Why is LiFePO4 a better battery?

Most consumers believe all lithium batteries are created equal. In fact, most consumers are only familiar with a limited range of lithium batteries. The most common versions are built from cobalt oxide, manganese oxide and nickel oxide formulations. These lithium-ion batteries have only been around for the last 25 years. Over time, they have increased in popularity and have proven to be valuable in powering smaller electronics like laptops and cell phones. But lithium-ion batteries also gained a reputation for catching fire. Until recent years, this was one of the main reasons lithium wasn't commonly used to create large battery banks.

The lithium iron phosphate (LiFePO4) battery is inherently non-combustible, while allowing for slightly lower energy density. LiFePO4 batteries are not only safer, but they also have many advantages over other lithium batteries, particularly for higher power applications like the EcoRover Chairs.

Safety and Stability

LiFePO4 batteries are best known for their strong safety profile, the result of extremely stable chemistry. Phosphate-based batteries offer superior thermal and chemical stability which provides an increase in safety over lithium-ion batteries made with other cathode materials. Lithium phosphate cells are incombustible, which is an important feature in the event of mishandling during charging or discharging. They can also withstand harsh conditions, be it freezing cold, scorching heat or rough terrain.

When subjected to hazardous events, they won’t explode or catch fire, significantly reducing any chance of harm. EcoRover Chairs’ number one priority is safety for their users and is pleased to offer the LiFePO4 battery as an option for their all-terrain tracked wheelchairs.

Performance

Long life, slow self-discharge rates and less weight make LiFePO4 batteries an appealing option. Service life is five to ten years or longer, and runtime significantly exceeds lead-acid batteries and other lithium batteries. Charging time is also considerably reduced. This makes EcoRover Chairs with LiFePO4 batteries more efficient in their overall operation.

Space Efficiency

Also worth mentioning is LiFePO4's space-efficient characteristics. At one-third the weight of most lead-acid batteries and almost half the weight of the popular manganese oxide batteries, LiFePO4 batteries provide an effective way to make use of space and weight. This makes EcoRover Chairs with LiFePO4 batteries more efficient in their overall operation.

Environmental Impact

LiFePO4 batteries are non-toxic, non-contaminating and contain no rare earth metals, making them an environmentally conscious choice. Lead-acid and nickel oxide lithium batteries carry significant environmental risk. Especially lead acid, as internal chemicals degrade structure over time and eventually cause leakage. EcoRover Chairs is committed to Eco friendly operations and recommends the LiFePO4 battery to its users.

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