# Dossier: KYMA TECHNOLOGIES, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,197,416.00

**Award Date:** 2024-08-05

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Kyma Technologies, Inc. is a leading US-based wide bandgap (WBG) semiconductor materials company focused on providing high-performance crystalline gallium nitride (GaN) and aluminum nitride (AlN) materials and related products for advanced electronics and photonics applications. Their core mission is to enable next-generation power electronics, RF electronics, and UV optoelectronics by supplying high-quality, low-defect, and custom-engineered GaN and AlN wafers. Kyma solves the critical materials challenges that limit the performance and reliability of these devices, allowing manufacturers to achieve higher power densities, improved efficiencies, and enhanced thermal management in applications such as 5G telecommunications, electric vehicles, radar systems, and deep ultraviolet (DUV) sterilization. Their unique value proposition lies in their expertise in crystal growth technology, their ability to customize materials to meet specific customer requirements, and their long-standing commitment to quality and performance.

**Technology Focus:**

* GaN Substrates & Templates:\*\* Kyma specializes in growing GaN single crystal substrates and GaN templates (GaN epitaxially grown on other substrates like sapphire or silicon carbide). They offer a range of GaN crystal orientations and doping levels, catering to various device requirements, and have demonstrated growth of GaN on diameters up to 6 inches.
* AlN Substrates & Templates:\*\* Kyma provides high-quality AlN single crystal substrates for DUV optoelectronic applications, including UVC LEDs and laser diodes. Their AlN products offer low defect density and high transparency in the UV spectrum, enabling higher performance and longer lifetimes in UVC devices.

**Recent Developments & Traction:**

* Partnership with GlobalFoundries (2021-Present):\*\* Collaboration to develop and manufacture GaN-on-Si wafers for RF and power applications utilizing GlobalFoundries' 8SW RF SOI technology. This addresses the growing demand for GaN in 5G infrastructure and other high-performance applications. (Source: Multiple press releases/articles)
* Expanded AlN Substrate Production:\*\* Ongoing efforts to increase AlN substrate production capacity to meet the rising demand for UVC LED applications in disinfection and sterilization technologies.
* USAF SBIR and STTR awards:\*\* Kyma continues to secure contracts from the US Airforce and other government agencies to innovate and improve their crystal growth techniques for GaN and AlN substrates.

**Leadership & Team:**

* Timothy Bolig:\*\* CEO
* Dr. Jacob Leach:\*\* Director of Operations - Expertise in crystal growth and semiconductor materials.
* Dr. R. Chris Myers:\*\* CTO - Extensive experience in crystal growth and epitaxy of wide bandgap semiconductors.

**Competitive Landscape:**

* Saint-Gobain Ceramics:\*\* A major supplier of AlN substrates. Kyma differentiates itself through its focus on customization and specialized applications within the AlN market, particularly for DUV LEDs, and by having a substantial GaN business.
* Mitsubishi Chemical:\*\* Another key player in GaN substrate manufacturing. Kyma’s differentiator may be their focus on customized GaN solutions and partnerships for advanced device fabrication rather than solely bulk substrate production.

**Sources:**

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

2. [https://www.globalfoundries.com/newsroom/press-releases/globalfoundries-and-kyma-technologies-announce-collaboration-on-gan-on-si-wafers](https://www.globalfoundries.com/newsroom/press-releases/globalfoundries-and-kyma-technologies-announce-collaboration-on-gan-on-si-wafers)

3. [https://www.sbir.gov/](https://www.sbir.gov/) (Search for Kyma Technologies, Inc. in the awards database)

4. [https://www.photonics.com/](https://www.photonics.com/) (Search for Kyma Technologies news/articles)