

## Two Funded Postgraduate Scholarships in Biomedical Optics

### 1. Endoscopic microscopy (biomedical optics), Supervisor: Dr Michael Hughes

<http://www.mike-hughes.org/endomicroscopy-research/>

The aim of the project is to develop a 'microscope in a needle' for optical biopsy of living tissue. Optical biopsy is a real-time, minimally-invasive alternative to conventional histology, offering the prospect of faster and more accurate medical diagnostics and image-guided intervention. The current generation of needle probes, using fibre image bundles or gradient index lenses as image conduits, suffers from poor resolution and a low pixel count, limiting the range of potential applications. The student will work on new techniques for imaging through ultra-narrow conduits, with the aim of improving the resolution and field-of-view of the images, while simultaneously reducing the outer diameter of the probe. This will involve numerical simulations, designing, building and testing optical/electrical hardware and software, and developing clinical applications together with collaborators.

### 2. Postgraduate Scholarship in Biomedical Optics with emphasis on Optical Coherence Tomography, Supervisor: Prof. Adrian Podoleanu

<http://www.kent.ac.uk/physical-sciences/staff/profiles/adrian-podoleanu.html>

A funded PhD position is available in the field of optical coherence tomography (OCT).

The aim of the project is to devise novel configurations of OCT systems and their optical sources, including ultra-fast tuneable lasers. The project may also take the avenue of medical applications, with co-supervision from local hospitals. The successful candidate will be based at the University of Kent's main campus in Canterbury, as part of the Applied Optics Group, and work on the hardware optics of OCT and its applications.

The successful candidate will be based at the University of Kent's main campus in Canterbury as part of the Applied Optics Group. Occupying two floors of the University's Photonics Centre, with the use of modern optical laboratories as well as clean-room and workshop facilities, the Applied Optics Group offers a wide range of optical prototyping, test and measurement equipment to support this project (<http://www.kent.ac.uk/physical-sciences/research/aog/index.html>).

As well as specific training in biomedical optics and microscopy, the student will also gain a more general appreciation of the role of physics and engineering in medicine, preparing them for a career in industry, clinical science or academia.

**Entry requirements:** Applicants should have or expect to obtain a first or upper second class honours degree (or equivalent) in Physics, Biomedical Engineering, Electrical Engineering or a related subject. The position would suit a candidate who has, or is willing to develop, strong laboratory and computing skills, and who will be comfortable working at the interface of different scientific disciplines. Practical skills in an optics lab and programming experience are essential.

**Deadline for Applications:** 23 April 2017 for position 1 and 30 April 2017 for position 2.

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**How to Apply:** To apply please go to:

<http://www.kent.ac.uk/courses/postgrad/apply/index.html>.

You will need to apply through the online application form on the main University website. Please note that you will be expected to provide personal details, education, skills acquired, practical, theoretical, programming and employment history and supporting documentation (Curriculum Vitae, transcript of results, two academic references). You do not need to complete the research proposal box as this is a specific funded project. Please make sure you include Dr Michael Hughes or Prof. Adrian Podoleanu, depending the case, as your preferred supervisor. After you have submitted an application, please email either chosen supervisor at [M.R.Hughes@kent.ac.uk](mailto:M.R.Hughes@kent.ac.uk) or [A.G.H.Podoleanu@kent.ac.uk](mailto:A.G.H.Podoleanu@kent.ac.uk) and let them have the number of your application returned by the university server, to be able to track your application.

**Funding:** Both studentships above are due to start September 2017. They are Vice Chancellor's Research Scholarships, which will be offered at the standard UK Research Councils' rate (currently £14,553; to cover living costs) and will additionally cover tuition fees at the Home/EU rate (currently £4,121 per annum). The scholarships are available to both UK and EU nationals and will involve undertaking teaching/demonstrating duties during the period of study.