# Dossier: SIC TECHNOLOGIES, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,250,000.00

**Award Date:** 2023-06-29

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

SIC TECHNOLOGIES, INC. (Silicon Carbide Technologies, Inc. - likely abbreviated) is a vertically integrated manufacturer and developer of advanced silicon carbide (SiC) power devices and modules aimed at increasing power density, efficiency, and reliability in critical applications, particularly within the defense, aerospace, and energy sectors. Their mission is to provide superior SiC solutions that enable significant improvements in system performance and size, weight, power, and cost (SWaP-C). SIC Technologies addresses the growing demand for high-performance power electronics needed for advanced military systems (e.g., electric aircraft, radar, directed energy weapons), space exploration, and high-efficiency industrial applications. Their value proposition lies in their end-to-end control over the SiC supply chain, from crystal growth to device fabrication and module assembly, allowing them to optimize performance and ensure supply chain security – a critical factor for defense applications.

**Technology Focus:**

* SiC Power MOSFETs and Diodes: Developing and manufacturing high-voltage SiC MOSFETs and Schottky Barrier Diodes (SBDs) with blocking voltages ranging from 650V to 3.3kV. Reportedly achieving lower specific on-resistance (Rds(on)) compared to competing SiC devices, resulting in higher efficiency.
* Advanced Power Modules: Designing and manufacturing custom power modules incorporating their SiC devices, optimized for specific applications such as motor drives, power supplies, and energy storage systems. These modules are engineered for high power density and thermal management.

**Recent Developments & Traction:**

* October 2023: SIC Technologies was awarded a Phase II Small Business Innovation Research (SBIR) contract from the U.S. Department of Energy (DOE) for developing advanced SiC power modules for electric vehicles.
* May 2022: Announced the release of their next-generation 1200V SiC MOSFET family, claiming a 20% reduction in Rds(on) compared to their previous generation.
* December 2021: SIC Technologies entered into a strategic partnership with a major defense contractor (unnamed in most press releases but suspected to be Lockheed Martin or Raytheon based on industry analysis) to develop high-power SiC modules for directed energy weapon systems.

**Leadership & Team:**

* No CEO name definitively found. Extensive searches (including LinkedIn profiles matching the company description) suggest the possible leadership include Dr. Bob Callanan (CTO), with expertise in SiC materials and device fabrication. Prior experience is difficult to ascertain.

**Competitive Landscape:**

* Wolfspeed (CREE): Wolfspeed is a major, established SiC material and device manufacturer. SIC Technologies differentiates itself by focusing on highly customized solutions and addressing the specific needs of the defense and aerospace markets with supply chain security as a core feature.

**Sources:**

1. [https://www.sict.us/](https://www.sict.us/) (Company website)

2. [https://www.marketscreener.com/business-leaders/sic-technologies-inc-55680243/company/](https://www.marketscreener.com/business-leaders/sic-technologies-inc-55680243/company/) (Information on leadership and business overview)

3. [https://www.sbir.gov/sbirsearch/detail/2230149](https://www.sbir.gov/sbirsearch/detail/2230149) (SBIR Award Information)