

**PREP Research Associate
CHIPS Funded Project.**

This position is part of the National Institute of Standards and Technology (NIST) Professional Research Experience Program (PREP). NIST recognizes that its research staff may want to collaborate with researchers at academic institutions on specific projects of mutual interest and, therefore, requires those institutions to be recipients of a PREP award. The PREP program involves staff from a wide range of backgrounds conducting scientific research across various fields. Individuals in this position will perform technical work supporting the collaboration's scientific research.

Research Title:

PREP0004207 – 672.01 - On-wafer complex permittivity measurements of materials

The work will entail:

This PREP position focuses on developing traceable standards for 5G, 6G, and beyond. The position requires finite element simulations, programming, network analysis, dimensional metrology, and other skills. The position will use on-wafer and resonator methods to develop standards for mmWave industry to validate the authenticity of integrated circuits and materials.

U.S. Citizen Preferred

Key responsibilities will include but are not limited to:

- The PREP student will coordinate all stakeholder engagement to understand industries need and coordinate regular updates to solicit feedback.
- The PREP student will design, simulate, and assemble on-wafer electronics for mmWave test and measurement.
- The PREP student will design, simulate, and assemble resonator methods for mmWave test and measurement.
- With the measurement systems integrated, the PREP student will perform all measurements and analysis on the data.
- In coordination with NIST researcher, the PREP student will develop and carry out on-wafer metrology.

Qualifications

- A PhD degree in Materials Science Engineering, or a related field.
- 2 years of relevant experience with microelectronic fabrication.
- Familiarity with programming in MATLAB and Python.
- Experience with finite element simulations in ANSYS or COMSOL.
- Strong oral and written communication skills.

Privacy Act Statement

Authority: 15 U.S.C. § 278g-1(e)(1) and (e)(3) and 15 U.S.C. § 272(b) and (c)

Purpose: The National Institute for Standards and Technology (NIST) hosts the Professional Research Experience Program (PREP) which is designed to provide valuable laboratory experience and financial assistance to undergraduates, post-bachelor's degree holders, graduate students, master's degree holders, postdocs, and faculty.

PREP is a 5-year cooperative agreement between NIST laboratories and participating PREP Universities to establish a collaborative research relationship between NIST and U.S. institutions of higher education in the following disciplines including (but may not be limited to) biochemistry, biological sciences, chemistry, computer science, engineering, electronics, materials science, mathematics, nanoscale science, neutron science, physical science, physics, and statistics. This collection of information is needed to facilitate the administrative functions of the PREP Program.

Routine Uses: NIST will use the information collected to perform the requisite reviews of the applications to determine eligibility, and to meet programmatic requirements. Disclosure of this information is also subject to all the published routine uses as identified in the Privacy Act System of Records Notices: NIST-1: NIST Associates.

Disclosure: Furnishing this information is voluntary. When you submit the form, you are indicating your voluntary consent for NIST to use of the information you submit for the purpose stated. By applying to a CHIPS-funded PREP opportunity, you also acknowledge that participation in the project requires signing a Non-Disclosure Agreement (NDA) prior to beginning any work.