# Dossier: REM Chemicals, Inc. d/b/a/ REM Surface Engineering

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,247,630.00

**Award Date:** 2023-09-05

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

REM Surface Engineering, operating as REM Chemicals, Inc., specializes in developing and applying isotropic superfinishing (ISF) technology to improve the performance, efficiency, and durability of metal components, primarily in mission-critical applications within the aerospace, defense, automotive, and energy sectors. Their core mission is to reduce friction, wear, and noise in mechanical systems, leading to increased power output, reduced fuel consumption, extended component life, and improved reliability. They offer a process for chemically accelerating the micro-smoothing of metal surfaces which eliminates directional lay lines, creating a non-directional isotropic surface. This isotropic surface greatly reduces stress concentrations and frictional losses. REM’s unique value proposition lies in its ability to provide a proven, commercially viable, and scalable solution for achieving ultra-smooth surface finishes that outperform traditional surface finishing methods, particularly in high-stress, high-wear environments.

**Technology Focus:**

* Isotropic Superfinishing (ISF) Process:\*\* A controlled chemical and mechanical process that simultaneously removes metal while polishing, producing a non-directional, micro-smooth surface finish. This process delivers a significant reduction in surface roughness (Ra values often reduced by 50-90%) and eliminates stress risers inherent in conventional machining processes.
* Proprietary Chemical Formulations:\*\* REM develops and manufactures its own proprietary chemical solutions used in the ISF process, tailored to various metal alloys and application requirements. They continually refine these formulations to optimize process speed, surface finish quality, and compatibility with different materials.

**Recent Developments & Traction:**

* Continued Aerospace Adoption:\*\* REM continues to gain traction in the aerospace sector, with increased adoption of their ISF process for critical engine and transmission components in both commercial and military aircraft. Specific details about new contracts are often confidential, but industry publications indicate growing acceptance.
* Expanded Service Capacity:\*\* REM has strategically expanded its service capacity at various global locations to meet increasing customer demand for ISF processing. The specific locations and expansion details are not readily available publicly.
* Continued R&D and Process Enhancement:\*\* REM continues to invest in Research and Development, focusing on new chemical formulations and optimizing the ISF process for new metal alloys and emerging applications, including advanced gear systems and other high-performance components.

**Leadership & Team:**

* David Wimmer (President):\*\* Holds a Chemical Engineering degree and has been with REM Surface Engineering for 20+ years, demonstrating deep understanding of the ISF technology and its applications.
* Information about the CTO or other key technical leaders is not readily available in public sources.

**Competitive Landscape:**

* Extrude Hone Corporation:\*\* A competitor that offers a range of surface finishing technologies, including abrasive flow machining. REM differentiates itself through its focus on a specifically chemical-mechanical process for isotropic superfinishing, delivering superior results in certain applications like gears and bearings where a non-directional surface finish is crucial.
* Various surface treatment companies:\*\* Many companies offer traditional surface finishing techniques (grinding, polishing, honing). REM's differentiator is its chemical polishing and its ability to create isotropic surface finishes which produce unique tribological properties for demanding applications.

**Sources:**

* [https://www.remchem.com/](https://www.remchem.com/)
* [https://www.thomasnet.com/profile/165539/rem-surface-engineering](https://www.thomasnet.com/profile/165539/rem-surface-engineering)
* [https://www.mfgnewsweb.com/rem-surface-engineering-and-atlas-technologies-combine-to-offer-manufacturing-solutions/](https://www.mfgnewsweb.com/rem-surface-engineering-and-atlas-technologies-combine-to-offer-manufacturing-solutions/)