zintellect
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Opportunity Title: Sensors and microelectromechanical systems for missions to hot planets
Opportunity Reference Code: 0178-NPP-MAR26-JPL-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0178-NPP-MAR26-JPL-PlanetSci

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:

In the last few years we have seen rapid growth of III-V semiconductors geared towards a variety of applications where silicon performance falls short. Gallium nitride (GaN), a III-V semiconductor, is proven to be the material of choice for high- frequency, high-power, and high-temperature applications. GaN also offers a number of excellent mechanical properties, making it a suitable material for MEMS. Particularly, GaN and its related material family are very interesting for harsh environment applications. Beyond earth, GaN based microsystems can enable low-cost and long-lasting planetary exploration missions to hot planets. Our research objective is to develop a sensor technology platform that is temperature and radiation tolerant using gallium nitride MEMS technology. In this specific project the postdoc will help with developing temperature stable sensors and micro-instruments working at 500C using GaN based acoustic and micromechanical components.

References:

M. Rais-Zadeh, D. Weinstein, Gallium Nitride for M/NEMS, Book chapter in Piezoelectric MEMS Resonators, pp. 73-98, 2017 M. Rais-Zadeh, et. al, Gallium Nitride as an electromechanical material, J. of Microelectromechanical Microsystems, vol. 23, issue 6, pp. 1252-1271, 2014

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Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Planetary Science

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

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.