# Dossier: FORGE NANO, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $179,996.30

**Award Date:** 2024-08-20

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Forge Nano, Inc. specializes in applying atomic layer deposition (ALD) to modify the surfaces of materials at the nanoscale, primarily focusing on energy storage, advanced materials, and catalysis. Their core mission is to revolutionize materials science by enabling precise control over the composition and structure of materials at the atomic level, leading to enhanced performance, durability, and functionality. They aim to solve problems related to battery life, corrosion resistance, material strength, and catalytic activity. Their unique value proposition lies in their proprietary ALD technology platform, which allows for conformal and uniform coatings on complex 3D structures, providing tailored material properties that are difficult or impossible to achieve with traditional coating methods. This allows them to create highly customized and performance-enhanced materials for various industries, including aerospace and defense.

**Technology Focus:**

* Atomic Layer Deposition (ALD) Platform:\*\* Forge Nano employs a proprietary ALD platform capable of depositing ultra-thin, conformal coatings of various materials (oxides, metals, polymers) onto powders, fibers, and complex 3D structures. Their ALD systems can operate at high throughput, enabling the production of coated materials at commercial scales.
* Battery Material Enhancement:\*\* Forge Nano utilizes ALD to enhance the performance of battery materials, such as lithium-ion and solid-state batteries. Their ALD coatings improve cycle life, energy density, and safety by stabilizing electrode materials and reducing interfacial resistance. One specific application involves improving the performance of NCM (Nickel Cobalt Manganese) cathode materials through precise ALD coating.

**Recent Developments & Traction:**

* Partnership with US Army:\*\* In March 2023, Forge Nano announced a partnership with the U.S. Army to develop advanced battery materials for military applications using their ALD technology. The project aimed to enhance the energy density and safety of batteries used in soldier-worn equipment and unmanned systems.
* Series B Funding:\*\* In 2021, Forge Nano closed a Series B funding round. While the exact amount and lead investor were not publicly disclosed in easily accessible sources, it was noted that the funding would be used to expand their manufacturing capacity and accelerate the commercialization of their ALD-coated materials.
* ALD System Sales:\*\* Forge Nano has actively sold their ALD equipment to research institutions and industrial partners, contributing to revenue growth and demonstrating the viability of their technology.

**Leadership & Team:**

* Bart Riley (CEO):\*\* Possesses extensive experience in leading and scaling technology companies, particularly in the materials science and energy storage sectors.
* Mike Talarico (CTO):\*\* Leading the technological advancements and research within Forge Nano, focusing on the development and application of ALD techniques. Prior experience includes significant work in materials science and nanotechnology.

**Competitive Landscape:**

* Applied Materials:\*\* While not solely focused on ALD for nanomaterials, Applied Materials is a major player in the thin film deposition equipment market, including ALD systems used in semiconductor manufacturing. Forge Nano differentiates itself by focusing on ALD applications for specific materials and industries, providing tailored solutions and expertise.
* Beneq:\*\* Beneq specializes in ALD equipment and services for various applications, including industrial coatings and functional materials. Forge Nano's differentiator is their specific focus on ALD for battery materials and advanced nanomaterials within the defense and aerospace sectors.

**Sources:**

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

2. [https://www.crunchbase.com/organization/forge-nano](https://www.crunchbase.com/organization/forge-nano)

3. [https://www.businesswire.com/portal/site/home/news/](https://www.businesswire.com/portal/site/home/news/) (Used to search for Forge Nano press releases and news articles).

4. https://www.defenseadvancement.com/2023/03/23/forge-nano-to-advance-battery-material-for-us-army/