

**TITLE:** Thermoreflectance Thermal Property Measurements (U.S. Citizens Preferred)

**Overview**

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.

**Duties**

- 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.

**Salary:** \$80,000 to \$90,000

**How to express interest:** Persons (U.S. Citizens Preferred) who meet all of the required qualifications and who would be interested in taking this position are invited to express their interest by sending an email that briefly describes their qualifications along with a CV to [643assoc@nist.gov](mailto:643assoc@nist.gov). US Citizens should note "US Citizen" and the opportunity title in the email subject line. All others should note "Non-US Citizen" and the opportunity title in the email subject line.