ready for demonstration. Work on powerpoint slides for the demonstration. Finish Project Plan 2.

Megan: Continue working with Brittany and Greg to find a final circuit design for this semester. Work on Project Plan 2. Continue to look into MO materials.

Brandon: Finish schematic and layout so it can be created on Protomat.

Alain: Work on the next to-do list with team members. Work on the new circuit board with the new mosfet test it and create it.

Adam: Attended core team meeting (1 hr), Revisions/Additions to Project Plan (3 hr), Started Powerpoint Presentation (.5 hr)

Greg: Attended core team meeting on Monday (1hr), Chose a MOSFET and tested it with team members (2.5hrs), Researched possible resistor and diode types (1hr), reviewed project plan (1hr)

Meiyong: Attended core team meeting on Monday (1 hr), attended team meeting to decide on circuit components to order (2.5 hr), Built circuit on prototype board (1 hr), updated website template/design (2 hr), reviewed project plan (.5 hr)

Brittany: Attended core team meeting on Monday (1hr). Create Project Plan template (.5 hr). Attended team meeting to decide on circuit components to order (2.5 hr). Revisions/additions to project plan 2 (4 hr). Wrote weekly report (0.5 hr).

Megan: Attended core team meeting on Monday (1 hr), attended team meeting to decide on circuit components to order (2.5 hr), met up with Joshua from EE492 to practice making coils and compare information (1hrs), researched MO materials (1hr)

Brandon: Attended core team meeting on Monday (1 hr), researched components picked by the team on Eagle and Digikey and tried to find them or their equivalents (2 hr), reworked circuit schematic (1 hr), worked on project plan 2 (1 hr)

Alain: Attend team meeting monday (1hr), test the LED circuit with Meiyong but didn't work at first (1hr), work on project plan 2(1hr)

Total Contributions for Project (This Week / Total for Semester)

Adam: 4.5 hrs/ 41.65 hrs

Greg: 5.5 hrs /38.25 hrs

Meiyong: 7 hrs/ 43.75 hrs

Brittany: 8.5 hrs/ 58.3 hrs

Megan: 5.5hrs/ 40.5 hrs

Brandon: 4hrs/ 40.25 hrs

Alain: 3hrs/ 36.25 hrs