

CASE STUDY

Eight Years Later, The University of Michigan Battery Lab Still Relies on Voltaiq's Data-Driven Analytics to Accelerate Battery Technology

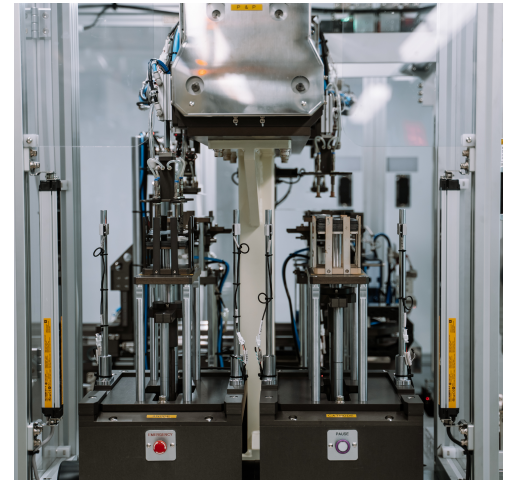
The University of Michigan Battery Lab is a campus research center offering academic and industrial users from around the world the ability to prototype, scale, and test new battery and battery materials innovations, with a focus on go-to-market acceleration. When organizations or academic researchers lack the necessary resources to build and test batteries and battery materials, they leverage the Battery Lab to prototype and test their innovation much faster and at a substantially lower cost than they could accomplish independently. The Battery Lab provides a standard battery design and formulation, allowing their customers to simply substitute their material or component into the appropriate production step, and benchmark its performance relative to the standard.

With decades of human experience and expertise in battery production and several million dollars of equipment that would otherwise not be available to small companies and researchers, the Battery Lab provides tremendous value to the battery ecosystem, paving the way for innovative battery technology to reach targeted markets effectively and efficiently. Large OEMs value the Battery Lab since they can evaluate new technologies and trust the results without needing to build out their own testing environments in-house. Collectively, the University of Michigan Battery Lab is an essential vehicle for scaling out the U.S. battery supply chain and EV production capabilities.



Challenge

Understanding battery behavior and evaluating the potential of a new battery technology requires building prototypes, conducting extensive charge and discharge cycling on the batteries, collecting data, and analyzing the results. This process generates large quantities of data that is cumbersome to manage, creating a number of challenges across the battery ecosystem.



“Voltaiq is such a game-changing solution. Eight years later and we’re still very impressed with the platform. I don’t understand why there is any barrier to adopting it. If you’re wondering if you can afford it, you can. You should be doing it. You’ll get more, better organized data with faster access. It’s a no-brainer.”

*Greg Less
Battery Lab Technical Director,
The University of Michigan Battery Lab*

For the University of Michigan Battery Lab, Greg Less, Battery Lab Technical Director, was primarily concerned with how to distribute results to all his various customers performing tests in the lab. He needed a secure and flexible method that would ensure there was no visibility into other customers' data, while also accommodating the fact that he constantly had different prototype batteries being tested at different times and running on a limited set of test equipment. To make matters worse, all of this data was being collected and stored in isolated databases on the PCs connected to each piece of equipment.

"I figured out all of the people, equipment and processes I needed to start up the lab, but I hadn't determined an effective way to manage and distribute all the test results to my customers," stated Greg Less. "I knew I could hire some battery techs or students to manage the data, but they would need to constantly pull data from individual cyclers databases, copy it into Excel to make reports, zip up huge data files, and send them to customers. It was an extremely manual process and provided a lot of room for error."

Greg was also concerned that such tedious work would lead to a lot of staff turnover. Finding and onboarding a researcher or a student and training them to plot and review data could take months. It was a resource-intensive process, and he couldn't afford to be left stranded. He needed a quick and seamless way to automatically aggregate battery data in-the-cloud, monitor ongoing test progress, and provide their customers secure access to test results.



