

TITLE: Postdoctoral Researcher for In Situ Optical Diagnostics and Process Characterization During Plasma Etching 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 optical diagnostics for plasma etching processes to better correlate tool inputs with etching outcomes and to precisely evaluate consistency across plasma etching tools. The candidate will be responsible for performing spatially- and temporally-resolved optical and electrical measurements during plasma etching processes and correlating those data with time-resolved frequency comb and RF waveform measurements.

Duties

- Assembly, maintenance, and safe operation of plasma processing tools.
- Design and operation of in situ optical and electrical diagnostics.
- Correlating species concentration data from laser absorption measurements with frequency comb and RF waveform measurements.
- Publishing in peer-reviewed scientific journals and presenting at conferences.

Required Skills, Expertise and Qualifications

- Experience in performing optical and electrical plasma diagnostics, including optical emission spectroscopy, infrared laser absorption spectroscopy, and Langmuir probe measurements.
- Expertise in low pressure plasmas, operation of such systems, and process optimization.
- Ability to operate custom-built laboratory instrumentation and in situ optical systems.
- Familiarity with data processing and analysis workflows, preferably using Python.
- Ph.D. or equivalent experience in natural sciences, engineering or a related field.
- Strong written and oral communication skills.
- Ability to work as part of a team and independently.

Other Desirable Qualifications

- Experience modeling plasma optical data to determine plasma properties.

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.