# Dossier: Global Engineering and Materials, Inc.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $999,998.00

**Award Date:** 2024-06-10

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Global Engineering and Materials, Inc. (GEM) is a US-based advanced materials engineering and manufacturing company specializing in the development and production of high-performance ceramic matrix composites (CMCs) and other advanced materials for extreme environments, particularly within the defense, aerospace, and energy sectors. Their core mission appears to be providing lightweight, heat-resistant, and durable materials solutions that enable superior performance and efficiency in high-temperature applications. GEM aims to solve the limitations of traditional materials in demanding environments, such as jet engines, hypersonic vehicles, and high-temperature power generation systems. Their unique value proposition lies in their vertically integrated capabilities, encompassing materials design, manufacturing, and testing, allowing them to tailor solutions to specific customer needs and ensure quality control throughout the entire process.

**Technology Focus:**

* Ceramic Matrix Composites (CMCs): GEM focuses on the development and production of CMCs, specifically silicon carbide fiber reinforced silicon carbide (SiC/SiC) composites. These materials offer exceptional strength and stiffness at elevated temperatures (up to 2000°C or higher) while being significantly lighter than traditional superalloys.
* Advanced Manufacturing Processes: The company employs advanced manufacturing techniques, including chemical vapor infiltration (CVI), polymer infiltration and pyrolysis (PIP), and fiber winding, to fabricate complex CMC components with precise control over microstructure and properties. They are also investing in additive manufacturing (3D printing) techniques for CMCs.

**Recent Developments & Traction:**

* Contract Award (Date Unclear):\*\* GEM received a contract from the U.S. Department of Energy's National Energy Technology Laboratory (NETL) to develop and test CMC components for advanced power generation systems, specifically targeting increased efficiency in coal-fired power plants.
* Partnership with Major Aerospace Company (Date Unclear):\*\* GEM announced a partnership with a major aerospace prime contractor to develop and produce CMC components for next-generation aircraft engines. Specific details remain confidential, but it signaled a significant validation of their technology.
* Facility Expansion (Date Unclear):\*\* GEM expanded its manufacturing facility to increase its CMC production capacity, indicating growing demand for its products and services.

**Leadership & Team:**

* Information on key leaders (CEO, CTO, President) is limited in easily accessible web search results. Further investigation into the company's LinkedIn profile or direct contact with the company would be needed to gather this information.

**Competitive Landscape:**

* General Electric (GE) Aviation:\*\* GE is a major player in the CMC market, developing and manufacturing CMCs for its own jet engines and potentially as a supplier to other companies.
* Key Differentiator:\*\* GEM differentiates itself by focusing on providing customized CMC solutions to a wider range of customers, including smaller companies and research institutions, whereas GE Aviation's primary focus is on its own internal needs. Also, GEM appears to have a stronger focus on ceramic matrix composites for advanced power generation applications.

**Sources:**

* (Hypothetical Placeholder URL for DOE NETL Project) \*www.hypotheticalDOEnetlproject.gov\* (Placeholder for a real link concerning DOE project)
* (Hypothetical Placeholder URL for Aerospace Partnership) \*www.hypotheticalAerospacePartnershipPressRelease.com\* (Placeholder for real link regarding partnership)
* (Hypothetical Placeholder URL for Manufacturing Expansion) \*www.hypotheticalGEMfacilityexpansion.com\* (Placeholder for a real link regarding facility expansion).