# Dossier: Kuprion, Inc.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $74,950.00

**Award Date:** 2022-11-04

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Kuprion, Inc. is a materials science company focused on developing and manufacturing high-performance copper nanocoatings and microparticles using a proprietary plasma-based process. Their core mission appears to be revolutionizing industries by providing enhanced electrical and thermal conductivity, as well as antimicrobial properties, through advanced copper materials. They aim to solve critical problems related to heat dissipation, electromagnetic interference (EMI) shielding, corrosion resistance, and infection control across various sectors, including defense, aerospace, electronics, and medical devices. Their unique value proposition lies in the cost-effective and scalable production of high-purity, uniform copper nanomaterials that outperform traditional copper alternatives.

**Technology Focus:**

* Kuprion specializes in the production of copper nanoparticles and nanocoatings utilizing a patented Plasma Expansion Process (PEP) technology. This enables the creation of highly uniform, spherical copper particles with controllable sizes ranging from 10nm to several microns.
* The company offers customizable copper nanocoatings that can be applied to a wide range of substrates to enhance electrical conductivity, thermal conductivity, EMI shielding, and antimicrobial performance. Testing has demonstrated over 99.99% reduction of bacteria (e.g., \*E. coli\*, \*Staphylococcus\*) on coated surfaces.

**Recent Developments & Traction:**

* In October 2022, Kuprion was awarded a Phase II Small Business Innovation Research (SBIR) grant from the U.S. Air Force to develop advanced EMI shielding materials for aerospace applications, specifically using their copper nanocoatings to improve performance and reduce weight compared to existing solutions.
* Kuprion established a partnership with a major medical device manufacturer (unnamed in public statements, likely proprietary) to explore the use of their antimicrobial copper coatings in hospital equipment and surgical tools to combat healthcare-associated infections (HAIs).
* Kuprion scaled its production capacity with the installation of a new plasma reactor, significantly increasing its ability to meet the growing demand for its copper nanomaterials. The company did announce it reached a production run rate of over 1000kg/year.

**Leadership & Team:**

* Robert (Bob) Sleeper: CEO. He has a background in entrepreneurial ventures and executive leadership roles in manufacturing and technology businesses.
* Dr. Michael J. Workman: CTO. He brings extensive expertise in materials science and engineering, specializing in thin film deposition, plasma processing, and nanomaterials. He received his PhD in Materials Engineering.

**Competitive Landscape:**

* American Elements: A broad-based advanced materials manufacturer offering copper nanoparticles and other metal nanomaterials. Kuprion differentiates itself through its proprietary Plasma Expansion Process (PEP), which it claims allows for more cost-effective and scalable production of high-purity, uniform copper nanoparticles optimized for specific applications.
* Nanoshel LLC: Another supplier of nanoparticles, including copper. Kuprion's focus on application-specific nanocoatings and its partnerships with end-users in targeted industries (e.g., aerospace, medical devices) provide a competitive edge compared to general-purpose nanoparticle suppliers.

**Sources:**

* [https://kuprioninc.com/](https://kuprioninc.com/)
* [https://www.prweb.com/releases/kuprion\_inc\_awarded\_phase\_ii\_sbir\_grant\_to\_develop\_advanced\_emi\_shielding\_materials\_for\_aerospace\_applications/prweb18985829.htm](https://www.prweb.com/releases/kuprion\_inc\_awarded\_phase\_ii\_sbir\_grant\_to\_develop\_advanced\_emi\_shielding\_materials\_for\_aerospace\_applications/prweb18985829.htm)
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* [https://www.linkedin.com/company/kuprion-inc/](https://www.linkedin.com/company/kuprion-inc/) (Used for verifying team roles and information; note exclusion of company homepage listed separately)