

**Opportunity Title:** Evolution of Organic Matter in Planetary Ices

**Opportunity Reference Code:** 0038-NPP-NOV23-JPL-PlanetSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0038-NPP-NOV23-JPL-PlanetSci

**Application Deadline** 11/1/2023 6:00:59 PM Eastern Time Zone

**Description** The research work focuses on Physics and Chemistry of Outer Planetary Ices using Laboratory Simulations and Spectroscopy. The goal is to understand the evolution of organic matter in ices under the conditions similar to Solar System icy bodies such as comets, satellites of Jupiter and Saturn, Saturnian Rings etc. In order to achieve this goal, it is also necessary to get accurate data on the physical properties of crystalline and amorphous forms of water-rich ices. In addition to the fundamental research mentioned above, the post-doctoral colleague will have an opportunity to participate in next-generation space instrumentation, and analysis of observational data.

The candidates should have a Ph.D. in chemistry, physics, or astrophysics and strong passion to undertake multidisciplinary research to explore unknown territories of astrophysics of ices. Experience and expertise in the following techniques is highly desirable: low-temperature techniques, laboratory ultraviolet and infrared spectroscopy, laser spectroscopy, ultra-high vacuum techniques, mass-spectrometry, and quantum chemistry.

**References:**

1. Unusual Stability of PAH radical cations in Amorphous Water-ices up to 120 K – Astronomical Implications; Gudipati, M. S, Allamandola, L.J.; Astrophys. J. 638 (2006) 286
2. Matrix-Isolation in Cryogenic Water Ices: Facile Generation, Storage and Optical Spectroscopy of Aromatic Radical Cations; Gudipati, M. S. J. Phys. Chem. 108 (2004) 4412

**Location:**

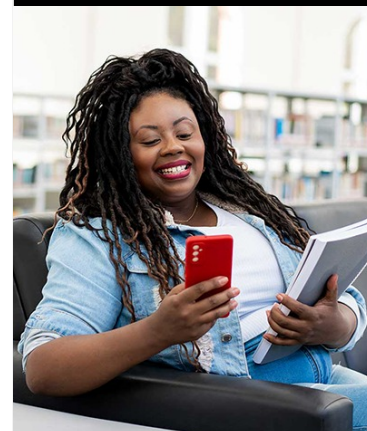
Jet Propulsion Laboratory  
Pasadena, California

**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**



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**the United States.** A complete list of Designated Countries can be found at: <https://www.nasa.gov/oiiir/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

***This opportunity may require the following: 1- Mandatory drug testing; 2-Random drug testing; 3- Testing prior to initiation of fellowship appointment.***

**Eligibility Requirements** • **Degree:** Doctoral Degree.