Imperial College London

Department of Materials, Department of Bioengineering and Institute for Biomedical Engineering

PhD Studentship in Development of New Biomaterials for Biosensing

Duration: 36 months

Starting from 2014, start date flexible

Applications are invited for a PhD studentship on the development of new biomaterials for biosensing, paying a non-taxable bursary of £15,590 per annum (current stipend) as well as will cover tuition fees at the home/EU rate. Funding is available only to applicants who have been ordinarily resident in the UK for three years prior to the start date.

Background:

Disease states, such as cancer, malaria, heart failure and tuberculosis, introduce biomolecular changes in signatures of proteins, enzymes or nucleic acid make-ups that represent targets for diagnostic tests, yet currently used tests suffer from inaccuracy, insensitivity, difficulties with implementation or high costs. Innovative nanomaterial-based assays represent cost-amenable approaches that could be used as technological platforms capable of ultrasensitive detection of disease biomarkers giving easily interpretable outputs (e.g. colour changes), which would transform the field of biosensing.

The aim of this project is to develop new nanomaterial-based arrays capable of detecting biomarkers for cancer and infectious diseases at ultralow concentrations.

The Project:

This project will focus on the development of new nanomaterial-based assays capable of detecting biomarkers specific to cancer and infectious diseases in serum. The nanomaterials will need to be designed and optimised according to the concentrations of relevant biomarkers and cost-amenability of the nanomaterial assay. The physical properties of the assay will need to be fully and completely characterised to understand the effects of agglomeration and influence of surrounding protein moieties. This project will culminate in preclinical tests using patient samples.

Applicants should have or expect to obtain a first class undergraduate degree (or equivalent) in a relevant discipline such as Bioengineering, Materials Science, Physics, Chemistry or Engineering. You will be a highly self motivated individual with demonstrable experience of experimental research.

Relevant Papers (*: senior corresponding author):

How to apply
The prospectus, entry requirements and application form (under ‘how to apply’) are available at: http://www.imperial.ac.uk/pgprospectus.

Applicants should send a CV and cover letter to Prof Molly Stevens (m.stevens@imperial.ac.uk),

For assistance with application details please contact Fiona Thomson (fiona.thomson@imperial.ac.uk). The prospectus, entry requirements and application form (under ‘how to apply’) are available at: http://www.imperial.ac.uk/pgprospectus.

Closing date: The position will be filled as applications are received

Committed to equality and valuing diversity. We are also an Athena Bronze SWAN Award winner, a Stonewall Diversity Champion and a Two Ticks Employer