ORNL Publications

External Publication

Job Posting Title

Postdoctoral Research Associate - Neutron Scattering Studies of Large-Scale Structures in QCM / NB50472060

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Purpose

The Neutron Sciences Directorate (NScD) at Oak Ridge National Laboratory (ORNL) operates the High Flux Isotope Reactor (HFIR), the United States' highest flux reactor based neutron source, and the Spallation Neutron Source (SNS), the world's most intense pulsed accelerator based neutron source. Together these facilities operate 30 instruments for neutron scattering research, each year carrying out in excess of 1,000 experiments in the physical, chemical, materials, biological and medical sciences. HFIR also provides unique facilities for isotope production and neutron irradiation. To learn more about Neutron Sciences at ORNL go to: http://neutrons.ornl.gov.

Purpose:
The Quantum Condensed Matter Division (QCMD) in the Neutron Sciences Directorate at ORNL operates 13 instruments for elastic and inelastic neutron scattering studies of materials. Instruments are located at both HFIR and SNS. QCMD conducts research on materials with emergent properties that are manifestly quantum in origin. Some examples of current interest include superconductivity, multiferroicity, ferrotoroidic phenomena, low dimensional and frustrated magnetism, orbital fluctuations and quantum criticality.

QCMD has an immediate opening for a postdoctoral research associate to work on a project to study novel phenomena emerging at interfaces between dissimilar complex materials as functions of electric and magnetic fields, light, pressure and temperature. The successful candidate will work in a collaborative team to develop sample environment optimized for use in reflectometry and small angle neutron scattering. The candidate shall perform experiments, including neutron scattering, to elucidate origins of emergent interface magnetism and related magnetic properties in model systems fabricated using state-of-the-art thin film deposition capabilities available at ORNL.

Major Duties/Responsibilities

- Perform neutron scattering experiments and subsequent data analysis to explore interfacial phenomena arising in quantum condensed matter.
- Publish scientific papers resulting from this research and present results at appropriate national and international meetings.
- Develop and implement a plan to enable application of (time dependent, including microwaves) electric and (static) magnetic fields to samples compatible with neutron scattering.
- Work as part of a team composed primarily of scientists and engineers in the development of sample environment for reflectometry and SANS.
- Identify and fabricate model systems to explore emergent interface phenomena.
- Prepare proposals to use facilities at nanoscience, neutron and x-ray facilities as appropriate.
- Ensure compliance with environment, safety, health and quality program requirements.
- Maintain strong commitment to the implementation and perpetuation of values and ethics.

- Physical requirements for this job include the use of hand and eye protection gear, kneeling, sitting for extended periods of time, working with low temperature sample environment equipment, and possible exposure to ionization radiation normally associated with operation of neutron and x-ray scattering instruments for scientific research.

Qualifications Required

A Ph.D. in Physics, Applied Physics, Materials Science, Chemistry, or other related science fields is required. Applicants must have received their PhD within five years of this application and must complete all degree requirements before starting their appointment. Candidates should be self-motivated, have good interpersonal, communication and presentation skills and a demonstrated ability to interact effectively with staff at all levels. The ability to work as a member of a multi-disciplinary team is a critical asset.

Employment is contingent upon the results of a pre-employment physical exam and drug screen which must be administered and cleared before employment can begin.

Qualifications Desired:
A proven record in experimental hard condensed matter physics is a distinct advantage. Previous skill in fabrication of thin film single crystals and characterization of their properties is very desirable.

This position will remain open for a minimum of 5 days after which it will close when a qualified candidate is identified and/or hired.

We accept Word(.doc, .docx), Excel(.xls, .xlsx), PowerPoint(.ppt, .pptx), Adobe(.pdf), Rich Text Format(.rtf), HTML(.htm, .hmtl) and text files(.txt) up to 2MB in size. Resumes from third party vendors will not be accepted; these resumes will be deleted and the candidates submitted will not be considered for employment.

If you have trouble applying for a position, please email ORNLRecruiting@ornl.gov.

Notice: If the position requires a Security Clearance, reviews and tests for the absence of any illegal drug as defined in 10 CFR 707.4 will be conducted by the employer and a background investigation by the Federal government may be required to obtain an access authorization prior to employment and subsequent reinvestigations may be required.

If the position is covered by the Counterintelligence Evaluation Program regulations at 10 CFR 709, a counterintelligence evaluation may include a counterintelligence-scope polygraph examination.

ORNL is an equal opportunity employer. All qualified applicants, including individuals with disabilities and protected veterans, are encouraged to apply. UT-Battelle is an E-Verify Employer.