PREP Research Associate
CHIPS Funded Project

This position is part of the National Institute of Standards and Technology (NIST) Professional Research Experience Program (PREP). NIST recognizes that its research staff may want to collaborate with researchers at academic institutions on specific projects of mutual interest and, therefore, requires those institutions to be recipients of a PREP award. The PREP program involves staff from a wide range of backgrounds conducting scientific research across various fields. Individuals in this position will perform technical work supporting the collaboration's scientific research.

Research Title:
Thermoreflectance Thermal Property Measurements (U.S. Citizens Preferred)

The work will entail:
The Materials Measurement Laboratory of the National Institute of Standards and Technology is seeking qualified persons (U.S. Citizens Preferred) to validate and improve thermoreflectance optical pump-probe thermal-property measurement methods, develop and refine instrumentation, optimize protocols, and provide thermal property data for thin-film and multilayer materials that can improve the performance, reliability, and thermal management in microelectronics packages and wide bandgap power electronics. The researcher will work closely with NIST experts in optics, thermal metrology, scientific instrument design, and uncertainty analysis.

Key responsibilities will include but are not limited to:
- Designing, building, operating, and/or refining pump-probe instrumentation
- Operating and developing physics-based analysis software
- Measuring thermal property data for internal and external collaborators and stakeholders
- Depositing and characterizing thin films in the NIST NanoFab
- Presenting results at internal and/or external meetings as required
- Writing and publishing results

Required Skills, Expertise and Qualifications:
- Ph.D. in physics, optics, materials science/engineering, or other related field
- Experience in designing, building, and operating thermoreflectance-based measurement instrumentation
- Experience in thermal metrology, thermal analysis, and optics
- Experience in thin film deposition and thin film characterization
- Experience with data modeling and programming (MATLAB required)
- Expertise in semiconductor manufacturing processes and device failure analysis
- Experience working in cleanrooms
- Ability to work collaboratively and independently
- Strong oral and written communication skills

Employment Terms:
This opportunity is to be an associate researcher in the Materials Measurement Science Division for a term of 1 year, with options to renew. Associate researchers are NOT Federal Employees, but they work aside NIST researchers and with NIST's often world class instrumentation. Relocation expenses will not be provided. U.S. Citizens hired into associate positions may have the opportunity to seek longer term Federal Employment.

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 the 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. By applying to a CHIPS-funded PREP opportunity, you also acknowledge that participation in the project requires signing a Non-Disclosure Agreement (NDA) prior to beginning any work.