

Opportunity Title: Safe, High Specific Energy Batteries for Electric Aircraft

Opportunity Reference Code: 0024-NPP-NOV23-GRC-TechDev

Organization National Aeronautics and Space Administration (NASA)

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

Description Advanced battery technology is enabling for the introduction and growth of electrified aircraft for multiple market sectors, including urban air mobility and thin haul. The range for electrified aircraft is a function of the specific energy. While some niche markets for electrified aircraft with limited range are possible with SOA Li-ion batteries, further advances in battery technology are required for introduction of electrified aircraft in multiple markets. It is NASA's desire to develop safe, high specific energy batteries to meet these needs. The primary goal of this research is to develop high specific energy (>500 Wh/kg) cells that meet the safety and performance requirements for future electric aircraft.

The work focuses on the development of new chemistries and cell concepts, leading to the design of battery packs that are inherently safe, thus minimizing the need for thermal control and excess packaging to mitigate safety hazards such as thermal runaway. Research areas include the development of components (cathode, anode, separator/electrolyte), incorporation of these materials into electrochemical cells, and evaluation and characterization under relevant environments. Available facilities include: wet chemistry labs, various analytical equipment, automated testing equipment for both cell and battery pack testing, and a 700 sq. ft. dry room.

Location:

Glenn Research Center
Cleveland, Ohio

Field of Science: Technology Development

Advisors:

Patricia Loyselle
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Eligibility Requirements

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



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