Internship 2022

Progress report format for team meeting

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23/02/2022 - 01/03/2022

Tasks completed last week

- [#85] Preparation of Potassium Perchlorate
- [#19] Iterative static firing test (Second, third, fourth)
- [#56] Fuel casting
- [#68] Ignition testing

POTASSIUM PERCHLORATE

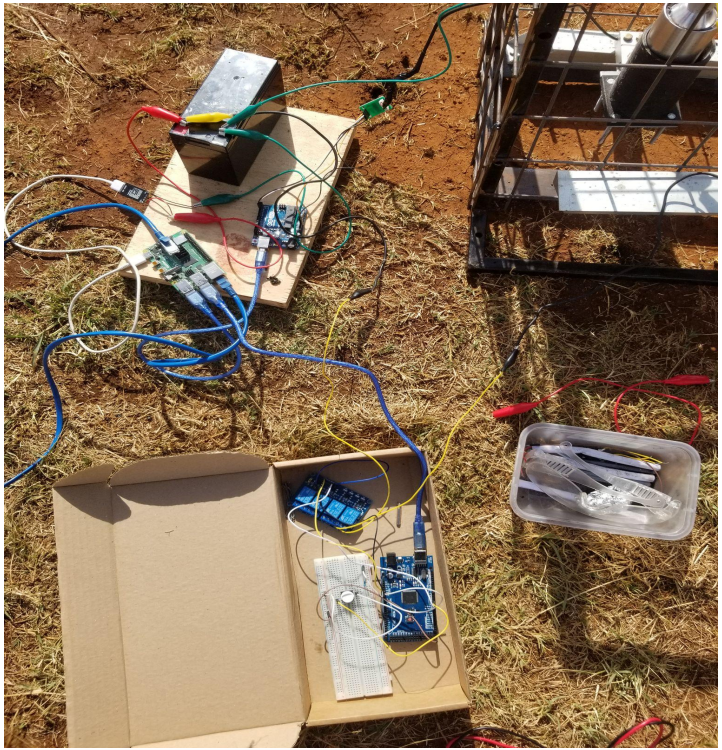
- We used the thermal decomposition of Potassium Chlorate to obtain Potassium Perchlorate and Potassium Chloride.
- The whole process was not successful because;

1. The Potassium Chlorate did not fully melt as expected.
2. The melted potassium chlorate did not crystallize to form potassium perchlorate on dissolving in hot water.

- We are going to try the other method, which is the treating of an aqueous solution of Sodium Perchlorate with Potassium Chloride.

STATIC FIRING TEST

- We did the second, third and fourth static firing tests.
- In the second test, the fuel did take a shorter time to burn out, compared to the first, but there was no data collected, just spikes.
- In the third test, the fuel did take longer to burn out compared to the second one, but data was collected and a curve drawn out of it.
- For the fourth test, we implemented the new dashboard. The fuel did burn shorter and data was captured.
- We established after different casting methods, that the Potassium Nitrate should be first ground and sieved, this made the fuel perform better.
- The fuel should also not be left longer in the dessicator, more than 2 days, this makes it harden and not perform in the expected way.



The setup of the different electronics for the static firing test.

The test-stand with the nozzle and igniter.

Tasks in this week

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Timeline

Month	Intern week	Tasks
Jan		
	Week 1	Research and going through N1 reports.
	Week 2	Fabrication of PCB.
	Week 3	Nozzle fabrication, Igniter test.
Feb	Week 4	Fuel casting.
	Week 5	Test stand design and fabrication.
	Week 6	Launch Pad design and fuel tests .
	Week 7	Testing and improvements on the final work.