NMSU | NIST PREP Program

Ion Storage Group | Postdoctoral Researcher

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.

Postdoc Position Description:
Performing experimental studies on vibrational state control and precision spectroscopy of trapped molecular ions.

General Duties and Responsibilities:

- Designing, constructing, improving, and maintaining an experimental apparatus for studies of trapped molecular ions
- Conducting experiments
- Collaborating with and providing guidance to junior project members when applicable
- Recording and managing experimental data
- Publishing research findings in peer-reviewed journals
- Presenting results at internal meetings, and occasional scientific community meetings

Knowledge, Skills, and Abilities:

- Experience with design and spectroscopy of semiconductor nanostructures.
- Experience with optical measurement techniques such as: coherent detection, resonance florescence, confocal microscopy, laser diagnostics, noise characterization, and statistical optics.
- Experience in cryogenic measurements, with dilution refrigerator experience a plus.
- Ability to code with, or learn to code with:MATLAB, LabView, and Python is required.
- Experience with modern nanofabrication techniques such as electron beam lithography and plasma etching is desirable
- Experience with cryogenic microwave circuit design and testing is a plus.

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Qualifications:

- PhD in physics, chemistry, or a related field.
- Five years of relevant experience.
- ·Preferred: Proficiency with lasers, optics, and trapped ions.
- ·Ability to work with python programming language.
- Preferred: Extensive experience with ARTIQ experimental control systems.
- Strong oral and written communication skills.

NIST Sponsor Name: Chin-wen Chou

Level of Appointment: Postdoctoral Research Associate

Salary Determination: $75,000 - $79,000

Start Date: 2024-10-01
End Date: 2027-09-30

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 Associate Dean, Patricia A. Sullivan (patsulli@nmsu.edu)

NMSU PREP posting:
https://engr.nmsu.edu/students/career-development/nist-prep.html

To Apply: Qualified candidates should send a current CV, including contact information for three references and a publication list, to Dr. Patricia Sullivan (patsulli@nmsu.edu).