University of Surrey

FACULTY OF ENGINEERING & PHYSICAL SCIENCES

Surrey Space Centre

Research Fellow

Salary £28,839 - £30,747 per annum
(subject to experience and qualifications)

Applications are invited for the position of Post-Doctoral Research Fellow at the Surrey Space Centre for a project entitled “Miniaturised Monopropellant Microthrusters using MEMS for Satellite Inspection”. This is a 24 month post.

This position involves working on the design of a board that will control a small microthruster based upon MEMS technologies for the inspection of another satellite in orbit. This project will provide the candidate with an opportunity to bring together different aspects of the design of a miniaturised propulsion system for proximity operations of another craft, design of a control board that interfaces with sensors and a microcontroller for the control and path planning aspects of inspection as well as enabling a degree of autonomy within the board systems to ensure collision avoidance and goal completion. Many aspects of the remote inspection vehicle have been performed in previous projects, so this will provide the candidate with an overview of how these different aspects work and to design a system that will bring them together with the control of the MEMs actuator. This project is sponsored by Astrium GmbH in Germany, European leaders in space propulsion, who will provide expertise on the MEMs thruster itself. Part of the aim of this project is to feed into the thruster design requirements of the application and to ensure that limitations of the MEMs thruster are accounted for in the control system.

You will be required to collate information about small satellite missions and their requirements, develop a software and hardware architecture for the control of an inspection module, work on a high level control of the MEMs thruster and provide an architecture that will interface with other software modules looking at path planning, sensor data, autonomous operation and decision making. It is intended that this project will lead into a follow on project that will develop this architecture further and lead to a demonstration mission and in-flight evaluation.

You will be expected to attend progress meetings at Surrey and in Germany, where you will present results of your simulations and present designs for a microthruster control board for inspection through review presentations. You will work closely with top European scientists on space propulsion and liaise with Astrium and SSTL for experimental testing of concepts to be performed. You will also be responsible for any testing work either with existing facilities within SSC or through working with our partners.

You will have a good honours degree in electronics and electrical engineering, mechanical engineering or physics, and ideally should have a PhD in a relevant discipline. Experience of working in a space industry or work related to space missions would be highly desirable. The position requires good hands-on-skills, with a mixture of simulation work, experimental testing and excellent communication and presentation skills.

Informal academic enquiries may be made to Dr. Phil Palmer p.palmer@surrey.ac.uk, +44 (0)1483 686024. Further information on the Surrey Space Centre can be obtained from the SSC website http://www.ee.surrey.ac.uk/SSC

For an application pack and to apply on-line please go to our website: www.surrey.ac.uk/jobs. If you are unable to apply on-line please contact Miss Stacey Michaelides, HR Assistant on Tel: +44 (0) 1483 686106 or email: s.michaelides@surrey.ac.uk Please quote Post Ref 7481.

Closing date for applications: 22nd March 2010.

For further information about the University of Surrey, please visit www.surrey.ac.uk
We acknowledge, understand and embrace cultural diversity.