

EE 491 WEEKLY REPORT 6

Project title: Fast, Compact,
High, Strength, Magnetic
Pulse Generator

Group number: DEC1622

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Team Webmaster: Wing Yi Lwe

Team Communication Leaders: Jia yu Hong

Key Concept Holder: Aqila-Sarah Zulkifli

Weekly Summary

The team's initial progress for the week was relatively slow when compared to previous weeks. Ongoing simulation tests yield unfavorable results which is partly due to the fact we were unable to import Spice files of newer components into MultiSim. We relied on built in components which, while some displayed encouraging output, are out of date and no longer in the market. This is a bummer as we will need to get a physical component later on for further testing using fabricated boards. Physical tests using components obtained from the parts shop is also not going really well. We encountered a current sink situation and further trials will be needed on this front.

Meanwhile, the team is also busy working on the website. The website is now online but still in need of much work. Documents are also being uploaded as we write this report.

At the end of the week, we had a really fruitful meeting with our adviser which helped escalate our progress. We learn more about the theories behind this project which in turn helped us to make better judgement when it comes to selecting components. We also managed to import Spice files onto OrCAD PSpice. While the week was almost over, this opened the door for quicker simulations for the upcoming week. We were also given simulation files from the previous team which will also be of tremendous help.

Past week accomplishments

Everyone tested and simulated different MOSFET switch in Multisim, and we failed for several trials. Weishen and Jiayu built circuit on bread with Darlington switch, but we did not manage it work. The circuit encounter current sink situation, so we are gone to troubleshoot next week. Originally, we had problem about import new components' libraries, but Weishen managed to work in Psice during weekend.

Pending issues

We need take photos for our website. We need to answer how we can create high current and high voltage. We do not have our design document yet, so we still need to catch up to finish our design document.

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Wei Shen Theh	Simulation using Multisim and physical test. Researched on how capacitors help increase current. Investigated steps to import external Spice files into OrCAD.	6	21
Wing Yi Lwe	Helped with the weekly report, trial and error run with MultiSim, reading previous projects, reviewing magnetism concepts, updated info on website	6	16
Jiayu Hong	help updating website, built physical circuit, simulated in Multisim, made sure members contributed on the weekly report and submitted the report	6	17
Aqila-Sarah Zulkifli	Learned how to do Simulation, did simulation using MultiSim, and helped with the weekly report	4	15

Summary of weekly advisor meeting

We had two meetings this week, one on Monday with Neelam and another on Friday joined by Dr. Mani Mina. Wei Shen and Jia Yu showed their breadboard circuit and explained their attempts on testing it. We were advised to return to the basics such as paying attention to capacitors and inductors and their roles in building this magnetic pulse generator. There were also problems with downloading new component libraries to use for simulation. We also clarified our goals for this semester and the following semester which is to successfully recreate the magnetic pulser of a previous team and improve it the next semester. Hopefully, although we had a late start, we will be able to produce a satisfying outcome that meets our goals.

Plan for coming week

Our plan for this coming week is to do simulation using PSpice and Multisim. Wei Shen have figured out how to import external SPICE files into PSpice so we will try that using few steps given. Besides, we will still be working on our website as it is still not finished yet. One part of the website that we have to finish by the end of next week is our group profile. Last but not least, we will be having meeting with Neelam on Monday to discuss more about how to obtain high current and how camera flashes work. We will also be meeting with Dr. Mani Mina on Friday if he has free time to discuss more about the progress of the project.