

3 PhD Studentships in Computational Bioengineering Group

School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, UK



The Computational Bioengineering Group in the School of EPS at Heriot-watt University, UK has three PhD studentships available.

*Please check following details before apply as they have different values and application procedures as well as closing dates.

*Please indicate which studentship you are interested in when making the informal enquiry to Dr Yuhang Chen (y.chen@hw.ac.uk)

*More details can be found at <http://home.eps.hw.ac.uk/~yc273>

PhD Studentship #1

Computational Mechanics and Mathematical Modelling of Human Soft Tissue

Description:

There is ample evidence that the mechanical properties of human and animal tissue depend on their histological make-up although few models exist for the relationship between the structure and the properties. This project will develop models at a range of scales for the dynamic modulus of soft tissue in humans to support diagnostic work based on instrumented palpation. The model will first be developed at a macroscopic scale, but it is envisaged that a multi-scale approach will eventually be needed taking into account features as small as one micron.

Supervision:

Closely-related to our EPSRC-funded project (EP/I019472/1: E-finger: a tactile diagnostic device with microscale resolution), the successful candidate will work with a group of engineers and surgeons from universities and institutes in collaboration. Prof. Bob Reuben will be the supervisor of the successful candidate while Dr. Yuhang Chen will be the co-supervisor.

Value of the Studentship:

This is one of the three full-studentships that were recently announced by school of EPS@HWU. It covers tuition fees and a tax-free stipend for 36 months. For home/ EU students: total value £58k over 3 years (£15k annual stipend plus £4.35k fees). For overseas students: total value £72k over 3 years (£10k annual stipend plus £14.08k fees).

Entry Requirements:

The ideal candidate should be highly-motivated and have good written and oral communication skills as well as genuine interest in research and in publishing your work. Competent background in engineering and mathematics is required. In addition, prior experience in computer programming or Finite Element Analysis is a plus. A first/master degree in mechanical engineering/mechanics, material science, biomedical engineering or other related fields is desired.

Closing date:

The successful candidate will ideally start in September 2012, but the opening will remain available until early November, unless filled.

Application procedure:

To apply, please send a copy of your CV, one page document (maximum 1000 words) explaining your research interest/motivation, your academic transcripts and the names of two academic referees to Dr Baixin Chen (b.chen@hw.ac.uk).

Informal enquiries about project details can also be made to Dr Yuhang Chen (y.chen@hw.ac.uk).

PhD Studentship #2 & #3

Computational Mechanics and Topology Optimisation in Biomedical Engineering

Description:

The Computational Bioengineering Group is recruiting PhD candidates who are interested in doing interdisciplinary research at the interface of engineering, materials science and biomedicine. Some current research interests include:

- Design of microstructural porous materials for biomedical engineering (e.g. tissue scaffolds and vascular stents)
- Solid and fluidic characterisations for porous microstructures of cellular materials
- Release mechanism and microstructural modeling/design of biodegradable drug release systems
- Properties of metamaterials and their design optimisation in engineering materials
- Mechanobiology; Cell mechanics; Computational tissue engineering
- Structural optimisation: size, shape and topology

Value of the Studentship: (Two types of studentships available here)

Studentship #2: Tuition-waiver £14,080 p.a. plus stipend ~£8,000 p.a. over 3 years.

Studentship #3: Tuition-waiver £14,080 p.a. over 3 years. This studentship is designed for candidates who can find stipend support by their own, e.g. from national funding bodies. Two studentships falling in this type are currently available.

Entry Requirements:

The ideal candidate should be highly-motivated in research topics listed above and have good written and oral communication skills as well as genuine interest in research and in publishing your work. Competent background in engineering and mathematics is required. In addition, prior experience in computer programming or Finite Element Analysis is a plus. A first/master degree in mechanical engineering/mechanics, material science, biomedical engineering, mathematics or other related fields is desired.

Closing date:

These openings will remain available until filled.

Application procedure:

Enquiries should be directed to Dr Yuhang Chen (y.chen@hw.ac.uk), with 1) a short statement of the topics interested; 2) a brief CV and 3) any other documents if relevant (Files in PDF format are preferred).