

Research Professor, First Principles Modeling of Defects
in High Temperature Magnet Materials
University of Tennessee

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Posted Jul. 10, 2024, set to expire Nov. 9, 2024

Job Title	Research Professor, First Principles Modeling of Defects in High Temperature Magnet Materials
Department	UT-Oak Ridge Innovation Institute https://utorii.com/
Institution	University of Tennessee Knoxville, Tennessee
Date Posted	Jul. 10, 2024
Application Deadline	Open until filled
Position Start Date	Fall 2025
Job Categories	Research Professor
Academic Field(s)	Nuclear Mechanical Engineering Material/Metallurgy Engineering Physics Engineering - Other
Job Website	https://apply.interfolio.com/148012
Apply Online Here	https://apply.interfolio.com/148012
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Job Description	

The University of Tennessee has an opening for a Research Assistant/Associate Professor in the area of density functional theory modeling of defects in high temperature superconducting magnet materials, such as rare earth barium copper oxide. The successful candidate will be working with a new University of Tennessee-Oak Ridge Innovation Institute (UT-ORII) project developing materials for extreme applications with a focus on fusion environments. This work will be focused on utilizing first principles based electronic structure modeling to determine the thermodynamic and kinetic behavior of defects in these magnet materials from an atomistic scale, which is a necessary ingredient for

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fundamental understanding of high temperature superconducting magnets under neutron irradiation in the fusion environment. The modeling of these materials will be part of a larger set of experiment-theory feedback loops evaluating magnetic properties and the neutron irradiation dose limits associated with significant magnetic performance degradation. The work will also be closely coupled with experimental activities. The research faculty will work collaboratively with a team of faculty, postdoctoral associates, and students in Nuclear Engineering (NE), Mechanical Engineering (ME), Materials Science and Engineering (MSE), and Physics, as well as scientists at the Oak Ridge National Laboratory.

Demonstrated Research Skills

- Strong communication skills and a demonstrated ability to work in a collaborative team environment spanning experiments and modeling.
- A clear path to independence as a researcher is desired, although collaboration with more senior investigators will be expected.
- Since the investigator may participate in providing some level of instruction in accord with the UT-ORII mission, some formal teaching experience is desirable.
- A commitment to mentoring junior investigators who will work with the Research Faculty is important and, if available, demonstrated experience is a plus.

Qualifications

Required:

- PhD in Nuclear Engineering, Mechanical Engineering, Materials Science, Chemistry, Physics, or other discipline related to development of Materials for Extremes.
- Significant research experience following the doctoral degree is desired, with a documented publication record.
- Demonstrated experience with first-principles modeling performed within a multiscale paradigm.
- This position requires the ability to be granted a site-access badge for the Oak Ridge National Laboratory.

Preferred:

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- Candidates with experience in more than one discipline, or interest in collaboration across these disciplines, are preferred. However, candidates who can define a unique area are also encouraged.
- Experience with obtaining funding and student mentoring is beneficial.

Additional Information About Position

- This is a 12-month, non-tenure track position.
- The appointment will be with the University of Tennessee, Knoxville.
- The position will be implemented as an initial three-year contract with full salary support for the first year, followed by a gradual decrease in salary coverage such that the successful applicant will receive 50% salary support in year 5 (if renewed after the third year) and is expected to receive extramural funding by year 3 or earlier.
- The applicant will be expected to recruit multiple graduate students by year three.
- Continuation of the position will depend on the success of the hire and the team in attracting multi-year funding.
- A competitive startup package including support for PhD students and budget for equipment will be offered.
- Salary and title/rank will be determined commensurate with experience.
- Benefits will be typical of exempt employees at the University of Tennessee.

Application Instructions

Interested applicants should send inquiries to Prof. Brian Wirth (Governor's Chair Professor in Computational Nuclear Engineering) at bdwirth@utk.edu.

Review of applications will begin immediately and will continue until the position is filled. All application materials must be submitted to Interfolio at <http://apply.interfolio.com/148012>.

Applications must include:

- Letter of interest
- Comprehensive curriculum vitae
- Research statement outlining previous and future directions
- Mentoring statement
- List of contact information for at least three professional references.

More About UT-ORII

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The University of Tennessee-Oak Ridge Innovation Institute was launched by the University of Tennessee and Oak Ridge National Laboratory in 2021, in response to America's need for a stronger pool of science, technology, engineering and mathematics, and increasingly life science talent. UT-ORII is leveraging UT and ORNL's best capabilities and resources to accelerate collaborative discovery, innovation and interdisciplinary graduate education; and to prepare the next generation of talent in areas of critical importance to the nation and the State of Tennessee. The institute's current research areas include Clean Manufacturing and Advanced Materials, Energy Storage and Transportation, Radiopharmaceutical Therapies, and Circular Bioeconomy Systems. To learn more about UT-ORII visit utorii.com.

More About ORNL

Leveraging the talents of its world-class researchers and exceptional support staff, Oak Ridge National Laboratory is helping solve critical scientific and technical challenges and, in so doing, creating economic opportunity for the nation.

ORNL provides access to unique facilities, laboratories, and equipment, drawing thousands of visiting researchers each year.

EEO/AA Policy

All qualified applicants will receive equal consideration for employment and admission without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, genetic information, veteran status, and parental status, or any other characteristic protected by federal or state law. In accordance with the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, the University of Tennessee affirmatively states that it does not discriminate on the basis of race, sex, or disability in its education programs and activities, and this policy extends to employment by the university. Requests for accommodations of a disability should be directed to the Office of Equal Opportunity and Accessibility, 1840 Melrose Avenue Knoxville, Tennessee 37996-3560 or eoaa@utk.edu or (865)974-2498. Inquiries and charges of violation of Title VI (race, color and national origin), Title IX (sex), Section 504 (disability), the ADA (disability), the Age Discrimination in Employment Act (age), sexual orientation, or veteran status should be directed to the Office of Investigation & Resolution 216 Business Incubator Building 2450 EJ. Chapman Drive Knoxville, Tennessee 37996 or (865)974-0717 or investigations@utk.edu.

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Contact Information

Please reference Academickeys in your cover letter when
applying for or inquiring about this job announcement.

Contact Prof. Brian Wirth
UT-Oak Ridge Innovation Institute
University of Tennessee
Knoxville, TN

Contact E-mail bdwirth@utk.edu