

How to Revive a Lithium-Ion Battery Step-by-Step Guide

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Lithium-ion batteries power all our modern gadgets, our phones, EVs, and energy storage. A Lot of times the battery fails or degrades due to various reasons. But don't worry you can still fix lithium ion battery issues using the correct techniques. You don't have to give up on the battery because reviving a lithium-ion battery is very safe and effective.

The methods and techniques we will discuss in this article are very detailed and will help you bring a dead lithium start battery back to working conditions by following the guide we will also explain when to give up and dispose of the faulty lithium ion battery.

Lithium-ion batteries have a high energy density and are thus widely used. This can occur because of several other factors and so some small modification can help fixing lithium ion battery issues. Every battery has a fixed life, but we can still take measures to keep the battery working and revive a lithium ion battery. The only way of finding a solution is to understand the root cause of why Lithium batteries die.

Before attempting to revive a lithium-ion battery, you need to take safety measures. Lithium-ion batteries can cause risks like chemical leakage, fire, or even explosion if mishandled. Proper safety measures will protect you and ensure a safe revival process. These are a few safety tips and measures one should take before starting to revive a lithium ion battery:

There are several methods that can help to revive lithium ion battery cells. Each approach varies in complexity and effectiveness, so understanding the best method for your situation is important. Below are some of the most common techniques for reviving a lithium-ion battery.

The slow charging method is by far the easiest and safest way to solve lithium battery problems. You have to use the same battery to apply only a low current for the slow charge. The slow charge method is a docile approach in which you gradually restore the battery"s functionality. This will not let the battery load much so that it might not get damaged beyond repair. If you have a Li-ion battery that has been deeply discharged, the battery can be charged slowly, and one can restore the charge to the battery.

To implement this method, you can connect a multi-meter between the battery and the charger. A slow current setting should be selected, and that is it. You can scale the amount of voltage that is getting raised in the multi-meter with time. If it starts to charge normally, you can leave it for a couple of hours together. This, in turn, will also help to recharge the Li-ion battery cells, which are weak as they cannot charge at the normal rate.

Parallel charging is the term which means the technique where a healthy fully charged lithium-ion battery is



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connected to a dead or below-discharged lithium-ion battery to boost up the charging. When two batteries are connected in parallel connection, both the lithium batteries have now shared the energy of each other. This is an effective method to recharge the lithium battery packs which are not charged completely but are not charging using their charging potential.

The necessary precautions to be taken while charging this method include being very cautious and using a voltmeter. Both batteries should have the same voltage and capacity, and one must monitor the process continuously. The most important point to be noted is, don"t leave it unattended as the battery may tend to overheat if successful, and it may lead to damage when the batteries used are of the wrong capacity. This is the professional method to parallel charge lithium-ion battery packs.

The freezer method is known to be a somewhat controversial method, but it can work well with some of the lithium-ion batteries, which have stopped charging because of internal chemical malfunction inside. The idea of this method is to put the battery inside a freezer for a few hours, so the internal chemicals of the battery get stabilized, which in response can jump-start the battery back to holding a charge again.

To use this method, firstly, seal the battery inside a plastic bag carefully to avoid any kind of moisture damage, and then place the battery inside the freezer for several hours. Then, remove the battery from the freezer let the battery reach room temperature, and then try charging it. While sometimes this process causes a layer of a frozen lithium-ion battery, it can also degrade the batteries. Always take precautions and only try this method with batteries that show no physical damage, including swelling or leakage.

Another way to fix Lithium-ion battery cells is by voltage applying method to activate the battery. This step involves providing a small amount of voltage to the battery using an adjustable power supply. This is similar to the "jump-starting" capability of batteries. This step is very helpful in the case where the battery has entirely stopped charging after the deep discharge of the battery and the battery is shown in the dead state.

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