LumiShield Technologies

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LumiShield in a Minute

- Materials and Process Company
- Creating Disruptive Change in the Anti-Corrosion Market
- By Displacing Hexavalent Chromium Plating (\$13 Billion / yr in U.S.)
- Through Improved Coating Performance, Reduced Environmental Impact, and Lower Cost
- Using a Proprietary Aluminum Electroplating Technology
- Seeking \$300k in Seed Funding for Process Optimization and Scale-up
The Problem with Hexavalent Chromium

Expensive!

Environmentally Harmful

Toxic

Unsafe

$13 B/yr

Market

Liability Risk

Lumi Shield
The Alternative

- Based on a non-toxic metal…
- Which eliminates ground and drinking water contamination…
- Has relatively minor issues with waste disposal…
- Can be conducted with greatly diminished risk to workers…
- Avoids the massive regulations of chromium plating…

- Makes coatings that are tougher and last longer…
- Uses less expensive materials at every stage of the process…
- **And will ultimately produce products which are much less expensive.**
The LumiShield Process

The Special Sauce

Aluminum Oxide
Aluminum
Carbon Steel
Target Market

**TAM**
- Chromium
- Cadmium
- Electroplated Aluminum
- $17 Billion

**SAM**
- Hard Chromium Coatings
- Cadmium Coatings
- $10 Billion

**Target Market**
- Small-scale Platers
- $4 Billion
The Plan

Seed Funding: $300k

Q1 2015

Seed Funding: $500k

Q2 2015

Series A: $2M

Q4 2015
Q1 2016

Series B: $4M

Q2 2016
Q3 2016
Q4 2016
Q1 2017
Q2 2017

Optimization and Scale-up

Q3 2015

Commercial-scale Design

Q4 2015

500 gal. Plater Construction

Economic Analysis

Q1 2016

Sales Begin

Shakedown

5 gal. Plater Construction

Q2 2016
Q3 2016
Q4 2016
Q1 2017
Q2 2017

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The Market Strategy

- Direct Sales of Plated Products from Commercial-scale Unit
  - Target: Regional Retailers and Distributors
  - Demonstrate Process and Get Products into the Market
- Direct Sales of Package Systems and Plating Solution
  - Target: Small Electroplating Businesses
  - Equipment Sold at Cost
  - Plating Solution Sold at Profit
  - One Year Payback Period for Customers
- Direct Sales of Plated Products from Industrial-scale Unit
  - Target: National Retailers and Distributors
  - Take Advantage of Significant Economies of Scale to Decrease Cost
- Licensing to Large Companies
  - Target: Large Players in Aerospace and Automotive Industry
The Team

Chief Executive Officer David Luebke Ph.D. – chemical engineer with 12 years experience, formerly managing a research budget of $6.5 million at the US Dept. of Energy.

Chief Innovation Officer Hunaid Nulwala Ph.D. – materials scientist with experience in leading researchers in the design of polymers and ionic liquids for specific applications.

Chief Operating Officer Brett Luebke M.B.A – seasoned manager with 14 years of experience in the energy sector.
The Takeaway

- Within two years, LumiShield will go to market with a disruptive coating technology that will replace chromium and cadmium plating.

- The combined value of the chromium and cadmium coating markets in the U.S. is $17 billion annually.

- LumiShield's process creates coatings which have superior performance, are less expensive to produce, and are more environmentally-friendly than the competitors.

- The company is seeking $300k in seed funding for process optimization and scale-up.