

EE/CprE/SE 491 WEEKLY REPORT 5 (12/1/19 – 13/12/19)

Group number: sdmay20-27

Project title: Gauss Sensor for Magnet Array Filter

Client: Dennis O'Neel

Advisor: Dr. Mani Mina

Team Members/Role:

Muhammad Lutfi Latip -Team Manager

Irfan Rafie – Test Engineer

Vishal Patel – Meeting Scribe

Muhammad Aiman Zulkefli – Research manager

Wei-nee Long – Report Manager

o Weekly Summary

For the last few weeks of 491, the team is trying to finalize the contents of the design document as we make changes along the way. On the other hand, we were able to obtain authorization to access the testbench that will be used to test the system. The initial testing is done in order to gain data that would help us determine the right sensor to be used for our product. On the other hand, this testing is also done to check if we have calibrated our sensors properly.

o Past week accomplishments

- 1) Getting our first prototype ready for the initial testing.
 - a) This includes getting the printed boards as well as soldering the sensors to them.
 - b) Cutting PVC that will be used to attach the PCB and to be placed on top of magnetic array collar.

o Pending issues

- 1) The difference in fluid used in the testbench.
 - a) The testbench is only designed for hydraulic fluid and we would also like to test the system using engine oil as our product will also be attached to vehicles.
 - b) The team should find a way to test the system using engine oil which has different properties compared to hydraulic fluid. Thus, the data received will also be different.

- 2) *Everyone: Determine the best position of Hall Effect Sensors on the filter*
 - a) We need to research and conduct testing to determine the optimal position to place the sensor in the filter collar and research on how to accommodate that into our circuit design.

o Individual contributions

NAME	INDIVIDUAL CONTRIBUTIONS	HOURS THIS WEEK	HOURS CUMULATIVE
Muhammad Lutfi	<ul style="list-style-type: none"> - Acquired authorization to access The Danfoss Mechatronics and Agricultural Sensing Lab 2205 Sukup Hall. - Ensure that the team had adequate equipment for the initial testing. This includes confirming with Dr. Steward if he has the right fitting to attach the filter to the system. 	12	72
Irfan Rafie	-	12	72
Vishal Patel	-	12	72
Muhammad Aiman	<ul style="list-style-type: none"> - Contacted Cyride regarding the opportunity to collaborate with them - Explained to Cyride that we decided that we will put on hold on using the used engine oils for the testing since Dr. Steward insists that the setup for his lab is only for hydraulic 	12	72
Wei-nee Long	-	12	72

o Plans for the upcoming week

- 1) Plan how the group should progress as we transition into 492 and reflect upon our work in 491.
 - a) The reflection should be used to improve the quality of our work and also
 - b) increase in the team's productivity.

- 2) Examine the data that we received for our initial testing and determine the type of sensor that we would want to use for our product.