PREP Research Associate

This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requires that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform technical work that underpins the scientific research of the collaboration.

Research Title:
Fiber, composites, and polymer scientist

The work will entail:
The Materials Measurement Laboratory of the National Institute of Standards and Technology is seeking qualified candidates (U.S. Citizens Preferred) for a fiber, composites, and polymer scientist position to lead metrology development in thermomechanical/thermal analysis, chemical analysis, electron microscopy, and structure–property relationships for complex high strength fibers as well as polymeric and composite materials. This role requires hands-on ownership of advanced instrumentation, development of robust and reproducible test methods, and translation of results into actionable guidance for materials design, performance evaluation, and reliability.

Key responsibilities will include but are not limited to:

- Design and execute thermomechanical characterization of polymeric/composite systems
- Develop techniques to fabricate model fiber/composite systems with novel properties
- Lead thermal, thermomechanical, and chemical/structural characterization of materials
- Author peer-reviewed publications and present research to stakeholders
- Support collaborative programs and deliver stakeholder technical solutions

<u>Qualifications</u>

- Ph.D. in materials science, polymer science, fiber science, chemical engineering, or a related discipline
- Expertise in molecular spectroscopy, with experience analyzing single fibers
- Hands-on experience with thermal analysis (DSC, DMA/TGA/TMA)
- Experience working with complex materials (high-strength fibers, composite armor, or structural composites)
- Background in polymer viscoelasticity and physics
- Strong quantitative/data skills (Matlab/Python/Origin)
- Demonstrated record of technical writing and public speaking
- Ability to lead projects, mentor students/postdocs, and coordinate collaborations

Desirable Qualifications:

- Experience in long-term reliability studies

Privacy Act Statement

Authority: 15 U.S.C. § 278g-1(e)(1) and (e)(3) and 15 U.S.C. § 272(b) and (c)

Purpose: The National Institute for Standards and Technology (NIST) hosts the Professional Research Experience Program (PREP) which is designed to provide valuable laboratory experience and financial assistance to undergraduates, post-bachelor's degree holders, graduate students, master's degree holders, postdocs, and faculty.

PREP is a 5-year cooperative agreement between NIST laboratories and participating PREP Universities to establish a collaborative research relationship between NIST and U.S. institutions of higher education in the following disciplines including (but may not be limited to) biochemistry, biological sciences, chemistry, computer science, engineering, electronics, materials science, mathematics, nanoscale science, neutron science, physical science, physics, and statistics. This collection of information is needed to facilitate administrative functions of the PREP Program.

Routine Uses: NIST will use the information collected to perform the requisite reviews of the applications to determine eligibility, and to meet programmatic requirements. Disclosure of this information is also subject to all the published routine uses as identified in the Privacy Act System of Records Notices: NIST-1: NIST Associates.

Disclosure: Furnishing this information is voluntary. When you submit the form, you are indicating your voluntary consent for NIST to use of the information you submit for the purpose stated.