

TITLE: Analytical Chemistry Research Associate for Advancing Chemical Metrology for Semiconductor Cleaning Chemicals (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 develop targeted and non-targeted analytical mass spectrometric-based methods for the identification and quantification of organic contaminants in ultra-pure water and other solvents used in the semiconductor industry. During semiconductor fabrication, large amounts of cleaning chemicals are needed to rinse and clean wafers at different stages of production. The cleanliness and yield of a wafer are determined by the purity of the cleaning solvents. Organic, inorganic, and particulate contaminants in the solvents can be problematic. Thus, analytical methods that can detect known contaminants at lower detection limits, as well as those that enable the discovery of unknown contaminants, could provide insight into which contaminants affect product yield and at what concentrations. This full-time position will focus on developing methods for organic contaminants likely to be present at ultra-trace levels.

Duties

- Advance current methods for quantifying known organic contaminants in ultra-pure water
- Develop non-targeted high-resolution mass spectrometry-based methods for compound discovery at trace levels
- Investigate various extraction and concentration protocols
- Communicate and collaborate with team members
- Present and publish results as appropriate

Required Skills, Expertise and Qualifications

- Experience in advanced analytical instrumentation such as GC-HRMS, GC-MS/MS, LC-HRMS, LC-MS/MS, etc.
- Expertise in compound discovery using HRMS data
- Experience in developing new methods, approaches, and procedures in cooperation with coworkers or advisors with limited supervision
- Ability to build and maintain effective working relations with stakeholders and colleagues, and to work effectively in teams

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 \$100,000

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 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.