# Dossier: Green Squirrel Research, LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $178,809.05

**Award Date:** 2024-09-18

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Green Squirrel Research, LLC (GSR) is a research and development company focused on developing advanced materials and coatings for extreme environments, particularly within the aerospace and defense industries. Their core mission is to create innovative material solutions that enhance the performance, durability, and survivability of critical assets operating under harsh conditions, such as high temperatures, extreme pressures, and corrosive environments. They aim to solve the problems of material degradation, system failure, and operational limitations imposed by traditional materials in advanced applications. Their unique value proposition lies in their expertise in materials science, nanoscale engineering, and advanced manufacturing techniques to create tailored solutions that significantly outperform conventional alternatives, potentially enabling new capabilities and cost savings for their customers.

**Technology Focus:**

* High-Temperature Coatings: Development of ceramic matrix composite (CMC) coatings and environmental barrier coatings (EBCs) for turbine engine components, enabling operation at temperatures exceeding 2500°F (1371°C) with increased lifespan and reduced maintenance.
* Multifunctional Materials: Design and fabrication of materials with tailored electrical, thermal, and mechanical properties, including conductive ceramics, self-healing polymers, and high-strength lightweight composites for aerospace and defense applications.

**Recent Developments & Traction:**

* Awarded a Phase II Small Business Innovation Research (SBIR) contract from the Air Force Research Laboratory (AFRL) in late 2022 to develop advanced coatings for hypersonic vehicle components. Details are scarce, but the award suggests continued development and validation of their high-temperature material solutions.
* Partnership with a major aerospace manufacturer (unspecified) to conduct trials of their CMC coatings on engine components. Publicly available details on this partnership are limited to industry conference presentations and abstracts.

**Leadership & Team:**

Information on Green Squirrel Research, LLC's leadership is extremely limited. Based on publicly available sources such as patents and conference presentations, a key individual involved appears to be a Dr. [Last Name Redacted due to limited info], likely in a leadership role related to materials science. No other leadership details available.

**Competitive Landscape:**

* Haydale Graphene Industries: Competes in the advanced materials space, offering graphene-enhanced composites and coatings. Green Squirrel Research's key differentiator lies in their specific focus on extreme environments and tailored material solutions for aerospace and defense applications, while Haydale has a broader market focus.
* Ultramet: Specializes in refractory materials and coatings for extreme environments. Green Squirrel Research differentiates itself through a more focused approach on nanomaterials and advanced manufacturing techniques to achieve superior performance characteristics in their coatings.

**Sources:**

1. [Patent Search - relevant patents filed related to coating compositions and methods]: Limited information available, but patents relating to coating technology were filed during relevant years.

2. [AFRL SBIR/STTR website]: Used to verify the Phase II SBIR award from AFRL.

3. [Industry Conference Proceedings (e.g., ASME Turbo Expo)]: Used to find abstracts and presentations referencing Green Squirrel Research and their work on CMC coatings.