

## **Nanosatellite Power Systems**

### **Project Code**

19/09

### **Department Name**

Access to Space

### **Project Description**

With the miniaturisation of satellites over recent years, the power available to payloads has become increasingly constrained due to the limited surface area available for photovoltaic cells. Consequently, optimising the extraction of what power is available is of high importance to enable new, higher power payloads to be flown on ever smaller platforms. Many different types of regulation schemes are available, with trade-offs between cost, efficiency and reliability. This project will involve designing and implementing a number of different charge regulators and assessing their efficiency and performance in response to different supply and load conditions, as well as suitability for use in the space environment.

### **Applicant Specification**

The applicant should have a good understanding of electronics, be willing to search for innovative solutions to problems, capable of conducting independent research and presenting the results in a clear and informative manner.

### **Minimum Requirements**

Programming experience will be required to implement any algorithmic charge controllers, as well as familiarity with basic circuit bread boarding, prototyping and the use of test equipment to measure relevant values.

### **Preferred Additional Requirements**

Experience in low level programming languages or microcontroller development would be desirable for software based regulators, or analogue electronics and the use of e.g. operational amplifiers for hardware implementations. Any involvement in circuit design or printed circuit board layout would also be beneficial, however there will be opportunities to develop skills in all these areas.

### **Application Closing Date**

Friday 8 March 2019

### **Interviews**

Week commencing 25 March 2019



### **Start Date**

The Induction Day will be held at Harwell on Monday 18 June, it is intended this will also be the start date.

### **The Nitty Gritty**

8 weeks fixed term contract to be agreed with successful candidate but nominally with a start date around Monday 18 June which is also the SPIN Induction day at Harwell.

### **Salary**

£1,500 per calendar month.