

EE 492 WEEKLY REPORT 5

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

Group number: DEC1622

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Team Leader: Wei Shen Theh

Team Webmaster: Wing Yi Lwe

Team Communication Leaders: Jia yu Hong

Key Concept Holder: Aqila-Sarah Zulkifli

Weekly Summary

For this week, we will be working on new coils for our project. We will be making a bigger inductance coil and a smaller one. Both inductance values will be calculated beforehand for future simulation purposes. The coils will from this point on act as our default coils in an attempt to keep out variables consistent.

Past week accomplishments

We realized that we did not have fixed inductor that we can consist to work on. After discussion, Wei Shen Made two coils with different values. According to the number of turns, length, and radius, we can rough calculate inductor values based on equation $L=(\mu \cdot N^2 \cdot A)/l$. We also check with

website <http://hyperphysics.phy-astr.gsu.edu/hbase/electric/indsol.html>

We currently have 2 coils:

- 1.102nH (thicker wire AWG=18, length:0.6cm, radius:0.25cm, turns:5)
2. 78.9nH (thinner wire AWG=24, length:0.5cm, radius:0.2cm, turns:5)

Based on our new coils, we restarted measurement that included transition time, computation is about 10% output to 90% output and 20% output and 80% output, and average voltage.

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS</u> <u>cumulative</u>
Wei Shen Theh	Made new coils, calculated coil inductance values	4	75
Wing Yi Lwe	Attended group-advisor meetings, weekly report	3	64
Jiayu Hong	Made new coil, calculated coil value, worked on new measurements, made sure members contributed on the weekly report and submitted the report	5	74
Aqila-Sarah Zulkifli	Attended group-advisor meetings, weekly report	3	63

Summary of weekly advisor meeting

With the new inductors, we can test them using our prototype boards and observe the difference in output it might make. From there we can gauge on perfecting the coil to get better results. However we know the results may differ if we designed a new board but will continue trials until it arrives and hopefully will not have to make too big of a change to the coil that we build.

Plan for coming week

Our plan for this coming week is to do some research on the new FET which has the specifications that we need for our project. In our case, we need a MOSFET that allows high current with lower input impedance. We might as well try to look at John's FET and see if it matches the specification that we need. Besides that, we will be redesign our PCB board since we will have a new FET and we will do more testing. We will also check on the components left and make an order list for more components that we need. Other than that, we will be having our regular group meeting on Wednesday at 3:30PM and continue with our project.