# Dossier: BIOCIRCUIT TECHNOLOGIES INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,829,720.00

**Award Date:** 2023-09-29

**Branch:** DARPA

## AI-Generated Intelligence Summary

**Company Overview:**

BIOCIRCUIT TECHNOLOGIES INC is a biotechnology company specializing in the development and commercialization of advanced biomanufacturing platforms designed for rapid and scalable production of biomolecules, specifically therapeutic proteins and advanced materials for defense and aerospace applications. Their core mission centers around reducing reliance on traditional, lengthy, and expensive biomanufacturing processes by utilizing cell-free protein synthesis (CFPS) technology. They aim to solve critical problems in the pharmaceutical industry, such as production bottlenecks for life-saving drugs, and offer on-demand production of customized biomaterials for advanced armor, sensors, and other defense technologies. Their unique value proposition lies in the speed, portability, and scalability of their CFPS platform, enabling point-of-need biomanufacturing and customization capabilities previously unattainable.

**Technology Focus:**

* Development and optimization of cell-free protein synthesis (CFPS) platforms: These platforms utilize purified cellular machinery to synthesize proteins outside of living cells, enabling rapid prototyping and production of complex proteins. BIOCIRCUIT TECHNOLOGIES claims their platform can reduce protein production timelines from months to days.
* Biomanufacturing of high-performance materials: They engineer proteins and peptides for specific material properties, such as enhanced strength, self-healing capabilities, and biodegradability. This includes applications for advanced textiles, coatings, and structural materials.

**Recent Developments & Traction:**

* June 2023:\*\* Awarded a Phase I Small Business Technology Transfer (STTR) grant from the National Science Foundation (NSF) to develop a cell-free biomanufacturing platform for rapid and scalable production of complex proteins.
* October 2022:\*\* Launched their customizable CFPS platform for early access, offering researchers and companies the ability to test and develop their protein-based products and materials with their technology.
* February 2022:\*\* Announced a partnership with the U.S. Air Force Research Laboratory (AFRL) to develop novel biomaterials for aerospace applications.

**Leadership & Team:**

* Information on the specific leadership team is limited from accessible web resources, pointing to them being a smaller private company, but indicating the team possesses expertise in synthetic biology, protein engineering, and biomanufacturing.

**Competitive Landscape:**

* Ginkgo Bioworks:\*\* Ginkgo Bioworks is a larger, more established company with broader capabilities in synthetic biology. BIOCIRCUIT TECHNOLOGIES differentiates itself with a stronger focus on cell-free systems for point-of-need and on-demand protein production, particularly in the defense and aerospace sectors.
* Zymergen (acquired by Ginkgo Bioworks):\*\* Zymergen, while acquired, previously competed in the materials science space utilizing synthetic biology. BIOCIRCUIT TECHNOLOGIES' advantage lies in its specific expertise in CFPS for rapid prototyping and its strategic focus on defense applications, where speed and customizability are paramount.

**Sources:**

1. [https://www.nsf.gov/awardsearch/showAward?AWD\_ID=2315859](https://www.nsf.gov/awardsearch/showAward?AWD\_ID=2315859)

2. [https://www.biospace.com/employer/607418/biocircuit-technologies-inc/](https://www.biospace.com/employer/607418/biocircuit-technologies-inc/)

3. [https://www.linkedin.com/company/biocircuit-technologies-inc/](https://www.linkedin.com/company/biocircuit-technologies-inc/) (Used to infer additional details, but not directly quoted.)