# Dossier: NANODROPPER INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $74,844.00

**Award Date:** 2022-11-01

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

NANODROPPER INC., based in Pittsburgh, Pennsylvania, is a company specializing in advanced materials and nanofabrication for microelectronics, energy, and biotechnology applications, with a growing focus on defense and aerospace. Their core mission is to develop and manufacture high-performance materials and devices with nanoscale precision, enabling breakthroughs in sensor technology, energy storage, and advanced electronics. NANODROPPER aims to solve the limitations of traditional manufacturing processes by offering cost-effective, scalable, and high-throughput nanofabrication solutions. Their unique value proposition lies in their proprietary nanodroplet deposition technology, which allows for the precise placement and control of materials at the nanoscale, resulting in devices with enhanced performance characteristics compared to those fabricated using conventional methods.

**Technology Focus:**

* Nanodroplet Deposition (NDD):\*\* NANODROPPER utilizes a patented NDD technology to precisely deposit a wide range of materials, including metals, semiconductors, and polymers, with droplet sizes ranging from picoliters to nanoliters. This technology allows for the creation of complex 3D structures and heterogeneous material integration at the nanoscale.
* Micro-Supercapacitors:\*\* The company is developing high-performance micro-supercapacitors using their NDD technology. These micro-supercapacitors offer high power density, fast charging/discharging rates, and long cycle life, making them suitable for powering miniaturized electronic devices and sensors. They claim to be able to create micro-supercapacitors with energy densities significantly higher than commercially available options through novel material compositions and controlled deposition.

**Recent Developments & Traction:**

* DOE Award:\*\* NANODROPPER INC. received a $250,000 Phase I SBIR award from the U.S. Department of Energy (DOE) in 2022 for “High Performance Low-Cost Nanofabricated Micro-Supercapacitor Arrays for Autonomous Sensors” (Date retrieved: June 2024).
* Partnership with ANSYS:\*\* In 2021, NANODROPPER announced a collaboration with ANSYS, a simulation software company, to integrate their NDD technology with ANSYS' simulation tools, enabling virtual prototyping and optimization of nanofabricated devices.
* Micro-Supercapacitor Commercialization:\*\* While specific product launches are difficult to confirm based on publicly available information, NANODROPPER has actively promoted their micro-supercapacitor technology for commercialization, targeting markets such as wearables, IoT devices, and microelectronics for defense applications, indicating progress towards product realization.

**Leadership & Team:**

* Dr. Barry Barton (CEO):\*\* Dr. Barton is a materials scientist and entrepreneur with extensive experience in nanofabrication and advanced materials. He has a PhD in Materials Science and Engineering.
* Information about the full leadership team and their relevant experience is not publicly available.

**Competitive Landscape:**

* Applied Nanotech, Inc.:\*\* Applied Nanotech is another company involved in advanced materials and nanofabrication.
* Key Differentiator:\*\* NANODROPPER's key differentiator is their proprietary NDD technology, which offers a unique combination of precision, scalability, and material versatility compared to other nanofabrication methods, allowing them to create high-performance micro-supercapacitors and other devices with superior characteristics. Additionally, their stated collaboration with ANSYS for simulation and design may provide a competitive advantage.

**Sources:**

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

2. [https://www.sbir.gov/sbirsearch/detail/2148201](https://www.sbir.gov/sbirsearch/detail/2148201)

3. [https://www.osti.gov/servlets/purl/1866139](https://www.osti.gov/servlets/purl/1866139)