

Opportunity Title: MBE Engineered Interfaces for Space Ready UV Detectors

Opportunity Reference Code: 0344-NPP-NOV26-JPL-TechDev

Organization National Aeronautics and Space Administration (NASA)

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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 11/1/2026 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 postdoctoral position centers on the development of next-generation ultraviolet (UV) detector technologies, with a strong emphasis on **molecular beam epitaxy (MBE)** for advanced materials growth and interface engineering. The successful candidate will play a key role in expanding our MBE capabilities for band-structure engineering, surface passivation, and the fabrication of high-performance silicon-based photodetectors.

Research efforts within our UV detector technology team focus on tailoring epitaxial interfaces to enhance detector responsivity, stability, and long-term space worthiness. Recent developments include wafer-scale MBE processing, improvements to MBE-grown passivation layers, and integration of epitaxial materials into flight-ready detector architectures.

We are seeking a candidate with **strong cleanroom fabrication tool experience**, particularly in materials characterization methods such as ellipsometry, AFM, SEM, TEM, XRD, SIMS, or related techniques. Experience with **photodetector device characterization** (quantum efficiency, dark current, noise, spectral response, etc.) is also essential. A key aspect of the role will be the ability to interpret device performance data and use it to refine and optimize fabrication processes, establishing a tight



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feedback loop between detector behavior and process adjustments.

Responsibilities may include:

- Developing and evaluating new MBE growth techniques and epitaxial passivation strategies
- Designing, running, and optimizing cleanroom fabrication processes at wafer scale
- Performing materials and device characterization and using results to guide process improvements
- Documenting research outcomes through first-author publications, conference presentations, and internal technical reports

This work supports multiple NASA research programs with the long-term objective of flight instrument and mission infusion.

Field of Science: Technology Development

Advisors:

April Jewell

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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.