



# Battery Charger & Power Reduction Method

## US Patent: 7,573,235 B2

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### Market Study Deliverables

**Conduct an abbreviated market study assessment to:**

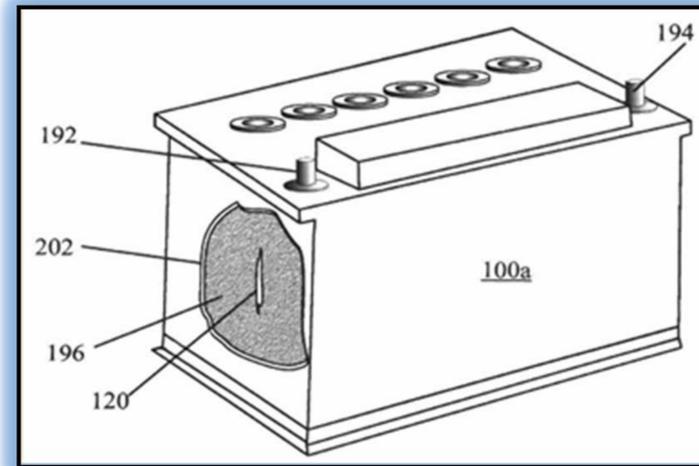
- Define the technology in common language as a priority for military and commercial applications.
- Create collateral material for industry outreach.
- Validate collateral material communication through primary and secondary research.

### Technology Synopsis

**A fast, effective simple system that can be automated for detecting leakage of electrolyte from lead-acid batteries with nonconductive cases.**

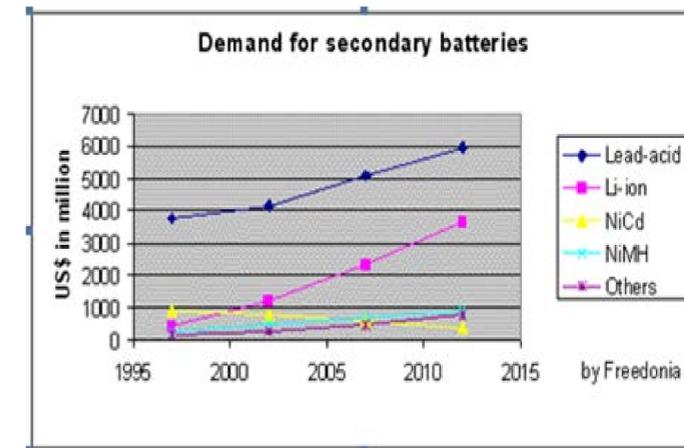
**Problem Solved:**

- Pollution of the immediate environment
- Corrosion to the battery and compartments
- Usage of unacceptable battery
- Decreases turnover of batteries



### Market Opportunity

The global market for lead-acid batteries is forecast to reach \$15.4 billion by the year 2015.



### Situational Summary

**Inventor Susan Waggoner of the NAVSEA Crane Lab**  
 Invented: Detect electrolyte leakage in lead-acid batteries.

- The technology is not currently used. Technology is in the patenting process.
- Prototype is unavailable.
- Applications for the technology are in the military and commercial industries.

### Potential Applications

Industry Segments	Applications	Uses	Size of market
A. *Military B. Commercial	1. Vehicular • Aircrafts • Automobiles • Marine • Tanks • Trucks 2. Fluid containment devices (tanks)	1. Detecting Electrolyte Leakage from Batteries with nonconductive cases 2. Eliminating poor performers out of critical applications 3. Preventing damage to battery compartments	\$33B Military Aircraft (2011) <sup>1</sup>

\*Primary Market Focus

- Source: [http://annualreport2009.gkn.com/Business\\_Review/Review\\_of\\_Performance/Aerospace\\_Performance/Default.aspx?id=86](http://annualreport2009.gkn.com/Business_Review/Review_of_Performance/Aerospace_Performance/Default.aspx?id=86)

### Competition

Company Name/Inventor	Product Name	Location	Features
NTT Facilities Inc.	VRLA battery remote management system	Tokyo, Japan	<ul style="list-style-type: none"> <li>Automatically measures voltage and ambient temperature of each cell</li> <li>Reports time for battery replacement</li> <li>Electrolyte leakage detection externally</li> </ul>
Lineage Power	Acid Spill Management System	Plano, Texas	<ul style="list-style-type: none"> <li>Eliminate corrosion damage</li> <li>Reduce the time required to effectively clean batteries</li> <li>Eliminate trickle self-discharge by making the case neutral and non-conductive.</li> <li>Detect leaks by color change when acids or acid salts are present.</li> </ul>
Sue Waggoner	Method and System for Detecting Leakage of Energy Structure Liquid	Crane, Indiana	<ul style="list-style-type: none"> <li>Eliminate corrosion damage</li> <li>Able to detect internal leakage by using internal components</li> <li>Cost effective to manufacturers</li> </ul>

According to **PulseTech Products Corporation**, "thousands" of damaged lead acid batteries are needlessly disposed, adding to an already unhealthy situation.

### Competitive Advantage

The **only** technology which:

- System is internal to the battery**
- Can be automated or check with multi-meter.**

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