

C-BATT™ to Present New Obsidia™ Anode Results at International Battery Seminar & Exhibit

Testing highlights new performance features that may enable longer battery life, deeper discharge, and improved military logistics storage

ORLANDO, FL, UNITED STATES, March 18, 2026 /EINPresswire.com/ -- C-BATT™ will present new



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Bill Easter, Vice President of C-BATT

research on its Obsidia™ advanced lithium-ion battery anode material at the International Battery Seminar & Exhibit (IBSE), taking place March 23-26 in Orlando, Florida. IBSE is one of the leading global conferences focused on battery materials, cell design, and energy storage technologies.

The poster presentation introduces new data indicating that Obsidia combines high lithium storage capacity with exceptionally low volumetric expansion during charge and discharge. This combination may enable longer cycle life,

improved structural stability inside the electrode, and greater tolerance to demanding operating conditions.

Recent measurements conducted by Dr. Akihiro Kushima and his research group at the University of Central Florida show that Obsidia particles expand only about 2-5 percent during lithiation and delithiation. Conventional graphite anodes typically experience roughly double that expansion during initial cycling. Lower mechanical strain inside the electrode can reduce cracking, particle breakdown, and degradation mechanisms that limit battery lifetime.

In addition to low expansion, testing indicates that Obsidia can deliver lithium storage capacity exceeding 500 mAh per gram, significantly higher than traditional graphite anodes. The material achieves this performance while maintaining a stable, amorphous, silicon-oxygen-carbon structure that accommodates lithium without the large structural changes seen in conventional silicon-based anodes.

The material also demonstrated unusual tolerance to deep discharge and low-voltage conditions. This characteristic may allow lithium-ion cells to operate safely across a wider voltage

range, while reducing risks associated with copper dissolution and other degradation mechanisms that occur when batteries are discharged too deeply.

Low-voltage robustness has important implications for defense and field applications. Batteries that can tolerate deeper discharge and extended storage at low state of charge may provide longer shelf life in military logistics systems and greater durability in harsh operating environments where battery packs may be stored, transported, or used intermittently. Improved tolerance to low-voltage conditions may also simplify battery handling during transport and assembly.

“Our goal is to develop an anode material that improves energy storage performance without requiring complex manufacturing changes,” said Bill Easter, Vice President of C-BATT. “Obsidia is designed to bring unique value for defense systems that demand long storage life and deep cycle field reliability, as well as increasing return on investment via longer life at deeper cycling in grid energy storage applications, without sacrificing energy density.”

Obsidia is produced using polymer-derived ceramic processing combined with domestically sourced carbon-bearing materials. This approach allows the anode material to be manufactured entirely within the United States, supporting a secure domestic supply chain for advanced battery components.

C-BATT is also collaborating with Argonne National Laboratory to further evaluate the electrochemical performance and safety characteristics of the material under controlled laboratory testing conditions.

Unlike many emerging anode technologies that require major manufacturing changes, Obsidia is designed for compatibility with conventional lithium-ion electrode processing methods. This may allow battery manufacturers to incorporate the material into existing production lines without specialized equipment.

IBSE Presentation Team

Members of C-BATT’s technical and commercialization team will be present at IBSE to discuss the poster presentation and ongoing development work, including:

Dr. James Fleetwood, Chief Technology Officer
Kyle Marcus, Director of Research and Development
Dr. Steven Stradley, Battery Scientist
Dr. Rudolph Olson III, VP of Technology
Bill Easter, Vice President
Josh McConkey, Director of Commercialization

Additional technical information from the IBSE poster presentation will be made available following the conference.

Obsidia is being developed to improve battery performance while supporting a fully domestic supply chain for energy storage materials used in electric vehicles, grid storage, defense systems, and industrial applications.

For more information, visit www.cbattmaterials.com

About C-BATT

Founded in 2023, C-BATT is a joint venture between X-BATT®, a pioneer in advanced battery materials, and CONSOL Innovations. C-BATT is developing Obsidia to help solve the ongoing supply chain challenges driven by the electrification movement. C-BATT's solution improves battery energy density and cycle life beyond what traditional materials can offer. The C-BATT battery lab is in Oviedo, FL, just outside the University of Central Florida. For battery materials development, C-BATT will use CONSOL Innovations' domestically sourced carbon resources. To learn more about Obsidia and C-BATT's U.S.-based energy solutions, visit <https://www.cbattmaterials.com/>.

About X-BATT®

Founded in 2019, X-BATT® pioneers tomorrow's energy-storage materials through curiosity-driven, disruptive R&D. Our mission is to advance energy-storage material science through bold research, innovative materials development, and collaborative partnerships, delivering transformative solutions for a sustainable future. Working with industry and research partners, we move innovations from the lab to production-relevant formats with a focus on safety, performance, and manufacturability. www.x-battinc.com

About CONSOL Innovations

CONSOL Innovations LLC, a wholly-owned subsidiary of Core Natural Resources, Inc., is dedicated to creating long-term value through sustainable innovations in carbon products, carbon materials, and carbon management markets. With a mission to "Reimagine Carbon for a Sustainable Future," CONSOL Innovations is founded on the belief that our abundant carbon resources can serve as an important building block for meeting the critical and evolving needs of society. The company, with primary operations in Triadelphia, WV, is focused on providing disruptive, carbon-based solutions for growing industries including aerospace, building products, and energy storage.

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