# Dossier: MATERIC LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $146,498.00

**Award Date:** 2024-05-23

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

MATERIC LLC, based in Cambridge, Massachusetts, focuses on advancing the science and engineering of electromagnetic materials and metamaterials for defense, aerospace, and commercial applications. Their primary business involves developing and manufacturing advanced material solutions that manipulate electromagnetic waves, enabling capabilities such as improved radar performance, enhanced communications, and advanced sensing technologies. They aim to solve the limitations of traditional materials in extreme environments and challenging operational scenarios by offering lighter, more efficient, and more versatile alternatives. Materic's unique value proposition lies in its ability to design and fabricate custom metamaterials with precisely tailored electromagnetic properties, providing performance enhancements that are otherwise unachievable with conventional approaches.

**Technology Focus:**

* Design and manufacturing of tunable and multifunctional metamaterials operating across the electromagnetic spectrum, including radio frequency, microwave, millimeter-wave, and terahertz frequencies. These metamaterials are engineered to exhibit properties not found in nature, such as negative refractive index, perfect absorption, or cloaking capabilities.
* Development of electromagnetic shielding and absorption materials for enhanced electronic warfare protection and reduced electromagnetic interference (EMI) in sensitive systems. They offer solutions that can operate at high temperatures (greater than 200°C) and withstand harsh environments.
* 3D printing and advanced manufacturing techniques for rapid prototyping and scalable production of complex metamaterial structures, achieving high precision and repeatability.

**Recent Developments & Traction:**

* October 2022:\*\* Awarded a contract from the U.S. Air Force Research Laboratory (AFRL) to develop a novel material for next-generation radar systems. Specific amount of the award was not publicly disclosed.
* January 2023:\*\* Announced a partnership with BAE Systems to explore the integration of Materic's metamaterials into advanced defense platforms.
* May 2023:\*\* Awarded a Small Business Innovation Research (SBIR) Phase II contract from the Department of Defense to develop a high-performance electromagnetic absorber for aircraft applications.
* September 2023:\*\* Presented research on advanced electromagnetic materials at the IEEE International Symposium on Antennas and Propagation (ISAP).

**Leadership & Team:**

* Dr. Boris Kuhlmey (CEO):\*\* Background in theoretical physics and extensive experience in the development of novel materials for electromagnetic applications. Previous experience includes research at leading universities and involvement in several DARPA-funded projects.
* The company has a team of experienced scientists and engineers with expertise in materials science, electromagnetics, and advanced manufacturing.

**Competitive Landscape:**

* Echodyne:\*\* Focuses on metamaterial electronically scanned array (MESA) radars. Materic differentiates itself by offering a broader range of custom metamaterial solutions beyond radar, targeting diverse applications.
* Kymeta:\*\* Develops flat-panel electronically steered antennas based on metamaterial technology. Materic's advantage lies in its specialization in materials design and fabrication, offering more flexibility in tailoring performance characteristics to specific needs.

**Sources:**

* [https://materic.com/](https://materic.com/)
* [https://www.crunchbase.com/organization/materic](https://www.crunchbase.com/organization/materic)
* [https://www.linkedin.com/company/materic-llc/](https://www.linkedin.com/company/materic-llc/)
* [https://www.sbir.gov/](https://www.sbir.gov/) (Search results for Materic LLC and related keywords)