



DETechnologies

Fifth Year Mechanical Engineering Capstone Project
Memorial University of Newfoundland Faculty of Engineering and Applied Science

Overview

This project aims to contribute to the global research space regarding Rotating Detonation Engine (RDE) development. RDEs have prospective applications as orbital maneuvering thrusters, staged launch vehicle booster engines, missile engines, gas turbine combustors, and supersonic aircraft engines. The goal of this project is to build a modular, liquid cooled, RDE capable of thrust output on the order of 500N.

Our operational objectives are to maximize efficiency, collect comprehensive empirical data, and meticulously document design relations to expected results during the iterative development process. The engine will be designed to be as modular as possible, facilitating future research and development work by students and faculty researchers. Our ultimate aim is to have our work published in full, serving as a valuable reference roadmap for the design, construction, and rigorous testing of Rotating Detonation Engines (RDEs) in research environments.

Scope & Project Objective

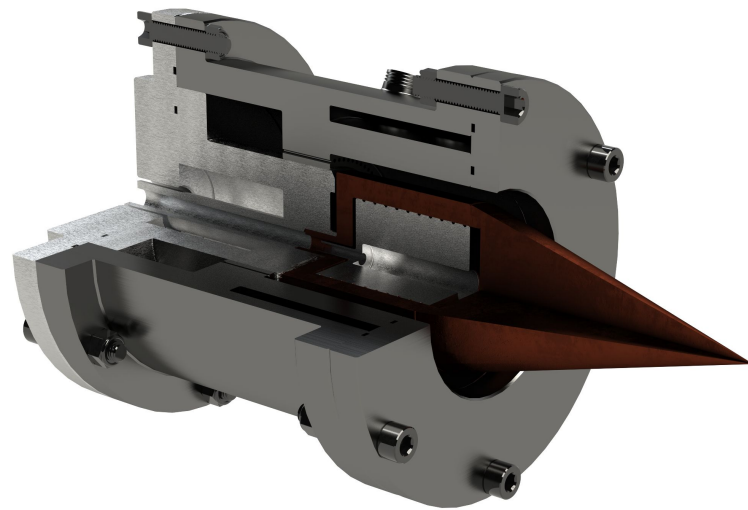
Design, Build and Test a Rotating Detonation Engine

- Gas-Gas, non-premixed, orbital thruster
- Liquid cooled
- Modular
- Design focus on engine structure geometry
- Maximize thrust

Areas Seeking Support

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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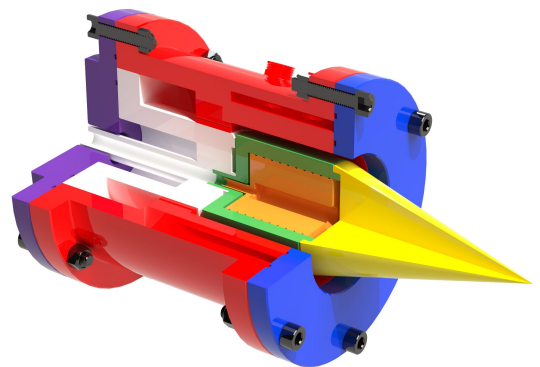
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Sponsorship Levels

	Platinum \$20,000 +	Gold \$15,000	Silver \$5,000	Bronze \$1,000
Commemorative 3D Printed Model	✓	✓		
Investor Event	✓	✓	✓	✓
Logo on Team Gear	Large	Medium	Small	Extra-Small
Logo on Website	Large	Medium	Small	Extra-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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