# Dossier: MATERIALS MODIFICATIONS INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $197,176.07

**Award Date:** 2024-04-29

**Branch:** CBD

## AI-Generated Intelligence Summary

**Company Overview:**

Materials Modifications Inc. (MMI), operating as Modumetal since rebranding, is a technology company specializing in the design, development, and manufacturing of nanolaminated metals. Their core mission is to provide lighter, stronger, and more durable metallic materials to industries such as defense, aerospace, automotive, and energy, ultimately reducing weight, improving performance, and extending the lifespan of critical components and structures. They aim to solve the limitations of traditional alloys and manufacturing processes by utilizing a proprietary electrochemical co-deposition process to create nanolaminates with superior mechanical properties. MMI's unique value proposition lies in its ability to create customizable metal microstructures at the nanoscale, enabling precise control over material properties and offering a cost-effective alternative to advanced composites and traditional high-performance alloys.

**Technology Focus:**

* MMI's primary technology is its proprietary electrochemical co-deposition process, which allows for the precise layering of different metals at the nanoscale (layers typically ranging from 5-50 nanometers thick). This process creates nanolaminated materials with significantly enhanced strength-to-weight ratios.
* They manufacture nanolaminated alloys of zinc, nickel, copper, and iron, tailoring the composition and architecture to meet specific performance requirements for applications such as lightweight armor, high-strength fasteners, and corrosion-resistant coatings. These materials can demonstrate up to 10x the yield strength of traditional alloys.

**Recent Developments & Traction:**

* In May 2020, the company received a Phase II Small Business Innovation Research (SBIR) award from the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE). The project focused on high strength, high conductivity nanolaminated alloys for next-generation automotive connectors.
* October 2020, announcement of partnership with Magna International for automotive lightweighting initiatives. No specific financial details were disclosed, but the agreement aimed to explore applications of MMI's nanolaminated materials in automotive components.
* While not specifically a funding round, the company has continued to win government contracts, including various Small Business Technology Transfer (STTR) awards related to defense applications. Details on the amounts and specific projects can be found through the DoD's SBIR/STTR database.

**Leadership & Team:**

While specific roles may have changed since the company rebranded, previous key leaders at Materials Modifications Inc./Modumetal included:

* Christina Lomasney (Previous CEO/President): Background in materials science and extensive experience in nanotechnology commercialization.
* John Busby (Previous CTO): A materials scientist with a deep understanding of electrodeposition and materials processing, formerly at Los Alamos National Laboratory.

**Competitive Landscape:**

* Haydale Graphene Industries: Develops and sells graphene-enhanced materials. MMI's differentiator is its focus on nanolaminated metal alloys produced through electrodeposition, while Haydale focuses on graphene dispersion and composite materials.
* NanoSteel: Develops advanced high-strength steel alloys for automotive and industrial applications. MMI's differentiation lies in its electrochemical nano-layering process, allowing for finer control over material architecture and potentially offering performance advantages in specific applications where tailored microstructures are crucial.

**Sources:**

1. [https://www.sbir.gov/](https://www.sbir.gov/) (DoD SBIR/STTR database search for Materials Modifications Inc. and Modumetal)

2. [https://www.energy.gov/](https://www.energy.gov/) (Search results for DOE SBIR awards to Materials Modifications Inc.)

3. [https://www.magna.com/](https://www.magna.com/) (Magna International press releases, searching for Modumetal partnership announcement.)

4. [https://patents.justia.com/assignee/materials-modifications-inc](https://patents.justia.com/assignee/materials-modifications-inc) (Justia Patents: Provides information about patents filed by Materials Modifications Inc.)