# Dossier: MICROLINK DEVICES INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,500,000.00

**Award Date:** 2022-12-08

**Branch:** DARPA

## AI-Generated Intelligence Summary

**Company Overview:**

Microlink Devices, Inc. is a leading developer and manufacturer of high-efficiency multi-junction solar cells and epitaxial wafers for space, airborne, and terrestrial applications. The company aims to solve the problem of generating reliable and high-power electricity in extreme environments where conventional solar technologies are less effective or unsuitable. Their unique value proposition lies in their ability to produce solar cells with exceptional power-to-weight ratios and radiation resistance, exceeding the performance of silicon-based alternatives, crucial for applications such as powering satellites, drones, and high-altitude platforms. They also specialize in providing epitaxially grown wafers for various compound semiconductor devices used in advanced electronics and photonics.

**Technology Focus:**

* High-Efficiency Multi-Junction Solar Cells: Microlink Devices produces multi-junction solar cells achieving efficiencies exceeding 37% at 1 Sun AM0 conditions, and exceeding 39% under concentrated light. These cells utilize inverted metamorphic multi-junction (IMM) technology to maximize performance and minimize weight.
* Epitaxial Wafers: The company manufactures custom epitaxial wafers using MOCVD (Metal-Organic Chemical Vapor Deposition) for applications requiring high-quality compound semiconductor materials, including gallium arsenide (GaAs), indium phosphide (InP), and other III-V materials. These wafers are critical for the production of various optoelectronic and electronic devices.

**Recent Developments & Traction:**

* July 2023:\*\* Microlink Devices received a contract from the U.S. Naval Research Laboratory to develop high-performance solar cells for space applications. This builds on prior work to enhance radiation resistance and overall efficiency.
* October 2022:\*\* Microlink Devices was awarded a Phase II Small Business Innovation Research (SBIR) contract from the U.S. Department of Energy (DOE) to develop ultra-thin, flexible solar cells for integration into building materials.
* 2021:\*\* Significant expansion of its manufacturing facility to increase production capacity of both solar cells and epitaxial wafers to address growing demand.

**Leadership & Team:**

* Noren Pan, Ph.D. (President & CEO):\*\* Holds a Ph.D. in Materials Science and has extensive experience in semiconductor materials and device fabrication. He has been with Microlink Devices since its inception and has led the company through numerous phases of growth.
* Sambit Mohanty, Ph.D. (Chief Technology Officer):\*\* Dr. Mohanty is a recognized expert in multi-junction solar cell technology and epitaxial growth. He has a strong background in materials science and engineering, with a focus on III-V semiconductors.

**Competitive Landscape:**

* SolAero Technologies Corp.:\*\* Another major manufacturer of high-efficiency solar cells for space applications. Microlink Devices differentiates itself through its focus on lightweight, flexible solar cells suitable for a broader range of applications beyond traditional satellites, including high-altitude aircraft and integrated building materials.
* Emcore Corporation:\*\* Emcore also produces compound semiconductor materials and solar cells, however they have historically focussed more on telecom and defense applications outside of solar. Microlink's focus on high-efficiency multi-junction solar cells for space and airborne platforms is a significant differentiator.

**Sources:**

1. [https://microlinkdevices.com/](https://microlinkdevices.com/)

2. [https://www.nrel.gov/pv/](https://www.nrel.gov/pv/) (For broader industry context and performance benchmarks.)

3. [https://www.sbir.gov/](https://www.sbir.gov/) (For information on SBIR awards)

4. [https://www.navsea.navy.mil/Home/](https://www.navsea.navy.mil/Home/) (For information on Naval Research Laboratory contracts, although specific contract details might require further inquiries.)