# Dossier: NANOHMICS INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $179,999.00

**Award Date:** 2024-09-30

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

NANOHMICS INC. is a materials science company focused on developing and manufacturing advanced nanomaterials, specifically thin films, for a range of applications including sensing, energy storage, and microelectronics. Their core mission appears to be enabling next-generation devices with enhanced performance and functionality through precise control of material properties at the nanoscale. They aim to solve problems related to limited sensitivity, durability, and energy efficiency in existing sensor technologies, battery chemistries, and electronic components. Their unique value proposition lies in the ability to engineer materials with tailored properties through atomic layer deposition (ALD) and related techniques, leading to superior performance characteristics compared to conventional materials. They provide turn-key sensor solutions based on their proprietary nanomaterial coatings, as well as offering ALD equipment and processing services to other materials researchers and manufacturers.

**Technology Focus:**

* Atomic Layer Deposition (ALD) Technology:\*\* NANOHMICS uses ALD to create highly uniform, conformal, and pinhole-free thin films with atomic-level control. This allows for the precise engineering of material properties, such as composition, thickness, and morphology. They specialize in ALD of transition metal oxides and nitrides.
* Advanced Sensing Materials & Devices:\*\* They develop and manufacture thin film-based sensors for a variety of applications, including gas sensing, bio-sensing, and environmental monitoring. Specific examples include high-sensitivity NO2 sensors, humidity sensors based on ALD-grown TiO2, and solid-state electrolyte-based microsensors.

**Recent Developments & Traction:**

* Funding Award:\*\* In July 2022, Nanohmics announced the receipt of a Phase II Small Business Innovation Research (SBIR) grant from the Department of Energy (DOE) to develop advanced thin film materials for solid-state batteries.
* New Sensor Products:\*\* Nanohmics has recently expanded its portfolio of sensors, offering a novel SO2 sensor and expanded their range of NO2 sensors, indicating product development and market expansion.
* Contract Award:\*\* In June 2023, Nanohmics received a contract with the U.S. Air Force to improve sensors used for measuring atmospheric pressures and temperatures.

**Leadership & Team:**

* Igor Vodyanoy, Ph.D. (CEO):\*\* Possesses extensive experience in nanomaterials and sensor development, with a strong background in atomic layer deposition and thin film technologies. Previous work includes positions in academia and industry focused on advanced materials research.
* [Unable to find a publicly listed CTO. Information may be proprietary.]\*\*

**Competitive Landscape:**

* Applied Materials:\*\* A large, established player in the semiconductor and materials processing equipment market. Differentiator: NANOHMICS focuses on niche applications and custom materials development leveraging its ALD expertise, while Applied Materials targets larger-scale semiconductor manufacturing.
* Brewer Science:\*\* A company specializing in materials and equipment for advanced packaging and microelectronics. Differentiator: NANOHMICS maintains a stronger emphasis on sensor technology and bespoke ALD-based solutions for specific sensing challenges, whereas Brewer Science offers a more comprehensive portfolio of materials for the semiconductor industry.

**Sources:**

1. [https://nanohmics.com/](https://nanohmics.com/)

2. [https://www.sbir.gov/sbirsearch/detail/2125182](https://www.sbir.gov/sbirsearch/detail/2125182)

3. [https://www.photonics.com/Researchers\_Improve\_Sensors\_for\_Measuring\_a/eg2077](https://www.photonics.com/Researchers\_Improve\_Sensors\_for\_Measuring\_a/eg2077)