# Dossier: ARBOR BATTERIES, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,799,995.32

**Award Date:** 2024-09-04

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

Arbor Batteries, Inc. is a developer and manufacturer of next-generation solid-state lithium metal batteries, aiming to revolutionize energy storage for both defense and commercial applications. Their primary business is to create batteries with significantly higher energy density, improved safety, and longer lifespans compared to traditional lithium-ion batteries. Arbor's core mission is to deliver a battery technology that addresses the limitations of existing solutions, specifically for demanding applications where performance, reliability, and safety are paramount, such as unmanned aerial vehicles (UAVs), electric vehicles, and portable power systems. Their unique value proposition lies in their proprietary solid-state electrolyte technology, which enables the use of a lithium metal anode, unlocking substantially higher energy density without the safety risks associated with liquid electrolytes.

**Technology Focus:**

* Solid-State Lithium Metal Batteries: Arbor Batteries utilizes a novel solid electrolyte material, enabling the use of a lithium metal anode. This architecture results in significantly higher energy density batteries, reportedly exceeding 500 Wh/kg and volumetric energy densities of 1000 Wh/L in prototype cells.
* Safety Enhancements: The solid-state design eliminates the flammable liquid electrolytes used in conventional lithium-ion batteries, drastically reducing the risk of thermal runaway and fires. They claim to have passed rigorous safety tests, including nail penetration and crush tests.

**Recent Developments & Traction:**

* Partnership with US Army: In 2023, Arbor Batteries announced a partnership with the U.S. Army to develop and test its solid-state batteries for military applications. This includes evaluations for enhanced soldier power, unmanned systems, and electric vehicles.
* Series A Funding: In late 2022, Arbor Batteries closed a Series A funding round of $35 Million led by Material Impact, with participation from Toyota Ventures, Volta Energy Technologies, and others. This funding will be used to scale up manufacturing and accelerate product development.
* Strategic partnership with a major U.S. battery manufacturer: The exact identity has not been publicly released, but an alliance to accelerate the commercial production of Arbor’s solid-state lithium metal batteries was mentioned in a recent press release.

**Leadership & Team:**

* Zhengyuan Tu, CEO: Tu has an extensive background in battery technology, including prior experience in developing advanced battery materials.
* John Cook, CTO: Prior to co-founding Arbor, Cook was the Director of R&D at Ascend Elements, a leading lithium-ion battery recycling and materials company.

**Competitive Landscape:**

* Solid Power: Another US-based company focused on solid-state battery technology, primarily targeting the electric vehicle market. Arbor differentiates itself by emphasizing high energy density and specific applications in defense, while Solid Power has primarily focused on automotive applications and a sulfide-based electrolyte.

**Sources:**

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

2. [https://www.materialimpact.com/news/arbor-batteries-raises-35m-series-a-round](https://www.materialimpact.com/news/arbor-batteries-raises-35m-series-a-round)

3. [https://www.energy.gov/sites/prod/files/2023-03/qtr-apr-2023-arbor-batteries.pdf](https://www.energy.gov/sites/prod/files/2023-03/qtr-apr-2023-arbor-batteries.pdf)