Internship 2022

Wk 4 Progress report

Name: Gichia Maureen

Tasks completed last week

- [#11] Casting tools fabrication
- [#19] Iterative static firing tests
- [#21] Research on modification of KNSB fuel
- [#22] Static fire safety orientation
- [#56] Motor Fuel Casting2
- [#71] Casing fabrication

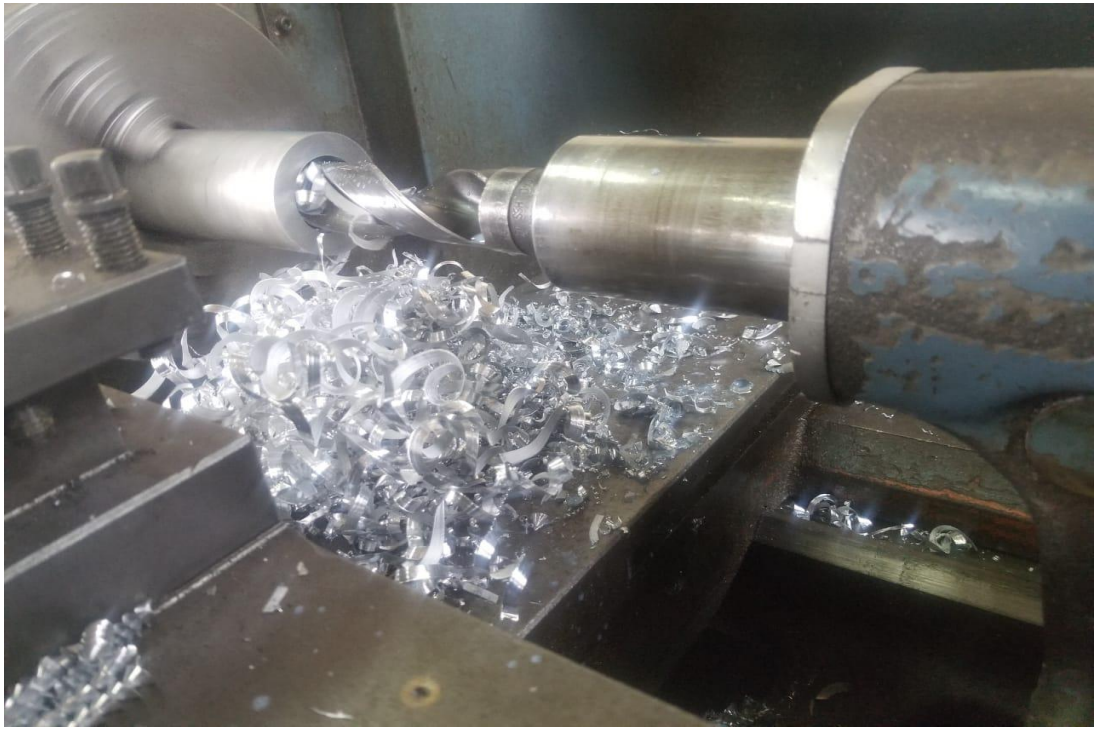
- **[#11] Casting tools fabrication**

Material: Aluminium alloy

Dimensions: -150mm long;

-Dia 63mm

Through hole- Dia 52mm



● [#21] Research on modification of KNSB fuel

- KNPSB is a newly developed rocket propellant that is an enhanced performance version of the familiar KNSB (Potassium Nitrate-Sorbitol) propellant.
- KNPSB is basically KNSB propellant formulated with Potassium Perchlorate (KP) as a supplemental oxidizer.
- The formulation of KNPSB propellant is:

    35% Potassium Nitrate

    30% Potassium Perchlorate

    35% Sorbitol

- **[#56] Motor Fuel Casting2**

KNSB Propellant

- Less brittle than KNSU

propellant ratio: 65% Potassium Nitrate

35% Sorbitol

Heating Temperature - 115-125 oC

Crimson Powder has certain advantages over Black Powder, including:

- lower combustion temperature which minimizes heat damage to the rocket

- higher impetus (i.e. more potent)

- combustion residue is odourless and cleans up readily with warm water

Ingredients to make approximately 10 grams of Crimson Powder:

Potassium Nitrate 6.2 grams

Ascorbic acid 4.5 grams*

Red iron oxide 0.5 gram

Water, hot 30 ml

Tasks in this week

- [#11] Casting tools fabrication
- [#19] Iterative static firing tests
- [#56] Motor Fuel Casting3
- [#71] Casing fabrication

Timeline

Month	Intern week	Tasks
Jan		
	Week 1	Designs [Fuel, Casing, Nozzle, Bulkhead, Casting tools, Test stand]
	Week 2	Fabrication of items
	Week 3	Fuel Fabrication and test stand revamp
Feb	Week 4	Fabrication of items & Fuel casting
	Week 5	Iterative Fuel tests
	Week 6	Launch Pad design and iterative fuel tests
	Week 7	Iterative fuel testing and improvement