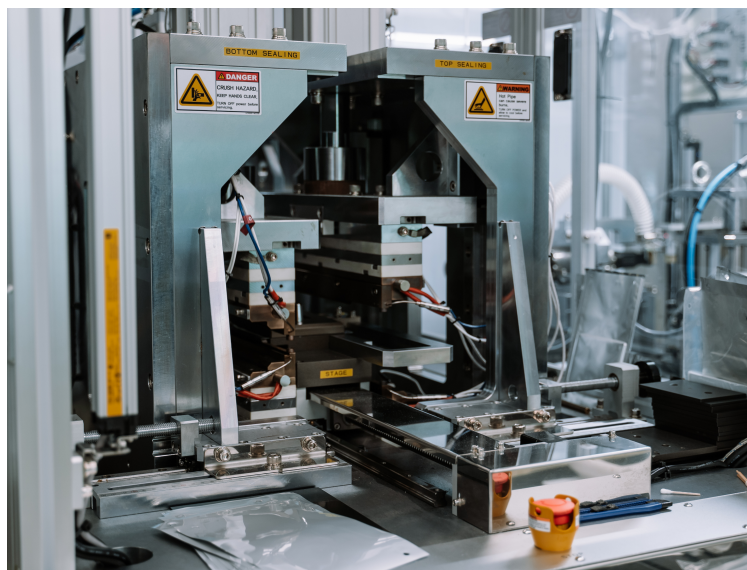
The Solution:

Greg met Voltaiq back in 2014 at The Battery Show where they discussed the lab his team was building, and how analytics and Enterprise Battery Intelligence™ could address his needs. At that time, the other alternatives were to hire dedicated staff or to build out a custom battery data solution from scratch. Greg saw the value of being able to plot data immediately with a few clicks and have that data easily stored in-the-cloud where customers could access data privately and securely.

The Voltaiq solution allowed users at the Battery Lab to acquire data as quickly as it was generated, reducing the frustration they previously had with their in-house process or other test labs they had worked with. In addition, Voltaiq configured a report using the platform's built-in functionality that enabled Greg to quickly sort through thousands of days of cycling, figure out how long each customer's cells had been on test, and invoice the customer the right amount, saving his team countless hours and enabling the lab to run efficiently.

Key Benefits of Voltaiq at the UM Battery Lab

- **Superior Data Sharing** - UM Battery Lab customers receive secure, private access to their test data, with real-time updates, per-cycle KPIs, and battery-specific visualization tools.
- **Streamlined Operations** - Implementing the Voltaiq solution automated the management and distribution of test results, and addressed their staff turnover concerns
- **Customizable Solution** - Based on the Battery Lab's needs, a custom report was configured to forecast battery cycling over time and automate customer invoicing





Result:

The ability to share data with customers, seamlessly and in real time, has allowed the Battery Lab to operate more efficiently and enable collaboration between battery innovators and their OEM partners.. Greg's team was, and still is, extremely pleased with Voltaiq's customer service which has been very responsive over the years.

With the lab's role as a central connecting hub for the battery ecosystem, the team at the Battery Lab is also very excited for the Voltaiq Community Edition, an open-access environment for battery data science and algorithm development, as it's been something that has been discussed in the industry for years.

"Ever since we started the lab, our customers have been asking us where they can find real data on how a range of batteries perform and standards for how to analyze it. With Community Edition, Voltaiq has come up with the solution that people have been asking for. We're very excited to begin using Voltaiq Community Edition."

Greg Less
Battery Lab Technical Director
The University of Michigan Battery Lab



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About Voltaiq

Voltaiq has built the industry's first Enterprise Battery Intelligence (EBI) software platform, helping its customers optimize battery performance, reliability and financing, while avoiding costly recalls and catastrophic battery fires. Voltaiq's EBI platform is the only purpose-built, fully automated software solution that marshals vast quantities of battery data from across the full product lifecycle, providing a window into real-time battery function and a detailed view into future performance and behavior. Founded in 2012 by veteran battery and software entrepreneurs, Voltaiq's global customer base includes industry leaders in transportation, consumer electronics, energy storage, and the full battery supply chain. For more information, please visit www.voltaiq.com.