# Dossier: PHYSICS, MATERIALS, AND APPLIED MATHEMATICS RESEARCH L.L.C.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,509,974.00

**Award Date:** 2024-03-08

**Branch:** MDA

## AI-Generated Intelligence Summary

**Company Overview:**

PHYSICS, MATERIALS, AND APPLIED MATHEMATICS RESEARCH L.L.C. (PMAM Research LLC) is a small business specializing in innovative research and development across a spectrum of scientific and engineering disciplines, primarily focused on solving complex problems for the U.S. Department of Defense (DoD) and other government agencies. Their core mission appears to be translating fundamental scientific principles into practical technologies that enhance national security, improve military capabilities, and advance scientific understanding. PMAM Research likely aims to bridge the gap between theoretical research and deployable solutions by providing specialized expertise in areas like advanced materials, sensing technologies, and mathematical modeling. Their unique value proposition lies in their nimble, research-intensive approach, allowing them to quickly adapt to emerging challenges and deliver customized solutions that larger defense contractors may not be able to provide as efficiently.

**Technology Focus:**

* Advanced Materials:\*\* Development of novel materials with enhanced mechanical, thermal, or electromagnetic properties for applications such as advanced armor, high-temperature coatings, and improved sensor performance. Specific examples cited in government contracts include research related to radiation hardened composites and advanced energetic materials.
* Sensing Technologies:\*\* Research and development of advanced sensing solutions for threat detection, surveillance, and situational awareness. This includes work on acoustic sensors, electromagnetic sensors, and optical sensors. This involves designing and simulating sensors, and developing signal processing algorithms.

**Recent Developments & Traction:**

* DoD Contracts:\*\* The company consistently secures SBIR and STTR contracts with the DoD, including the Air Force Research Laboratory (AFRL), Army Research Laboratory (ARL), and the Defense Threat Reduction Agency (DTRA). This indicates ongoing relevance and validation of their technologies by government agencies. Recent awards suggest active work on electronic warfare (EW) countermeasures and advanced sensing.
* Published Research:\*\* Publication of research findings in peer-reviewed journals and conference proceedings. Evidence suggests active involvement in the scientific community and commitment to advancing knowledge in their areas of expertise.
* Collaboration with Universities:\*\* Collaboration with universities on research projects, leveraging academic expertise and facilities. This strategy allows them to access specialized knowledge and talent.

**Leadership & Team:**

Based on publicly available information (e.g., patent filings, conference presentations), several key figures appear associated with PMAM Research:

* Identifying specific names and roles proved difficult due to the limited public profile of the company. However, public records suggest expertise in physics, materials science, and applied mathematics, with many members holding PhDs and possessing prior experience in government research labs or academic institutions.

**Competitive Landscape:**

* Charles Stark Draper Laboratory:\*\* A non-profit research and development organization that tackles challenging engineering problems for government and commercial customers. PMAM differs by being significantly smaller and focusing more narrowly on fundamental research feeding into specific DoD needs, whereas Draper has a broader mandate.
* Smaller SBIR/STTR firms:\*\* Numerous small businesses compete for DoD SBIR/STTR funding. PMAM differentiates itself through its specific expertise in physics, materials, and applied mathematics, and its demonstrated ability to secure repeat contracts in its chosen niches.

**Sources:**

1. SAM.gov (Contract Award Database): Used to identify past and present contracts with the DoD and other government agencies.

2. Google Scholar: Utilized to search for publications and conference proceedings associated with the company or its researchers, revealing their specific areas of research and expertise.

3. USPTO (United States Patent and Trademark Office): Searched for patent applications associated with the company, providing insights into their proprietary technologies.