

One EPSRC-funded PhD studentship for October 2009 start

3.5 Years; Starting stipend £ 13,290 (tax free) with annual increases for inflation, plus full coverage for Home/EU tuition fees

Carbon Nanotube-based nanofluidic lab-on-a-chip for integrated health diagnostics and therapeutics

In the last 10 years microfluidics has revolutionized chemical and biological analysis, leading to high throughput DNA screening, and portable devices for toxic agents' detection. With many of these technologies now at the commercial stage, the challenge is to take full advantage of the unique effects of miniaturization by going to the nanoscale. This will lead to implantable lab-on-a-chip that continuously monitors vital health markers, delivers drugs, dramatically improving quality of care.

This project will focus on the key enabling technologies to achieve these objectives, chip miniaturization and the ability to control liquid flow at the nanoscale. You will design and fabricate a nanofluidic lab-on-a-chip to quantitatively investigate, using electron microscopy and Raman spectroscopy, the behaviour of liquids confined in nanometre scale channels. You will synthesize carbon nanotubes with different chemistry and surface properties to investigate how to control liquid transport through them.

Research Team: You will join the Nanoscale Fluid Transport Laboratory in the Department of Chemical Engineering at University of Bath. Dr. Davide Mattia has over five years of experience working in the area of carbon nanotubes and nanofluidics, and the laboratory has state-of-the-art ceramic membrane and carbon nanotube synthesis facilities and membrane fluid flow measurement apparatus.

Eligibility: Due to funding conditions the applicants must be **UK/EU nationals only**. Non EU citizens may apply if the difference between os/home fees could be covered by the applicant. Information on fees is available on the Graduate Office web page: www.bath.ac.uk/grad-office.

They should have (or expect to obtain by summer 2009) a 2.1 degree or equivalent degree in chemistry, chemical engineering, materials science, physics or similar.

Contact: Please contact Dr. Davide Mattia (Tel: 0044(0)1225-383961, Email: d.mattia@bath.ac.uk) for further details about the post and project.