# Dossier: NIRON MAGNETICS INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $64,065.00

**Award Date:** 2024-05-21

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Niron Magnetics Inc. is a privately held company focused on developing and manufacturing high-performance permanent magnets using novel iron nitride materials. Their core mission is to displace rare-earth magnets, which are strategically vulnerable due to geopolitical supply chain constraints and environmental concerns associated with their mining and processing. Niron aims to provide a cost-effective, sustainable, and domestically produced alternative to rare-earth magnets, addressing critical needs in various sectors, including electric vehicles, wind turbines, industrial motors, and defense applications. Their value proposition lies in offering a magnet material that leverages abundant and readily available iron and nitrogen, coupled with a unique manufacturing process for scalable production.

**Technology Focus:**

* Iron Nitride Magnets: Developing and producing permanent magnets based on iron nitride (Fe16N2) with the potential to match or exceed the performance of some rare-earth magnets, particularly in high-temperature applications. Their magnets are intended for use in electric vehicles, wind power generation, and defense systems.
* Powder Metallurgy Manufacturing: Utilizing advanced powder metallurgy techniques to create high-density, precisely shaped magnets from their iron nitride powder, enabling scalability and cost-effectiveness in production. They claim their manufacturing process reduces environmental impact.

**Recent Developments & Traction:**

* October 2023, $21.3M Series A Extension:\*\* Raised a $21.3 million extension to their Series A funding round, led by Volta Energy Technologies, bringing the total Series A funding to $51.3 million. This investment is aimed at scaling production and accelerating commercialization of their iron nitride magnets.
* April 2022, $30 Million Series A:\*\* Closed a $30 million Series A funding round, led by Anzu Partners, to scale up production and advance the commercialization of their iron nitride magnet technology. The round included participation from strategic investors such as Volta Energy Technologies, as well as existing investors.
* DoE Grant (Multiple Awards):\*\* Niron has received multiple grants from the U.S. Department of Energy (DoE) to support the development and commercialization of their rare-earth-free permanent magnets. These grants highlight the strategic importance of their technology to the U.S. energy and manufacturing sectors.

**Leadership & Team:**

* Jonathan Rowntree (CEO):\*\* A serial entrepreneur with experience in energy technologies, including executive leadership roles at companies focused on renewable energy.
* Dr. Laura Van Wie (CTO):\*\* Possesses extensive expertise in materials science and engineering, particularly in the development and processing of magnetic materials. Her deep technical knowledge is crucial to Niron's technology roadmap.

**Competitive Landscape:**

* Rare Earth Magnet Manufacturers (e.g., Hitachi Metals):\*\* Niron's primary competition comes from established manufacturers of rare-earth magnets. Niron's key differentiator is its ability to produce high-performance magnets without relying on rare earth elements, mitigating supply chain risks and environmental concerns.
* Other Rare-Earth Alternative Developers (e.g., Texas Mineral Resources Corp):\*\* Other companies are exploring alternative magnet chemistries. Niron's key differentiator relies on the specific material science related to Fe16N2 and its production methods, which it asserts, allows for improved performance, scalability, and cost-effectiveness compared to competitors.

**Sources:**

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

2. [https://www.voltaenergytech.com/portfolio/niron-magnetics/](https://www.voltaenergytech.com/portfolio/niron-magnetics/)

3. [https://www.anzupartners.com/niron-magnetics-raises-30-million-series-a-to-commercialize-iron-nitride-magnets/](https://www.anzupartners.com/niron-magnetics-raises-30-million-series-a-to-commercialize-iron-nitride-magnets/)

4. [https://www.advancedmaterials.com/news/industry-news/niron-magnetics-closes-21-3-million-series-a-extension-led-by-volta-energy-technologies/](https://www.advancedmaterials.com/news/industry-news/niron-magnetics-closes-21-3-million-series-a-extension-led-by-volta-energy-technologies/)