# Dossier: Directed Vapor Technologies International, Inc.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,930,566.58

**Award Date:** 2024-08-07

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

Directed Vapor Technologies International, Inc. (DVTI) focuses on developing and manufacturing advanced surface enhancement solutions using a proprietary cold spray technology. The company's primary business is providing metal coatings and surface treatments to improve the performance and lifespan of critical components in the aerospace, defense, and industrial sectors. DVTI's core mission is to deliver cost-effective, environmentally friendly alternatives to traditional surface finishing methods like electroplating and thermal spray. They aim to solve problems related to corrosion, wear, and fatigue in high-performance materials, particularly for parts susceptible to harsh operating environments. DVTI's unique value proposition lies in its ability to deposit a wide range of metals and alloys with superior density, bond strength, and minimal heat input, preserving the base material's properties while significantly enhancing surface characteristics. This technology offers potential advantages in terms of reduced material waste, improved component durability, and enhanced performance compared to competing technologies.

**Technology Focus:**

* Kinetic Metallization® (KM):\*\* DVTI's proprietary cold spray technology. This process utilizes high-velocity gas to propel solid metallic particles towards a substrate, causing them to deform and bond mechanically, creating a dense, metallurgical bond without melting. Particle velocities range from 300-1200 m/s.
* Process Control & Automation:\*\* The company emphasizes sophisticated process control and automation to ensure consistent coating quality and repeatability. They offer tailored solutions by meticulously monitoring and optimizing all parameters, including gas flow, temperature, and nozzle traverse speed.

**Recent Developments & Traction:**

* DoD Contracts (Ongoing):\*\* DVTI actively pursues and obtains government contracts. It is difficult to quantify due to privacy and timing restrictions, but their website contains case studies and references multiple unnamed DoD contracts throughout the past few years.
* Materials Science Expansion:\*\* Ongoing research and development to expand the range of materials that can be deposited using KM, including high-strength aluminum alloys, titanium alloys, and advanced composites, addressing the demands of advanced manufacturing techniques such as additive manufacturing.
* Strategic Partnerships:\*\* Reported partnerships for specific applications such as coating for additively manufactured parts in aerospace and defense applications to enhance surface finishing and provide corrosion resistance. Details often remain confidential.

**Leadership & Team:**

* CEO:\*\* Information not publicly available. The "About Us" section of their website emphasizes the technical expertise of the team, but lacks individual leader profiles.
* Technical Team:\*\* DVTI's team consists of materials scientists, engineers, and manufacturing specialists with deep experience in cold spray technology, surface engineering, and process control.

**Competitive Landscape:**

* Praxair Surface Technologies (Linde):\*\* A major player in thermal spray and other surface coating technologies. DVTI differentiates itself by offering a cold spray alternative with lower heat input and potentially superior material properties for certain applications.
* ASB Industries:\*\* Another provider of thermal spray and specialized coating solutions. DVTI's cold spray technology could offer a competitive advantage for temperature-sensitive components and applications requiring high coating density.

**Sources:**

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

2. [https://www.researchgate.net/publication/355203283\_Cold\_Spray\_for\_Additive\_Manufacturing](https://www.researchgate.net/publication/355203283\_Cold\_Spray\_for\_Additive\_Manufacturing)

3. [https://www.metalfinishings.com/directory/listing/dvti](https://www.metalfinishings.com/directory/listing/dvti)

4. [https://www.thomasnet.com/profile/20049282/directed-vapor-technologies-international-inc](https://www.thomasnet.com/profile/20049282/directed-vapor-technologies-international-inc)