

Opportunity Title: Development of Aerogels for Use at High Temperatures

Opportunity Reference Code: 0018-NPP-NOV23-GRC-TechDev

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0018-NPP-NOV23-GRC-TechDev

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

Description The objective of this research is to develop advanced aerogels and their composites for use at temperatures $> 700^{\circ}\text{C}$. Potential applications for technology developed under this task include high temperature thermal insulation and compliant seals for aircraft and space vehicles. Areas of investigation include the development of synthesis techniques for inorganic aerogels in the alumina, aluminosilicate, yttria stabilized zirconia and related chemistry systems, and techniques for incorporating the aerogels into fiber reinforced composites. This work encompasses research activities in characterizing the as-synthesized aerogels and establishing their thermal stability at elevated temperatures for prolonged times. The research is directed both at gaining a fundamental understanding of the relationship between synthesis and aerogel morphology and pore stability and understanding how to tailor these properties for NASA applications. This research is well supported by state-of-the-art characterization facilities including Fourier transform infrared spectroscopy, thermal analysis, x-ray diffraction and electron optics, as well as facilities for evaluating composite permeability and thermal and mechanical performance of thermal barrier prototypes.

Location:

Glenn Research Center
Cleveland, Ohio

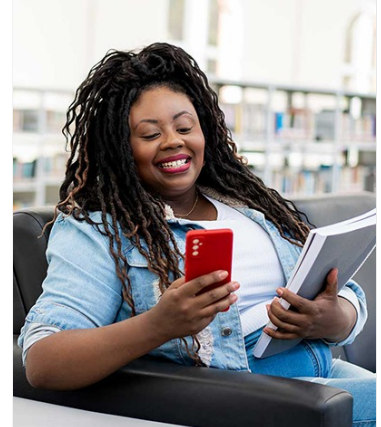
Field of Science: Technology Development

Advisors:

Frances Irene Hurwitz
frances.hurwitz@nasa.gov
216-433-5503

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.



Whether you are just starting your career or already at a senior level, ORAU offers internships, fellowships, research opportunities, and contract positions that can provide you with invaluable experience. Download the ORAU Pathfinder mobile app and find the right opportunity to propel you along your career path!

Visit ORAU Pathfinder [↗](#)

