

TITLE: Research Associate, Development and Application of Brillouin Microscopy for Imaging Advanced Packaging Materials (US Citizens Preferred)

The Material Measurement Laboratory of the National Institute of Standards and Technology is seeking a qualified person (US Citizen Preferred) to join a metrology development project in the use of Brillouin, low-frequency Raman (LFR) and fluorescence lifetime imaging (FLIM) microscopy for the study the mechanical properties of complex polymeric materials relevant to advanced semiconductor packaging applications. Candidate will conduct high-level, independent research, developing cutting-edge measurement techniques and methods for characterization of semiconductor industry-relevant materials.

Duties:

- Plan, design, and characterize the performance of advanced microscopes based on Brillouin scattering, Raman scattering and fluorescence lifetimes
- Characterize the mechanical properties of complex polymeric materials using these microscopy methods
- Collaborate with a multi-disciplinary team working to characterize, test, and model polymeric materials relevant to semiconductor packaging applications
- Author publications and present research to stakeholders

Required Skills, Expertise and Qualifications:

- Ph.D. in physics, chemistry, materials science, or related discipline
- Background in Raman and Brillouin light scattering techniques required, including expertise in instrumentation development
- Background in fluorescence lifetime microscopy required, including experimental experience in both time and frequency domain methods
- Experience in the use of microscopy techniques for the measurement of viscoelastic properties of polymeric materials
- Skills and experience in the development of Python code for custom instrument automation
- Strong data analysis and Python programming skills for processing large datasets, fitting models, and producing publication-quality figures.
- Track record of technical writing (peer-reviewed papers, technical reports) and communicating results to mixed audiences.
- Demonstrated ability to lead projects, mentor students/postdocs, and coordinate cross-functional collaborations.
- Ability to work on-site in a laboratory setting in Gaithersburg, MD and meet all safety/training requirements.

Employment Terms: This opportunity is to be an associate researcher in the NIST Materials Measurement and Science Division for a term of 1 year, with options to renew. Associate researchers are NOT Federal Employees, but they work along with 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: up to \$132,000 annually, commensurate with qualifications and experience