

Propulsion System Design for CubeSats in LEO

 Cranfield, Bedfordshire, UK

 MSc Thesis Project

 **MT2022T003**

Start Date: March 2022

About us

Space Resources Laboratory is a space subsystem provider with focus on the small satellite industry. Our products include CubeSat platforms, CubeSat deployers, Micro-propulsion systems etc. Our aim is to exploit the small satellite industry and make space more accessible to everyone.

Project Description

We are looking for a marketing individual currently pursuing master's in Engineering at a UK based University. We are currently working on the design for a unique micro-propulsion system to be used for the Attitude Control of CubeSats in LEO. The system will use cold gas thrusters with sublimable propellant in order to store in small volumes. The system is unique as it will be installed with reserve fuel to be used to trigger a deorbiting manoeuvre at the End-of-Life stage of a mission to avoid accumulation of more space debris.

Responsibilities

- Study existing micro-propulsion systems
- Study typical ΔV requirements for existing missions
- Perform hand calculations for propulsion system design
- Perform Computational Fluid Dynamics
- Optimise the design and design procedure
- Design CAD for the propulsion system
- Prepare technical documents and presentations

Essential Skills

- Proficiency in performing CFD (Fortran preferred)
- Proficiency in MATLAB
- Dealing with Mechanical Team to assist with the design procedure
- Ability to work on short deadlines

Optional Skills

- Knowledge of Animation packages like Blender, Cinema4D and 3DSMAX
- Knowledge of GMAT, STK