

PhD Studentship

Department of Physics

This 3.5 year studentship is available with a start date of October 2009 and provides a tax-free EPSRC stipend, plus university fees at the Home/EU rate and travel funds.

Due to funding restrictions this studentship is fully funded only for UK and EU students. The successful candidate should have a good degree in physics, or a closely related subject.

Multi-Band Superconductivity and High Pressure Studies of the Vortex Lattice in Type II Superconductors using Neutron Small Angle Scattering (SAS)

The project is to work on development of SAS investigations of the crystallography of the flux-line lattice in multi-band superconductors at ambient and high pressures (up to 10 GPa). The project is based on our previous studies of diffraction from the flux-line lattice in the mixed state of a range of superconducting materials with unusual superconducting ground states. This work has been essential in providing information on the symmetry of the superconducting state and various phase transitions of the vortex lattice for a range of conventional and exotic superconductors.

The vast majority of unconventional (and even many conventional) superconductors have a multi-band character whose role is essential in determining their superconducting nature. Such work has never, to date, been performed under external hydrostatic pressure. We have now identified a number of cases where small samples may be used and interesting results obtained for the limited constraints imposed by the low temperature, high pressure configurations.

Experimental work will be based both at Warwick as well as the Institut Laue Langevin (ILL), Grenoble, France and other European Neutron sources.

To apply go to: go.warwick.ac.uk/pgapply

For informal enquiries or more information, please contact: Prof. Don McK Paul at phrje@warwick.ac.uk

For further information on the Warwick Superconductivity and Magnetism Group, please visit the site below

go.warwick.ac.uk/supermag/

The Physics Department at Warwick is a top rated research department in the UK offering research programmes leading to PhD or MSc in the following fields:

- Experimental Condensed Matter Physics
- Theoretical and Computational Physics
- Astrophysics, Astronomy, Plasmas and Fusion
- Elementary Particle Physics
- Medical and Biological Physics

Interested applicants should consult our web pages:

go.warwick.ac.uk/fac/sci/physics/research and go.warwick.ac.uk/fac/sci/physics/postgraduate

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