# Dossier: PRINCETON INFRARED TECHNOLOGIES INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $179,986.43

**Award Date:** 2024-07-19

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Princeton Infrared Technologies, Inc. (PIRT) specializes in the design, development, and manufacturing of high-performance infrared (IR) imaging sensors and cameras. Their primary business revolves around providing advanced shortwave infrared (SWIR), midwave infrared (MWIR), and extended-wavelength infrared (eSWIR) detectors and camera systems. Their core mission is to enable superior imaging capabilities in various applications, including defense, security, industrial inspection, scientific research, and medical imaging. PIRT aims to solve problems associated with low-light imaging, imaging through obscurants, and detecting spectral signatures that are invisible to the human eye. Their unique value proposition lies in their ability to offer high-resolution, high-sensitivity InGaAs detectors and cameras at competitive prices, combined with custom design capabilities to meet specific customer requirements.

**Technology Focus:**

* InGaAs-based Focal Plane Arrays (FPAs) and detectors operating in the SWIR (0.9-1.7 μm), MWIR (1-5 μm) and eSWIR (0.4-2.5 μm) spectral bands. They provide high quantum efficiency and low dark current for enhanced imaging performance. Resolutions range from QVGA to megapixel formats.
* SWIR, MWIR, and eSWIR cameras incorporating their own InGaAs FPAs, offering a range of features such as high frame rates (up to hundreds of frames per second), advanced image processing algorithms, and various lens options. These cameras cater to diverse applications.

**Recent Developments & Traction:**

* In February 2023, Princeton Infrared Technologies announced a new 1280 x 1024 (1MP) eSWIR detector for high-performance imaging applications, demonstrating increased resolution and sensitivity in the extended wavelength range.
* In June 2022, PIRT secured a Phase II Small Business Innovation Research (SBIR) grant from the U.S. Department of Energy to develop high-performance MWIR camera systems for advanced monitoring of methane leaks in the oil and gas industry.
* Ongoing collaborations with various defense contractors and research institutions for the development of advanced imaging systems for military and surveillance applications. Specific details of these partnerships are often confidential.

**Leadership & Team:**

* Martin H. Ettenberg, PhD, President: Extensive experience in optoelectronic materials and devices, including prior roles at David Sarnoff Research Center (now part of SRI International).
* Key personnel include experts in infrared detector design, fabrication, and testing, with backgrounds in physics, electrical engineering, and materials science.

**Competitive Landscape:**

* Teledyne FLIR: A major player in the thermal imaging market, offering a broader range of IR detectors and cameras. PIRT's differentiator is its specific focus on high-performance InGaAs-based solutions and custom design capabilities, allowing it to cater to niche applications.
* SCD (Semi Conductor Devices): An Israeli company that develops and manufactures a wide range of cooled and uncooled infrared detectors and laser diodes. Princeton Infrared Technologies differentiates itself through its advanced eSWIR technology and targeted US-based manufacturing.

**Sources:**

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

2. [https://www.laserfocusworld.com/detectors-imaging/cameras/article/14286768/princeton-infrared-technologies-pirt-announces-new-1280-x-1024-1mp-eswir-detector](https://www.laserfocusworld.com/detectors-imaging/cameras/article/14286768/princeton-infrared-technologies-pirt-announces-new-1280-x-1024-1mp-eswir-detector)

3. [https://www.sbir.gov/sbirsearch/detail/2119187](https://www.sbir.gov/sbirsearch/detail/2119187)

4. [https://www.photonicsonline.com/company/princeton-infrared-technologies-inc](https://www.photonicsonline.com/company/princeton-infrared-technologies-inc)