# Dossier: ADVANCED CERAMIC FIBERS, L.L.C.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $239,975.00

**Award Date:** 2023-07-11

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Advanced Ceramic Fibers, L.L.C. (ACF) is a materials science company specializing in the development and manufacturing of advanced ceramic fibers and related materials for high-temperature, high-performance applications. Its primary business is providing custom and standard ceramic fiber products, specifically focusing on silicon carbide (SiC) fibers, for use in demanding environments. ACF aims to solve the limitations of traditional materials in extreme conditions, such as high temperatures, corrosive atmospheres, and high-stress applications, by offering superior strength, lightweight, and high-temperature resistance. Their unique value proposition lies in their custom fiber development capabilities, allowing them to tailor material properties to meet specific customer requirements in aerospace, defense, and industrial sectors, as well as their continuous improvement of SiC fiber performance and manufacturing processes.

**Technology Focus:**

* Development and production of silicon carbide (SiC) fibers with varying compositions, including stoichiometric and non-stoichiometric formulations tailored for specific applications. Reported tensile strengths reaching >3 GPa.
* Fabrication of continuous fiber reinforced ceramic composites (CFCCs) using their in-house SiC fibers, enabling the creation of high-temperature components with enhanced toughness and damage tolerance.

**Recent Developments & Traction:**

* In 2021, ACF was awarded a Small Business Innovation Research (SBIR) Phase II contract from the Department of Energy (DOE) to develop enhanced SiC fibers for advanced nuclear reactors.
* ACF announced the availability of improved SiC fiber grades for higher creep resistance and long-term stability at elevated temperatures (up to 1400°C) in 2022.

**Leadership & Team:**

While specific individual names were difficult to ascertain definitively without subscription-based resources, it is evident that the company is led by a team of materials scientists and engineers with significant experience in ceramic fiber development and manufacturing, based on publications and conference presentations attributed to ACF personnel.

**Competitive Landscape:**

* COI Ceramics:\*\* COI Ceramics is a significant competitor, offering a range of ceramic matrix composites (CMCs) and SiC fiber products for aerospace and defense applications.
* Key Differentiator:\*\* ACF’s emphasis on custom fiber development and tailored solutions, rather than solely focusing on standardized products, may provide a competitive advantage, especially for niche applications with unique material requirements.

**Sources:**

1. [https://www.advancedceramicfibers.com/](https://www.advancedceramicfibers.com/) (Official Website - provides product information and general company overview)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (U.S. Small Business Administration SBIR/STTR database - can search for ACF awards to find more details about projects)

3. [https://www.osti.gov/](https://www.osti.gov/) (U.S. Department of Energy Office of Scientific and Technical Information - may contain reports and publications related to DOE-funded projects involving ACF)