zintellect
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Opportunity Title: Integrated photonic-electronic-quantum systems research for future space missions
Opportunity Reference Code: 0301-NPP-MAR26-JPL-TechDev

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0301-NPP-MAR26-JPL-TechDev

How to Apply All applications must be submitted in Zintellect

Please visit the NASA Postdoctoral Program website for application instructions and requirements: How to Apply | NASA Postdoctoral Program (orau.org)

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 3/1/2026 6:00:59 PM Eastern Time Zone

Description **About the NASA Postdoctoral Program**

The NASA Postdoctoral Program (NPP) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

This opportunity involves research and development activities in the following technology areas: 1. Chip-scale stable laser systems using MEMS and nanophotonic technologies including but not limited to silicon nitride on-chip etalons and waveguides, lithium niobate modulators and waveguides, heterogeneous integration/packaging of photonic microdevices, on-chip precision atomic and molecular spectroscopy, physics and chemistry with chip-scale atomic and molecular vapor cells and photonic integration/packaging interfaces; 2. Supporting DC, RF, and microwave electronics and optoelectronics, including but not limited to cutting-edge GaN, GaAs, InGaAs, InP, AlN, diamond, etc semiconductor technologies that potentially can be heterogeneously integrated with stable laser systems.

The goal is to develop integrated photonic-electronic-quantum systems for laser metrology in future large space telescopes, high-speed and secure space communications, sensing, power transfer, and similar missions.

Field of Science: Technology Development

Advisors:

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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: https://www.nasa.gov/oiir/export-control.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Questions about this opportunity? Please email npp@orau.org

Qualifications Successful candidates should hold a PhD in Physics, Photonics, Quantum, Electrical/Mechanical Engineering, or relevant to the above technological areas and should be familiar with a few or more of the following analytical and experimental tools and processes: UV/e-beam lithography, UV imprint, Thermal/E-beam evaporation, Vapor Deposition, Reactive ion/ICP etching, dry/wet etching, Annealing, Poling, SEM, AFM, Nanophotonic design software, Comsol, Ansys, Cadence/Siemens Rf/Microwave EDA, Zemax, Optical Spectrum Analyzer, fiber splicer, RF/DC instruments, laser spectroscopy, Fabry-Perot cavity/delay-line characterization, on-chip waveguide characterization, thermal-mechanical stress analysis, Rf/Microwave load-pull, monolithic-microwave IC design, analog-digital hybrid IC design, chip-bonding and packaging physics and chemistry processes, etc.

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.