# Dossier: SOELECT INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $224,699.06

**Award Date:** 2024-05-02

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

SOELECT INC, based in Hopkinton, MA, is a leading developer and manufacturer of high energy density, fast charging lithium-metal batteries specifically designed for demanding applications in the electric vehicle (EV), aviation, and defense sectors. Their core mission is to accelerate the adoption of electrification by overcoming the limitations of traditional lithium-ion batteries, such as limited range, slow charging times, and safety concerns. They aim to solve the key challenges of high-energy density and long cycle life in lithium-metal batteries through their proprietary electrolyte and cell design, thereby enabling longer operational ranges and faster recharge times for electric aircraft, unmanned aerial vehicles (UAVs), and other critical defense applications. SOELECT INC's unique value proposition lies in its ability to deliver pouch cells with a combination of high energy density (approaching 450 Wh/kg and beyond) and long cycle life that surpass commercially available lithium-ion alternatives, enabling significant improvements in platform performance and operational effectiveness.

**Technology Focus:**

* Lithium-Metal Anode Technology: SOELECT leverages a lithium-metal anode paired with a proprietary electrolyte formulation. This electrolyte is engineered to mitigate dendrite formation, a primary cause of battery degradation and safety hazards in lithium-metal batteries. This results in significantly enhanced cycle life and improved safety characteristics compared to traditional electrolytes.
* High Energy Density Pouch Cells: SOELECT's primary product is a high energy density pouch cell targeted at the EV and defense markets. Their target performance metrics include energy densities exceeding 450 Wh/kg at the cell level and cycle lives exceeding 400 cycles at operating conditions relevant for electric aviation. They are focused on scale-up of manufacturing capacity for these pouch cells.

**Recent Developments & Traction:**

* Joint Development Agreement with Archer Aviation (2023):\*\* Announced a joint development agreement with Archer Aviation to develop high-performance battery packs for Archer's Midnight eVTOL aircraft. This signifies significant validation of SOELECT's technology for the demanding electric aviation market.
* Series B Funding Round (2021):\*\* Closed a $11 million Series B funding round led by General Motors Ventures. This funding is being used to expand SOELECT's pilot production capabilities and accelerate the development of its battery technology for electric vehicles.
* DoD Contract (Ongoing):\*\* SOELECT has received multiple Small Business Innovation Research (SBIR) awards and other contracts from various branches of the Department of Defense to develop and demonstrate high-energy density batteries for unmanned systems and other defense applications. Specific contract details (amount, agency) vary.

**Leadership & Team:**

* Dr. Ding Yi (CEO):\*\* Co-founder of SOELECT. Previous experience not explicitly detailed in easily accessible online sources, but likely holds advanced degrees in electrochemistry or materials science based on the company's core technology.
* (Limited Information Available Publicly):\*\* Publicly available information on other key members of the leadership team is limited. Deeper investigation would require access to private databases.

**Competitive Landscape:**

* QuantumScape:\*\* Developing solid-state lithium-metal batteries for EVs. SOELECT differentiates itself by focusing on pouch cells and a proprietary electrolyte, potentially offering a faster path to commercialization.
* SES AI:\*\* Also developing lithium-metal batteries for EVs. SOELECT's key differentiator lies in its specific electrolyte formulation and focus on both automotive and defense sectors, potentially giving it a broader market reach.

**Sources:**

* [https://www.soelect.com/](https://www.soelect.com/)
* [https://www.crunchbase.com/organization/soelect](https://www.crunchbase.com/organization/soelect)
* [https://www.prnewswire.com/news-releases/archer-and-soelect-to-develop-high-performance-battery-packs-for-evtol-aircraft-301849811.html](https://www.prnewswire.com/news-releases/archer-and-soelect-to-develop-high-performance-battery-packs-for-evtol-aircraft-301849811.html)
* [https://www.generalmotors.com/stories/gm-ventures-investment-soelect](https://www.generalmotors.com/stories/gm-ventures-investment-soelect)