

TITLE: Postdoctoral Researcher for Optical Diagnostics of Atomic Layer Deposition Processes (U.S. Citizens preferred)

Overview

The Material Measurement Laboratory of the National Institute of Standards and Technology is seeking qualified persons (U.S. Citizens preferred) to join a multi-disciplinary team of scientists working on advanced modeling of atomic layer deposition (ALD) processes. The project will develop a suite of *in situ* metrology tools to quantify mass transport processes occurring during thermal ALD. Metrology data will support the development of computational fluid dynamics (CFD) and machine learning (ML) models of transport and surface reaction processes.

Duties

- Operating and maintaining multiple ALD system and custom in situ optical setups
- Performing temporally- and spatially-resolved optical measurements during ALD
- Using and analyzing optical process data to validate transport models
- Publishing findings in peer-reviewed scientific journals and presenting at conferences

Required Skills, Expertise and Qualifications

- Hands-on expertise in the design and assembly of research-grade ALD reactors
- Expertise in building and maintaining custom lab instrumentation
- Expertise in vapor phase deposition processes such as ALD
- Safe operation and maintenance of ALD systems
- Operation of in situ process diagnostics, including custom optical setups
- Knowledgeable in vapor transport mechanisms, precursor chemistry, and process development/optimization applicable to ALD
- Ph.D. or equivalent experience in chemistry, physics, materials science, or related field
- Strong written and oral communication skills
- Ability to work as part of a team and independently

Other Desirable Qualifications

- Experience with CFD process modeling

Employment Terms: This opportunity is to be an associate researcher in the NIST Chemical Sciences 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: \$80,000 to \$105,000 per year, based on experience.

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 646assoc@nist.gov. U.S. Citizens should note "U.S. Citizen" and the opportunity title in the email subject line. All others should note "Non-U.S. Citizen" and the opportunity title in the email subject line.