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Opportunity Title: Development of Semiconductor Lasers for Absorption Spectroscopy
Opportunity Reference Code: 0104-NPP-MAR26-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0104-NPP-MAR26-JPL-EarthSci

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 4/2/2026 6:00:59 PM Eastern Time Zone

Description **About the NASA Postdoctoral Program**

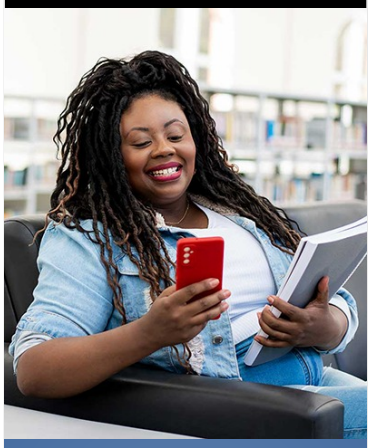
The NASA Postdoctoral Program (NPP) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to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

Description:

The next generation Tunable Diode Laser (TLD) absorption spectrometers, should be compact, low-power consumption, and low-cost for deployment in many future Earth and planetary missions. Such capability is of particular interest for future mission opportunities for Mars, Venus, Jupiter, Europa, and their moons for the detection of biogenic gases and their isotope ratios. The key enabler for realization of such an instrument is the availability of semiconductor lasers at specific wavelengths coinciding with the absorption band of the gases of interest.

The Advanced Microfabrication and Optoelectronics Group at JPL is accepting applications at the post doctorial level to design, fabricate, and characterize advanced semiconductor lasers for application is spectroscopy and LIDAR. For spectroscopy low power consumption room temperature 4-10 micron quantum cascade lasers are currently being developed. For LIDAR applications extremely stable frequency, narrow line width optically or electrically pumped semiconductor lasers in the 2.0-3.0 um wavelength are needed.

Knowledge and experience in infrared quantum cascade laser design, fabrication, including knowledge and experience in the fabrication of single mode semiconductor lasers are required. The candidate will work within a small team developing laser diodes in the 2.0-3.0 micron range and low

NPP NASA Postdoctoral Program
ORAU Pathfinder

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power consumption quantum cascade laser in the 4.0- 10.0 micron wavelength.

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Earth Science

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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

Point of Contact Mikeala

Eligibility Requirements
- **Degree:** Doctoral Degree.