

**University of Surrey**  
**Faculty of Engineering & Physical Sciences**

**EPSRC Industrial CASE Studentship with QinetiQ in Unmanned Aerial Vehicles**

**‘Autopilot and Systems Design of Unmanned Aerial Vehicles’**

**3½ Year Project**

**The closing date for applications is: 30<sup>th</sup> January 2010.**

**Studentship (£16k per annum, tax free)**

The Space Vehicle Group/Surrey Space Centre, within the Faculty of Engineering and Physical Sciences, at the University of Surrey, have been at the forefront of research and development in Robotics, Systems Engineering and Space Systems for over a quarter of a century. Further details can be found at: [www.ee.surrey.ac.uk/SSC/](http://www.ee.surrey.ac.uk/SSC/).

We currently have a research opportunity for an Industrial Collaborative Award in Science and Engineering (CASE) studentship, sponsored by the EPSRC and QinetiQ, to work on a project in the areas of autopilot and systems design for small Unmanned Aerial Vehicles. The aim of the project is to develop robust, automatic take off and landing control algorithms for rotor based UAV's as well as investigating miniaturization and simplification of key subsystems of the UAV concepts currently in design. The proposed research will entail a mixture of software (simulation), controls and hardware design with experimental work used to verify and test proposed take-off and landing algorithms.

**Project Details:**

The aims of this research project are to use a UAV rotor based prototype and develop/perform:

- Automatic, robust take-off and landing sequences of a rotor based UAV with a high degree of agility and maneuverability
- Assess and perform a systems engineering design towards miniaturization, simplification and cost/mass reduction of subsystems/components used on the existing rotor-based UAV prototype
- Testing and verification of take-off/landing sequences in UAV experimental campaigns

**Conditions:**

The successful applicant will be registered for an MPhil/PhD within the Faculty of Engineering and Physical Sciences. Applicants should have a minimum of an upper second class (2.1) degree in Aerospace or Electrical Engineering and be able demonstrate good problem solving and analytical skills as well as a knowledge of controls, systems design and flight dynamics. Evidence of software development skills and programming with C/C++, MATLAB and Flight Dynamics tools are essential, as well as experience in controls/flight dynamics/mechanics. Practical experience with RC aerospace vehicles and flight tests is also essential.

**Applicants must satisfy the eligibility requirements for an I-CASE award (i.e. UK residents or EU residents with 3 year minimum residency are ONLY eligible).**

**Informal Enquiries to:**

Dr Vaios Lappas, Senior Lecturer in Space Vehicle Control E-Mail: [v.lappas@surrey.ac.uk](mailto:v.lappas@surrey.ac.uk)

**Applications to:**

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