

Nevada Based K2 Energy Solutions believes Lithium Iron Phosphate Technology may be Solution to Aerospace Battery Problem

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In light of recent scrutiny concerning the safety of lithium ion batteries in the aerospace industry, Nevada-based battery developer and manufacturer K2 Energy Solutions, Inc. (K2 Energy) maintains that not all lithium ion batteries are the same. In fact, there exists an alternative to traditional lithium ion batteries that can be used with improved safety in the aerospace industry.

As a leading developer and producer of lithium ion batteries, K2 Energy designs a variety of energy storage systems based on its lithium iron phosphate cathode technology. The company's proprietary batteries have undergone extensive testing and analysis, and results suggest a level of safety that is significantly better than other lithium ion battery chemistries.

"It's no secret that any energy storage system, whether it's gasoline, jet fuel, or even lead acid batteries, by nature is hazardous when exposed to certain conditions like a spark, flame, or overcharge. For most companies the logical solution is to simply protect the fuel from exposure," says Johnnie Stoker, Ph.D, CEO of K2 Energy Solutions. "We've taken things a step further by actually changing the nature of the material itself. In the case of our batteries, by physically changing the cathode material we have created an environment where both the likelihood of a hazard, and the severity of an event if one occurs, is reduced."

As to why K2 Energy claims its batteries have a higher degree of safety, company executives point to three key factors:

1. Lithium iron phosphate batteries do not experience thermal runaway (the condition currently under examination in the aerospace industry)
2. Battery packs built with K2 Energy's cells prevent the spread of thermal or venting events.
3. K2 Energy batteries have a more robust design than typical pouch cell batteries

Lithium iron phosphate batteries do not experience thermal runaway (the condition currently under examination in the aerospace industry):

Thermal runaway by definition is a cascading thermal event that takes place in a battery where a failure and thermal event in a single cell can initiate similar events in adjacent cells. It can be initiated internally or externally to the cell but can ultimately lead to a dangerous, propagating reaction.

K2 Energy's lithium iron phosphate cathode material, however, does not experience thermal runaway because it does not release oxygen when subjected to high temperatures, over-charge conditions, or mechanical damage as is the case with most oxide-based cathode materials.

Battery packs built with K2 Energy cells prevent the spread of any thermal or venting events.

Understanding the risk associated with creating energy sources, K2 Energy intentionally incorporates proprietary materials, processes and cell designs that reduce the likelihood of unstable thermal events. Strenuous testing and examination has demonstrated that K2 Energy batteries are difficult to ignite because of the materials and cell design used.

K2 Energy batteries have a more robust design than typical pouch cell batteries

Pouch cells (batteries packaged in polymer coated aluminum sheets) are used commonly in a variety of industries. However, when they are in close proximity to each other, pouch batteries can be susceptible to damage by thermal events originating in nearby batteries. As a result, a failure in one cell can easily spread, causing neighboring cells to experience thermal runaway, or release chemicals that can contribute to a fire.

K2 Energy has designed a solution where each battery is packaged in robust steel enclosures, preventing it from being affected by thermal damage from nearby batteries or external sources.

"Since this company started producing batteries, our priority has been to find and develop new, safer and lower cost forms of energy storage," says Jim Hodge, Ph.D, CTO at K2 Energy Solutions. "We're proud of the headway the company is making and feel we're only in the beginning stages of where this technology can go."

Not only is K2 Energy's effort gaining momentum, it is catching attention. Because of the safety and effectiveness of K2 Energy cells, the company is seeing a steady growing demand for applications requiring the safest batteries available.

A white paper regarding safety can be obtained by contacting the Company at 702-478-3590, or at info@K2battery.com.

ABOUT K2 ENERGY SOLUTIONS:

K2 Energy Solutions, Inc. was founded to commercialize and manufacture rechargeable battery systems for electric vehicles and energy storage applications. The company's battery systems are based on a lithium iron phosphate cathode material whose inherent safety and low cost makes them ideal for the large format systems required for energy storage and EV applications. K2 differentiates itself as a solutions provider for large format battery packs and systems, developing products based upon customer requirements and utilizing expertise in Lithium Iron Phosphate (LFP) battery chemistry.

K2 is a private corporation headquartered in Henderson, Nevada, with manufacturing capabilities in both Nevada and China.

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