

Postdoctoral Researcher Position Available at CU DENVER NIST PREP Program

NIST Organization (Div/Group): [Quantum & Nonlinear Nanophotonics Group](#)

This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requires that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform technical work that underpins the scientific research of the collaboration.

Research Title: Postdoctoral Researcher in microresonator frequency combs with integrated photonics

The work will entail:

- The objective of this project is to conduct research on integrated photonics to explore nonlinear phenomena, system integration, and quantum-based application cases. This project explores nonlinear frequency conversion in microresonator frequency combs, leveraging nanophotonic bandgaps as a novel control of nonlinear dynamics. The work on this project will develop, improve, and maintain experimental and design infrastructure for integrated-photonics research, and will perform collaborative research to study and apply photonics devices.

General Duties and Responsibilities:

- This project will involve development of microresonator frequency combs, including design and simulation of device operation, cleanroom fabrication of integrated photonics, laboratory experiments with integrated photonics and related technologies, and dissemination of fundamental research results.
- Will work on this microresonator frequency comb experiments in our lab.
- Carry out experiments and analysis of time and frequency metrology with frequency combs.
- Designing, fabricating, and performing experiments with high speed and high-power handling photodetectors.

Qualifications:

- A PhD in electrical engineering or related fields.
- Preferably research experience silicon photonics and high-speed photodetectors, microresonator frequency combs designing, fabricating, and performing experiments with high speed and high-power handling photodetectors, making, and utilizing state-of-the-art devices.

NIST Sponsor Name: Scott Papp (scott.papp@nist.gov)

Level of Appointment : Postdoctoral researcher

NIST Grade Equivalent: ZP-III

Salary Determination: \$95,000 - \$100,000

Based on candidate's education and experience, the candidate is equivalent to a NIST grade level as indicated above.

Start date : 2025-03-01

End date: 2028-03-15

For possible consideration and to apply to this position, qualified candidates should send a current CV, including contact information for three references and a publication list, to Hamid Fardi (hamid.fardi@ucdenver.edu). Please submit a single pdf file.

CU Denver NIST PREP* posting:

<https://engineering.ucdenver.edu/research/prep-research-program>

*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.