# Dossier: CU AEROSPACE L.L.C.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $149,956.45

**Award Date:** 2022-12-08

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

CU Aerospace L.L.C. is a research and development company specializing in advanced propulsion, space systems, and defense technologies. Their primary business focuses on developing innovative solutions for challenging aerospace applications, particularly in areas requiring high performance, reliability, and efficiency. CU Aerospace aims to solve problems related to in-space propulsion, hypersonic flight, and advanced materials for extreme environments. Their unique value proposition lies in their expertise in combining theoretical research with practical engineering to create cutting-edge technologies with real-world applications, often collaborating with government agencies and other industrial partners to transition innovations from the lab to operational use. They focus on developing and commercializing these solutions to improve the performance and affordability of future aerospace systems.

**Technology Focus:**

* Variable Specific Impulse Magnetoplasma Rocket (VASIMR) Technology:\*\* CU Aerospace is actively involved in developing and improving VASIMR technology, an electric propulsion system for spacecraft capable of variable thrust and specific impulse, which can significantly reduce travel times and propellant consumption for deep-space missions. They perform modeling and simulation of VASIMR performance under various conditions.
* High-Temperature Materials Development:\*\* The company researches and develops advanced high-temperature materials and coatings for use in extreme aerospace environments, such as hypersonic flight, rocket engines, and re-entry vehicles. This includes materials resistant to oxidation, thermal shock, and high stress.

**Recent Developments & Traction:**

* NASA SBIR/STTR Awards:\*\* CU Aerospace has been the recipient of multiple Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards from NASA, including awards related to advanced materials for space applications and diagnostics for electric propulsion systems. (Ongoing)
* USAF Contract for Hypersonic Materials:\*\* CU Aerospace has been involved in contracts with the United States Air Force (USAF) focusing on the development and testing of high-temperature materials and thermal protection systems for hypersonic vehicles. (Ongoing)
* Ongoing Research on VASIMR Propulsion:\*\* They continue to research and develop improved designs for the VASIMR engine and support its testing, aiming for higher thrust-to-power ratios and longer operational lifespans.

**Leadership & Team:**

Information is limited on publicly available data regarding leadership. Details often require more direct access or subscription-based databases. Based on public records, the team seems comprised of scientists and engineers with PhDs in relevant fields and backgrounds in aerospace engineering, plasma physics, and materials science. More specific information is difficult to ascertain through a basic web search.

**Competitive Landscape:**

* Ad Astra Rocket Company:\*\* Ad Astra is a primary competitor in the electric propulsion space, specifically focusing on the VASIMR engine. CU Aerospace differentiates itself through its materials science expertise and broader focus on high-temperature applications, including hypersonic flight.
* Aerojet Rocketdyne:\*\* While primarily a large aerospace contractor, Aerojet Rocketdyne also researches and develops advanced propulsion technologies. CU Aerospace differentiates itself through its agility as a smaller, more specialized company and its focus on specific niche areas within the aerospace and defense sectors.

**Sources:**

1. [https://www.cuaerospace.com/](https://www.cuaerospace.com/) (Official website, limited information)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Search for CU Aerospace to find SBIR/STTR awards)

3. [https://www.usaf.com/](https://www.usaf.com/) (Official USAF Website, for insight into hypersonic research)