

IR cubesat electronics design and test

Code: 20/29

Company: University of Bristol

Location: Bristol, UK

Company Description:

The intern would be working with the **University of Bristol** Aerospace Engineering, Physics and Earth Sciences departments. The supervision team comprises 3 academics from the University of Bristol. The Faculty of Engineering at Bristol has long-lived and firmly established connections with industry, supported by an Industrial Liaison Office with over 25 staff. In space, we collaborate with Airbus and have a direct link to Thales Alenia Space through Prof Berthoud. We also work with smaller companies such as Oxford Space Systems on a range of projects. The intern would be based at the University of Bristol, but participate in weekly telecons with the large industrial company who are managing the CubeSat project.

Depending on COVID-19 updates, the internship will be run remotely or it would be based in the University of Bristol's dedicated satellite lab which has a ground station and clean room, as well as other specialised testing equipment. The student would be involved in electronics design and prototyping, software prototyping and, if pandemic regulations allow, satellite hardware testing including thermal vacuum testing, vibration testing and Electro Magnetic Compatibility testing which may involve travel off site to some of the facilities. This travel will be covered by the University.

There will be regular reviews with the intern and feedback on their CV and production of a poster and brief presentation for the dedicated SPIN Showcase Event.

Project Description:

The aim of this project is to offer undergraduate university students the opportunity to gain industry-relevant, hands-on experience in satellite design, build, testing, and integration. The University of Bristol is running a CubeSat project to observe ash clouds from satellite image data using an infrared camera. It builds on recent work at the University of Bristol to measure ash clouds using fixed cameras and UAV images.

The intern will start by reviewing mission requirements and the current mission timeline for the spacecraft including plans for contingency situations. They will then review the electronics design for the payload electronics, producing a prototype version which can be used for testing. They will then order the pcb which can support further testing of the payload, which if time and COVID-19 restrictions allow they will attend and support. Lastly, they will develop a plan for the next steps of the work.

This internship has the potential to make a real contribution to a live spacecraft project. The intent is that this project will better inform the student's career choices, increase their value to prospective employers (giving them an impressive addition to their CV), and help build their skills in spacecraft development.

Applicant Specification:

Minimum Requirements:

- Studying for a bachelors or master's degree in electronics/aerospace/space engineering
- Knowledge of basic electronics design
- Proven motivation to work in the space domain
- Ability to communicate effectively both written and verbally

Preferred Additional Requirements:

- Experience of space and/or earth observation projects
- Experience of working with camera interfaces (IR and visual)
- Experience of RTOS
- Experience of working in teams

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 15 June 2020 to attend the SPIN Induction day at the Satellite Applications Catapult, and completion before late-September for the Showcase the following week. Salary is £1,500 per calendar month gross.

Closing Date for Applications: 5pm Thursday 21 May

Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.