

Postdoc Position Available at CU DENVER NIST PREP Program

NIST Organization (DIV/Group): Applied Physics Division/Quantum 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:

Development of heterogeneous photonic integrated circuits

Postdoc position description:

The Quantum Nanophotonics and Faint Photonics groups (led by Rich Mirin and Marty Stevens) in the Applied Physics Division at NIST is seeking qualified candidates for a postdoctoral researcher position to work on development of heterogeneous photonic integrated circuits. Of particular interest is development of on-chip high-power and narrow linewidth semiconductor laser sources operating in the wavelength range of 780 nm – 980 nm. The position will be based at NIST in Boulder, Colorado. Candidates will have access to NIST-Boulder Microfabrication Facility, a state-of-the-art 18,000 square foot cleanroom specialized in fabrication of photonic integrated circuits and optoelectronic devices, and to an extensive optical and electrical testing facility. The Quantum Nanophotonics Group also operates a III-V MBE system dedicated to the growth of InAlGaAs semiconductor devices.

General duties and responsibilities

- Simulation and Design of high-power, narrow linewidth, single frequency lasers
- Layout design and device fabrication in Boulder Microfabrication facility
- Optical and electrical testing of the fabricated photonic components
- Chip-scale nonlinear Photonics (Modeling, Design, Fabrication, and Testing)

Qualifications:

- A PhD in Physics, Electrical Engineering, or related field is required.
- Expertise in one or more of the following:
 - Laser device physics
 - Photonic device modeling using COMSOL, Numerical, and/or FIMMWAVE
 - Photonic Integrated Circuit and/or Semiconductor laser fabrication
 - Optics and photonics characterization

NIST Sponsor Name: Nima Nader (nima.nader@nist.gov), Rich Mirin (Richard.mirin@nist.gov)

Level of Appointment: PostDoc

Salary Determination: \$80,000 - \$100,000

Salary will be commensurate with experience

Start Date: 2025-01-15

End Date: 2027-01-14

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 Professor Hamid Fardi (hamid.fardi@ucdenver.edu). Please submit a single pdf file.

CU Denver PREP posting:

https://engineering.ucdenver.edu/research/prep-research_program