# Dossier: BNNT LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,198,343.00

**Award Date:** 2024-10-28

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

BNNT LLC (Boron Nitride Nanotube LLC) is a materials science company focused on the development, manufacturing, and commercialization of high-quality boron nitride nanotubes (BNNTs). Their primary mission is to make BNNTs accessible and affordable for a wide range of advanced applications across defense, aerospace, energy, medicine, and other industries. They aim to solve the problem of limited availability and high cost that has historically hindered the widespread adoption of BNNTs. BNNT LLC's unique value proposition lies in their proprietary production methods that enable the scalable manufacturing of high-purity, structurally consistent BNNTs at a significantly lower cost than traditional methods. This enables them to provide these advanced materials in commercial quantities for various R&D and industrial uses.

**Technology Focus:**

* BNNTs: BNNT LLC produces single-wall and multi-wall Boron Nitride Nanotubes with diameters ranging from 2-100nm and lengths up to several microns. These BNNTs offer exceptional strength (estimated Young's Modulus of ~1.2 TPa), thermal conductivity (~180 W/mK), and chemical inertness.
* BNNT Composites & Applications: The company focuses on developing and providing solutions based on BNNTs including composites, coatings, and additives that improve material properties like thermal conductivity, radiation shielding, and mechanical strength.

**Recent Developments & Traction:**

* Partnership with the Air Force Research Laboratory (AFRL):\*\* Awarded contracts and collaborations to explore BNNT applications in advanced aerospace materials and defense technologies, with a focus on high-temperature composites and radiation shielding. (Ongoing)
* Expansion of Production Capacity:\*\* Significant investments were made to expand their production facilities to meet increasing demand, signaling growth and market adoption. (Reported throughout 2022-2023 in various industry news sources)
* Product Line Extension:\*\* Expanded their product line to include more specialized BNNT dispersions and coatings tailored for specific applications.

**Leadership & Team:**

* Bart Lipkin (President):\*\* Extensive background in managing high-tech companies and bringing advanced materials to market.

**Competitive Landscape:**

* NASA's Glenn Research Center (Historically a competitor in small batch high quality BNNT production):\*\* BNNT LLC's key differentiator is their focus on scalable, cost-effective manufacturing, enabling commercialization beyond research labs. This is especially true as NASA Glenn's research focused work continues to evolve as a public asset.
* International Nanotechnologies, Inc. (INT):\*\* While INT also produces BNNTs, BNNT LLC distinguishes itself with a deeper focus on defense and aerospace applications, evidenced by their strong partnerships with government entities.

**Sources:**

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

2. [https://www.researchgate.net/publication/365238604\_Thermal\_stability\_of\_single-wall\_boron\_nitride\_nanotubes\_doped\_with\_phosphorus](https://www.researchgate.net/publication/365238604\_Thermal\_stability\_of\_single-wall\_boron\_nitride\_nanotubes\_doped\_with\_phosphorus)

3. [https://www.sbir.gov/sbirsearch/detail/2049372](https://www.sbir.gov/sbirsearch/detail/2049372)