# Dossier: EPIR, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $999,733.00

**Award Date:** 2024-07-22

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

EPIR Technologies, Inc. is a leading US-based materials science company focused on the design, development, and manufacture of advanced infrared (IR) detector materials and devices. Their core mission is to deliver high-performance, cost-effective IR sensing solutions that enable superior imaging and detection capabilities for a wide range of applications, including defense, security, industrial, and medical sectors. EPIR addresses the limitations of traditional IR technologies by offering advanced materials, particularly HgCdTe (Mercury Cadmium Telluride), with improved performance characteristics, higher operating temperatures, and lower manufacturing costs. Their unique value proposition lies in their proprietary materials synthesis and device fabrication processes, enabling the production of high-quality, low-noise IR detectors tailored to specific application needs, pushing the boundaries of IR sensing performance and making advanced IR technology more accessible.

**Technology Focus:**

* HgCdTe (Mercury Cadmium Telluride) epitaxial growth and detector fabrication: Specializing in Molecular Beam Epitaxy (MBE) for precise control of material composition and layer thickness. They offer optimized HgCdTe on various substrates, enabling advanced IR performance at reduced cost.
* IR Detector Arrays and Integrated Devices: EPIR develops complete IR detector arrays, including ROIC (Readout Integrated Circuit) integration, offering custom designs with varying pixel sizes, resolutions, and spectral response ranges tailored to specific customer requirements. This extends beyond single element detectors.

**Recent Developments & Traction:**

* October 2023:\*\* Received a Small Business Innovation Research (SBIR) Phase II award from the U.S. Air Force Research Laboratory (AFRL) to develop high-operating temperature mid-wave infrared (MWIR) detectors for missile warning systems.
* July 2022:\*\* Received a Phase II SBIR from the US Army to develop large format, high resolution, low dark current HgCdTe detector arrays.
* March 2021:\*\* Announced successful demonstration of high-performance HgCdTe IR detectors operating at significantly reduced cooling requirements, promising lower SWaP (Size, Weight, and Power) for defense applications.

**Leadership & Team:**

* Dr. Siva Sivananthan (CEO): Possesses extensive experience in HgCdTe materials science and device development, with a long track record of academic research and technology commercialization in the IR sensing field. He is the founder of EPIR and a Professor at the University of Illinois at Chicago.

**Competitive Landscape:**

* Teledyne FLIR: A major player in the IR sensor and camera market, offering a broad range of IR imaging solutions. EPIR differentiates itself through its focus on specialized, high-performance HgCdTe materials tailored for niche applications, particularly in defense and security, often with superior performance for specific wavelengths.
* Leonardo DRS: Another leading defense contractor providing IR sensors. EPIR differentiates itself with its materials focus and potential for lower manufacturing costs through innovative growth techniques, allowing for more accessible high-performance IR technology.

**Sources:**

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

2. [https://www.sbir.gov/sbirsearch/detail/2212755](https://www.sbir.gov/sbirsearch/detail/2212755)

3. [https://www.sbir.gov/sbirsearch/detail/2110102](https://www.sbir.gov/sbirsearch/detail/2110102)