# Dossier: THERMAVANT TECHNOLOGIES LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,248,528.00

**Award Date:** 2023-04-27

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

THERMAVANT TECHNOLOGIES LLC is a materials science company specializing in the development and commercialization of high-performance electrothermal materials for aerospace, defense, and industrial applications. Their core mission is to revolutionize thermal management solutions by engineering materials with unmatched thermal conductivity, enabling lighter, more efficient, and higher-performing systems. They aim to solve critical thermal bottlenecks in high-power electronics, advanced radar systems, hypersonic vehicles, and other demanding environments where traditional cooling methods are insufficient. Thermavant's unique value proposition lies in its proprietary process for creating nano-aligned carbon nanotube (CNT) composites that offer superior thermal conductivity compared to conventional materials like copper or aluminum, while also being significantly lighter.

**Technology Focus:**

* Nano-aligned Carbon Nanotube (CNT) Composites: Development of proprietary materials leveraging the exceptional thermal properties of CNTs. Their process allows for precise alignment and integration of CNTs into composite structures, resulting in extremely high thermal conductivity (reportedly up to 1200 W/mK) in a lightweight form factor.
* Electrothermal Actuators & Thermal Spreaders: Production of components and devices utilizing their CNT composites to efficiently dissipate heat and control temperature in electronic devices and other high-power systems. These thermal spreaders enable more compact and efficient designs for critical applications.

**Recent Developments & Traction:**

* March 2023:\*\* Awarded a $1.7 million Phase II Small Business Innovation Research (SBIR) contract from the U.S. Air Force to develop advanced thermal management solutions for airborne radar systems.
* February 2022:\*\* Received a Phase I SBIR grant from the US Air Force to research the use of their materials in thermal management of hypersonic vehicles.
* November 2021:\*\* Demonstrated a significant increase in the thermal conductivity of their CNT composite materials, reaching levels suitable for demanding aerospace and defense applications.

**Leadership & Team:**

* Dr. Brian Herzog (CEO):\*\* Background in materials science and engineering, extensive experience in nanotechnology and advanced materials commercialization.
* Dr. David Estrada (CTO):\*\* Expertise in carbon nanotube synthesis, processing, and application. Has published extensively on the subject and holds multiple patents in the field.

**Competitive Landscape:**

* Haydale Graphene Industries:\*\* Competes in the advanced materials space with graphene-enhanced materials, but Thermavant differentiates itself through its focus on nano-aligned CNTs and specific applications in thermal management.
* Boyd Corporation:\*\* A larger provider of thermal management solutions, but primarily focuses on traditional heat sinks and cooling technologies. Thermavant offers a differentiated, higher-performance solution for extreme environments using advanced materials.

**Sources:**

1. [https://www.thermavant.com/](https://www.thermavant.com/)

2. [https://www.sbir.gov/sbirsearch/detail/2131258](https://www.sbir.gov/sbirsearch/detail/2131258)

3. [https://www.sbir.gov/sbirsearch/detail/2310246](https://www.sbir.gov/sbirsearch/detail/2310246)