

Research Professor Advanced Manufacturing of Materials
for Fusion Extremes
University of Tennessee

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

Job Title	Research Professor Advanced Manufacturing of Materials for Fusion Extremes
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 Mechanics Engineering - Other
Job Website	https://apply.interfolio.com/148096
Apply Online Here	https://apply.interfolio.com/148096
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Job Description	

The University of Tennessee has an opening for a Research Assistant/Associate/ Full Professor in Materials Development for Extreme Fusion Environments. 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 developing new alloys and composite materials for extreme environment applications, where high temperature, irradiation, plasma erosion, magnetic field, and coupled conditions are critical

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bottlenecks. The research focus shall encompass design, synthesis, and scale-up of these materials, accelerated by center-wide experiment-theory feedback loops evaluating magnetic properties, mechanical properties, radiation resistance, and high temperature performance in addition to microstructural characterization. The work will also be closely coupled with modeling efforts providing insight and assistance with the materials design and development. 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.
- Extensive research experience in material design and bulk synthesis/processing methods for advanced metallic alloys or ceramics.
- Additional research experience in areas that support the extreme materials mission of the UTORII project focused on fusion applications including, but not limited to:
 - Synthesis of refractory or compositionally complex alloys or ceramics.
 - Advanced characterization of material atomic structures and microstructures utilizing X-ray and electron microscopy-based techniques.
 - Thermo-mechanical property measurements supporting Processing-Structure-Property-Performance feedback loops.

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- Interrogation of materials under extreme temperature, magnetic fields, and/or radiation exposures.
- Expertise in nuclear, hypersonic, or other extreme materials applications.
- This position requires the ability to be granted a site-access badge for the Oak Ridge National Laboratory.

Preferred:

- 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. Khalid Hattar (TIBML director) and Prof. Brian Wirth (Governor's Chair Professor in Computational Nuclear Engineering) at khattar@utk.edu and bdwirth@utk.edu, respectively.

Review of applications will begin immediately and will continue until the position is filled. All application materials must be submitted to Interfolio at <https://apply.interfolio.com/148096>.

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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.

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.

Contact Information

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

Contact Prof. Brian Wirth



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