# Dossier: NOVUM NANO, LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $66,698.00

**Award Date:** 2024-05-23

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

NOVUM NANO, LLC, based in Austin, Texas, is a materials science company specializing in the development and manufacturing of advanced carbon nanomaterials, specifically focused on tunable, ultra-thin conductive films and coatings based on their proprietary nanocarbon deposition technology. Their primary mission is to revolutionize electronics and energy storage by providing materials with superior electrical, thermal, and mechanical properties compared to traditional materials. They aim to solve critical problems in industries like defense, aerospace, and automotive where lightweight, high-performance, and durable components are essential. Novum Nano's unique value proposition lies in its ability to precisely control the morphology and orientation of nanocarbons at the atomic level, leading to customizable material properties and performance characteristics for specific applications, effectively tailoring materials to meet the specific needs of their clients. This precise control enables the creation of materials that are exceptionally thin, lightweight, and exceptionally conductive.

**Technology Focus:**

* Tunable Nanocarbon Films and Coatings:\*\* NOVUM NANO's core technology is a vapor deposition process for creating ultra-thin films and coatings based on carbon nanotubes (CNTs) and graphene. Their patented process allows for precise control over the alignment, density, and doping of the nanocarbons. These films can be deposited on various substrates, including flexible materials, and offer exceptional electrical conductivity, surpassing that of conventional materials like indium tin oxide (ITO) in some applications.
* Nanocarbon-Enhanced Composites:\*\* They also develop nanocarbon-enhanced composite materials for applications requiring high strength-to-weight ratios and improved thermal management. This involves incorporating their precisely aligned nanocarbons into polymer matrices to create materials with enhanced mechanical strength, thermal conductivity, and electrical conductivity.

**Recent Developments & Traction:**

* SBIR Funding:\*\* In 2022 and 2023, NOVUM NANO has been awarded multiple Small Business Innovation Research (SBIR) grants from the Department of Defense (DoD), demonstrating significant government interest in their technology for defense applications. One award was specifically focused on developing advanced electronic warfare materials.
* Collaboration with US Air Force Research Laboratory (AFRL):\*\* Publicly available information indicates collaboration with AFRL, focusing on the development of advanced materials for antennas and other electronic components. The specific details of this collaboration are limited due to the sensitive nature of defense research.
* Expanding Production Capabilities:\*\* While specific financial details aren't publicly disclosed, website language indicates expansion of manufacturing capabilities to meet anticipated demand from government and commercial partners.

**Leadership & Team:**

* While specific names are not always publicly available, publicly accessible information indicates a strong team of materials scientists and engineers with expertise in nanomaterials synthesis, characterization, and application development. Specific names were unable to be confirmed using publicly available sources.

**Competitive Landscape:**

* Haydale Graphene Industries:\*\* Similar to NOVUM NANO, Haydale Graphene Industries focuses on enhancing materials with graphene. NOVUM NANO's key differentiator is its focus on precise control over the \*alignment\* and orientation of nanocarbons during deposition, which allows for more tailored and potentially superior performance in specific applications such as high-frequency electronics. This precise control allows for greater uniformity and ultimately conductivity of their materials.
* Vorbeck Materials:\*\* Vorbeck Materials develops graphene-based conductive inks and coatings. NOVUM NANO distinguishes itself by using a vapor deposition process, allowing for thinner and potentially higher-performance films compared to ink-based solutions, particularly for applications requiring high precision and uniformity.

**Sources:**

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

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Searched for Novum Nano SBIR awards)

3. Various government websites (limited specific links available due to search strategies used)