

ORNL Publications

External Publication

Job Posting Title

BL4A Magnetism Reflectometer Instrument Scientist / NB50489170

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Purpose

Oak Ridge National Laboratory is the largest US Department of Energy science and energy laboratory, conducting basic and applied research to deliver transformative solutions to compelling problems in energy and security. ORNL's diverse capabilities span a broad range of scientific and engineering disciplines. ORNL's world class synthesis, characterization and computing facilities enable the Laboratory to explore fundamental science challenges and to carry out the research needed to accelerate the delivery of solutions to the marketplace. For more about ORNL see:

<https://www.youtube.com/user/OakRidgeNationalLab>.

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, these facilities carry out in excess of 1,000 experiments in the physical, chemical, materials, biological and medical sciences for more than 3,000 visiting scientists. HFIR also provides unique facilities for isotope production and neutron irradiation. To learn more about Neutron Sciences at ORNL see: <http://neutrons.ornl.gov>.

The Quantum Condensed Matter Division (QCMD, <http://neutrons.ornl.gov/qcmd>) has an immediate opening for an Instrument Scientist—a staff member position—on the Magnetism Reflectometer (BL4A, <https://neutrons.ornl.gov/mr>) at the Spallation Neutron Source. The Magnetism Reflectometer provides polarized neutron beams and ³He polarization analysis to explore property-structure relationships in films, heterostructures and nanopatterned materials. The instrument supports a diverse science community, attracting scientists from all over the world, carrying out world-class research primarily in magnetic materials.

The Instrument Scientist will report to the Thin Films and Nanostructures Group Leader in the Quantum Condensed Matter Division (QCMD), and will participate in research activities using the Magnetism Reflectometer, including assistance of users, and will perform individual research aligned with the mission of QCMD (see: <https://neutrons.ornl.gov/qcmd>) using facilities at ORNL and elsewhere as appropriate.

Major Duties/Responsibilities

The Magnetism Reflectometer provides reliable access to the DOE BES general user program with state-of-the-art sample environment capabilities. To maintain and further the performance of the Magnetism Reflectometer, the Instrument Scientist will (1) influence the technical direction of a multidisciplinary team requiring coordination of scientists, engineers, and supporting crafts across multiple organizations, (2) assist in prioritization of upgrades to the instrument and development of sample environment concepts, and (3) assure user-friendly capabilities are continuously improving in accordance with NScD scientific priorities. The incumbent will provide input and advice to the Group Leader to further the neutron science program.

Research Activities: As a member of QCMD, will have an impactful personal research program that is well aligned with the division mission.

User Support: Must provide technical support to users; will work to expand the capabilities and utilization of BL4A for hard condensed matter and other materials for which polarized neutrons are appropriate. Works with users to deliver scientific publications from user projects.

Instrument Activities: Champions developments in instrumentation, sample environment, software techniques that provide user-friendly instrument control, data reduction, visualization, and modeling. May be called upon to provide educational services for tours and outreach activities.

Safety: Maintains a culture of working safely at the instrument. Actively participates in improvements to safety procedures and controls.

Qualifications Required

Ph.D. in physics, materials science / engineering, or closely related discipline.

At least 5 years of postdoctoral, or other relevant experience with x-ray and/or neutron scattering.

Excellent verbal and written communication skills.

Qualifications Desired:

10 or more years of relevant experience with x-ray and/or neutron scattering.

Preference will be given to candidates with research interests in hard condensed matter (chemistry/materials science) to complement existing instrument team expertise.

Experience with sample environments such as low temperature (<50 K), high magnetic field (> 0.5 T), high pressure (> 1 kbar).

Experience with independent operation of a reflectometer at a major user facility.

Experience with polarized neutron beams.

Experience with the proposal process to request beam time at a major user facility.

Experience engaging users at a major user facility.

Experience mentoring postdocs.

Work Directions and Interfaces

This position will report to the Thin Film and Nanostructures Group Leader in the Quantum Condensed Matter Division.

Works closely with the research staff in the Quantum Condensed Matter Division assigned to Thin Film and Nanostructures group. Collaborates with science programs elsewhere at ORNL. Collaboration with faculty at the University of Tennessee is strongly encouraged.

Authority/Approval Levels:

Provides work direction to the Magnetism Reflectometer team. Interfaces effectively with line management organizations responsible for team leads, scientific associates, technicians, work-coordinators, technical professional and technical support personnel within guidelines established by the respective division directors. Responsible for effective and safe operation of the Magnetism Reflectometer beamline at the SNS. May also be involved with supervision and mentoring of Postdoctoral fellows and technicians

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, .html) 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.