PhD Position
Investigation of Spintronic Materials With Neutron Scattering Techniques

We are looking for a motivated PhD student to be based at the Bragg Institute in Sydney and graduate at the University of Western Australia in Perth. An essential part of the PhD program is the use of the neutron scattering instruments at the OPAL research reactor in Sydney, in particular the new reflectometer, *Platypus*. The research program is related to thin magnetic films for applications in future spin electronics (or spintronics) devices.

Motivation: In order to keep up with the increasing requirements for further miniaturization, higher speed and lower power consumption of information processing and storage devices like computers, MP3 players and hard-disk drives, novel scientific solutions for fast, reliable and energy-efficient processing and storage of data must be developed. Spintronics, utilizing thin film multilayers and nanopatterned structures, is a very promising approach. Spintronic devices specifically exploit the spin properties of the electrons (i.e. its magnetism) instead of, or in addition to, charge degrees of freedom. Our research is aimed at studying novel magnetic phenomena on the nanoscale involving artificial magnetic structures.

Experimental

Collaborate with an international team of scientists and perform state of the art experimental research at the Bragg Institute and other large facilities:

- Neutron reflectometry and diffraction to investigate structural and magnetic properties of nanoscale thin films.
- Use of complementary structural and magnetic methods (including magnetometry and X-ray/synchrotron methods).

Your tasks

- Become an expert in spintronic materials and design novel material prototypes.
- Perform neutron scattering and complementary experiments at national and international research facilities.
- Data analysis, interpretation and publication of experimental results.

Your profile

- Interest in experimental physics and neutron-scattering techniques in particular.
- Interest in travel overseas for experiments or other collaborative efforts.
- Ability to work in an international team.

Further details

This work is part of collaboration between the University of Western Australia (Perth) and The Bragg Institute at ANSTO (Sydney).You will be based at the Bragg Institute, visiting Perth when required. The successful candidate will receive A$28,282 / year for three years. Assistance with relocation is also available. Applications are considered from now on until the position is filled.

For further information please contact
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