



DETechnologies

Memorial University of Newfoundland Faculty of Engineering and Applied Science

Overview

DETechnologies is a grad/undergrad student led research group at Memorial University working to research, validate, build and prove Rotating Detonation Engine (RDE) technology. Our mission is to build a research engine that can be used to empirically validate operating parameters.

What is a Rotating Detonation Engine?

An RDE is a novel rocket engine technology, proven in research environments but not well explored in terms of controlled operation. RDEs operate on the principle of Detonation (supersonic combustion) around an annular combustion chamber. Harnessing the power of detonation results in a massive 25% efficiency gain over traditional deflagration (subsonic combustion) engines.

What can we do?

Our focus is on RDE stability & operating consistency by working on multi-wave interactions, liquid cooling system and modular combustion chamber geometry.

Scope & Project Objectives

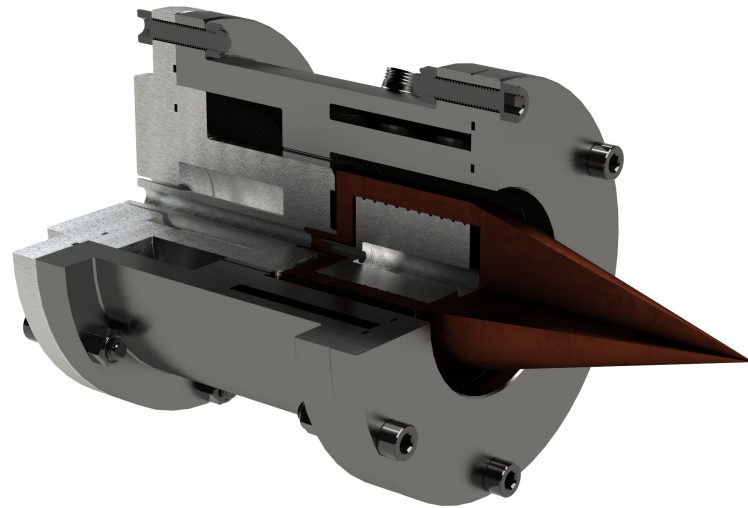
Design, Build and Test a fully functional Rotating Detonation Engine

- Gas-Gas, non-premixed, orbital thruster
- Multi-wave detonation control
- Modular design
- Maximize thrust
- Liquid cooled

Areas Seeking Support

We are preparing to begin manufacturing a fully functional prototype and are seeking support in the following areas.

- Testing Equipment/Laboratory Space
- Computational Resources for Simulations
- Manufacturing Support
- Financial Support



Project Timeline

Literature Review

February 2023

May 2023

Iterative Design

Engine Fabrication

October 2023

February 2024

Testing & Validation



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Support Levels

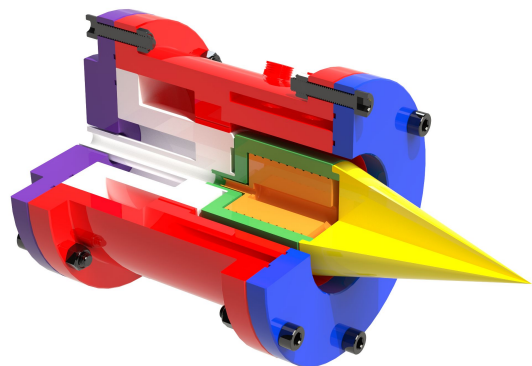
Manufacturing and testing budget totals **\$150,000** which includes a full high precision component manufacturing, and sufficient safety equipment to ensure responsible operation of the engine. Several generic sponsorship levels are broken out below, contact us for custom requests.

	Platinum \$25,000 +	Gold \$15,000	Silver \$5,000
Commemorative 3D Printed Model	✓	✓	
Investor Event	✓	✓	✓
Logo on Team Gear	Large	Medium	Small
Logo on Website	Large	Medium	Small
Logo Size on Engine	Large	Medium	Small
Framed Thank-You Photo	✓	✓	✓

Contact Us!

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Meet the Team



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