

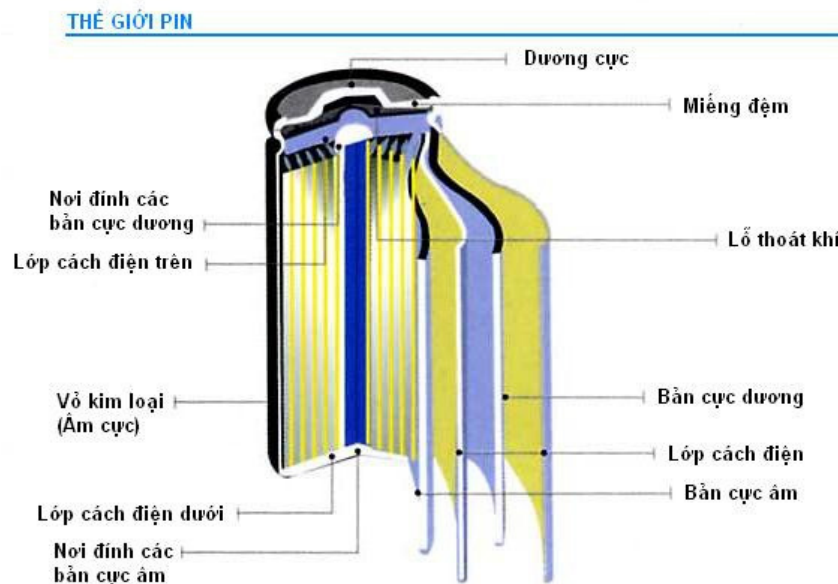
# 'Dissecting' Lithium batteries to find out the cause of the fire due to backup charging?

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## Why are Lithium Batteries burnt?

Thanks to Lithium batteries, we can use all-day smart mobile devices today. If compared to the same unit of volume, Lithium batteries can store a greater amount of energy than many other older batteries, but when forced to completely release the energy, it will create big explosions. This is also the reason why the explosion-proof technology developed, the explosion caused by Lithium battery still occurs.



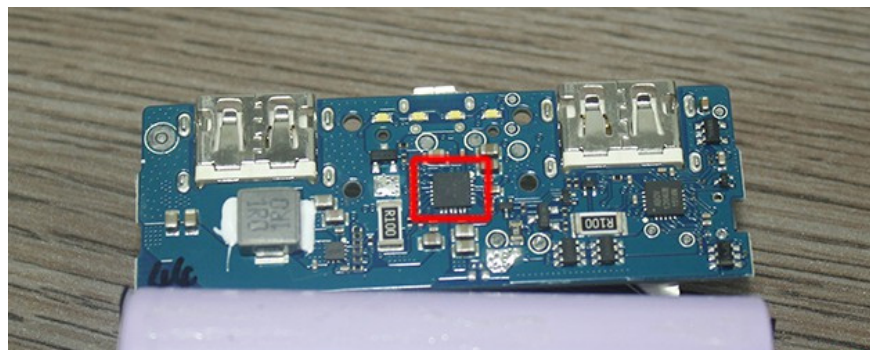
Backup charger is the most dangerous of all devices using Lithium batteries because it has the largest capacity compared to the volume of equipment.

## Protection mechanism of Lithium batteries

Lithium batteries have an electronic circuit that disconnects the current from the battery when it is full. This battery charging circuit is the first protection layer because without it, the current will be continuously charged, until the battery's storage capacity is exceeded, causing swelling and explosion. For high-end batteries, this protective battery circuit is also equipped with an intelligent chip to control the charging current, keeping the charging current from exceeding 1.5 to 2A depending on the type of battery.

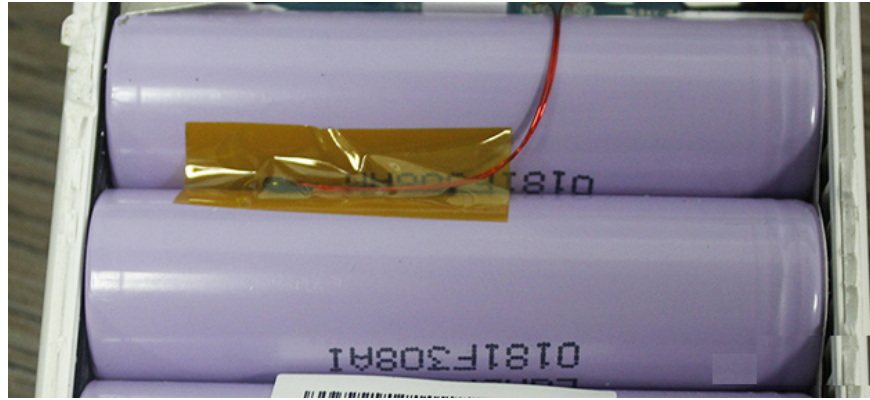


In inexpensive, low-quality batteries, this protection circuit only has a function of stabilizing the charging voltage at 5V with very simple components.



IC line adjustment of protection circuit.

When the battery is depleted and the voltage is fixed, it will actively absorb very strong currents, up to 2.5 -3A. At that time, if not controlled, this current will cause the charging speed to increase rapidly, leading to a lot of battery heat, the battery electrolyte under tremendous pressure, to the limit of destruction it will leak. and touch the 2 polar plates to release all the battery energy out of the fire.



This droplet component is the thermal resistance.

The second protection mechanism is a type of thermistor that interrupts the charging current when the battery is hot to protect it. And in poor quality batteries there is almost no link.

### **Why even if battery backup is not charged, can it explode?**

The reason is that the electrolytic layers have been leaked before and the max pressure of the battery when fully charged (the battery is fully charged and the solvent inside the battery is at the highest pressure) will cause a serious leak. more important. And when the 2 extreme copies touch each other, it will explode even if the charger is unplugged.

### **How to use backup charger properly to prevent fire**

1. Important notes when using backup charger to prevent fire
2. Cause backup battery charger explodes, causes fire and prevention
3. Choose to buy a backup battery suitable for smartphones
4. Recognize genuine and fake Xiaomi backup battery

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