# Dossier: NATRION INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,236,881.00

**Award Date:** 2024-09-13

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Natrion, Inc. is a materials science company focused on developing and manufacturing advanced solid-state electrolyte (SSE) technology for next-generation batteries. Their primary business revolves around enabling safer, higher-performing, and longer-lasting batteries for electric vehicles, grid storage, and potentially aerospace applications, including defense. Their core mission is to overcome the limitations of conventional lithium-ion batteries by eliminating flammable liquid electrolytes and enabling the use of more energy-dense materials. Natrion's unique value proposition lies in its patented Lithium Solid Ionic Composite (LISIC™) technology, a solid-state electrolyte that offers a high ionic conductivity, wide operating temperature range (-60°C to 200°C), and non-flammability, promising safer and more robust battery solutions compared to incumbent technologies. They aim to solve the problems of limited energy density, safety risks associated with thermal runaway, and performance degradation over time that plague current lithium-ion battery technology.

**Technology Focus:**

* LISIC™ (Lithium Solid Ionic Composite):\*\* A patented solid-state electrolyte material composed of a polymer and inorganic ceramic composite. Offers a measured ionic conductivity of up to 1 mS/cm at room temperature, which is competitive with liquid electrolytes. The company claims it can be tailored to various battery chemistries, including lithium-sulfur and all-solid-state designs.
* Battery Cell Manufacturing:\*\* Natrion is developing and plans to manufacture solid-state battery cells using its LISIC™ electrolyte. This includes research and development into cell architecture, electrode optimization, and scaling up manufacturing processes. They are actively pursuing pilot production lines and are targeting commercialization of their solid-state battery technology.

**Recent Developments & Traction:**

* May 2023: Partnership with Raytheon:\*\* Natrion announced a Cooperative Research and Development Agreement (CRADA) with Raytheon Missiles & Defense to develop and test solid-state batteries for defense applications, specifically for extreme environments.
* November 2022: Seed Round Extension:\*\* Natrion extended their seed funding round, bringing the total seed capital raised to over $6 million. The funding aims to support the expansion of their research and development efforts, as well as their pilot manufacturing line.
* November 2021: SBIR Phase II Grant:\*\* Natrion received a Phase II Small Business Innovation Research (SBIR) grant from the National Science Foundation (NSF) to further develop their LISIC™ electrolyte technology.

**Leadership & Team:**

* Alex Kosyakov (Co-Founder & CEO):\*\* A chemical engineer with experience in materials science and battery technology.
* Thomas Rouffiac (Co-Founder & CTO):\*\* Holds a Ph.D. in Chemistry and expertise in solid-state battery materials.

**Competitive Landscape:**

* QuantumScape:\*\* Focused on solid-state lithium-metal batteries. Natrion differentiates itself by its LISIC™ technology and its partnerships focused on niche applications in defense and aerospace, rather than solely targeting the automotive market.
* Solid Power:\*\* Another company developing solid-state batteries, primarily targeting the automotive sector. Natrion's approach appears to emphasize materials flexibility and application diversification, including defense.

**Sources:**

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

2. [https://www.prnewswire.com/news-releases/natrion-enters-cooperative-research-and-development-agreement-with-raytheon-missiles--defense-301830355.html](https://www.prnewswire.com/news-releases/natrion-enters-cooperative-research-and-development-agreement-with-raytheon-missiles--defense-301830355.html)

3. [https://www.nsf.gov/awardsearch/showAward?AWD\_ID=2130873](https://www.nsf.gov/awardsearch/showAward?AWD\_ID=2130873)

4. [https://www.businesswire.com/news/home/20221101005535/en/Natrion-Raises-Additional-Capital-for-Solid-State-Battery-Separator](https://www.businesswire.com/news/home/20221101005535/en/Natrion-Raises-Additional-Capital-for-Solid-State-Battery-Separator)