What happens if the battery pack discharges unevenly

What causes cell imbalance in a battery pack?
In addition,the position of cellin battery pack also causes cell imbalance due to the differences in heat dissipation and self-discharge [15,16].

What happens if a battery reaches a discharge cut-off voltage?
Once one individual cell in a series connection reaches the discharge cut-off voltage,the entire series connection will stop discharging. Thus,many cells are never fully charged or discharged,and the available capacity of the battery pack is subject to the minimum capacity of the individual cells.

How do you get batteries to discharge evenly?
Getting the batteries to discharge evenly is essentially impossiblein a 'real world' application. In my flashlight test experiment the battery closest to the bulb always discharged soonest,the other batteries discharged inconsistently sooner/later. Using rechargeable batteries and changing their position didn't affect this result.

Why do flashlight batteries not discharge evenly?
This is common and apparently no viable study explains exactly why. Getting the batteries to discharge evenly is essentially impossiblein a 'real world' application. In my flashlight test experiment the battery closest to the bulb always discharged soonest,the other batteries discharged inconsistently sooner/later.

How to manage cell imbalances in a battery pack?
Cell balancingis often considered as the first option to manage cell imbalances in a battery pack. However,cell balancing in parallel connections requires cells to be connected through DC-DC or DC-AC converters,as shown in Fig. 13. The current of each cell can then be individually controlled.

How much energy does a battery have at the start of discharge?
For one cell to be at 1.5V while the others are fully exhausted then they would have had only 5% - 10% of their new energy content at the start of discharge. SO this is not a batch variation - two of the batteries were very close to dead at the start of discharge OR something else has happened not mentioned in your question.

Uneven discharge in parallel battery packs can arise from several factors, including differences in internal resistance, battery capacity, aging, and external temperature. Addressing these ...

Thermal runaway happens when the temperature of the battery gets too hot, causing the chemical reaction inside the battery to accelerate. ... One of the great advantages to using batteries in parallel is that it increases ...

The OCV for a battery can be misleading. A "good" battery will generally have an OCV >1.74 volts. Any

battery with an OCV <1.70 (after it has been allowed to recover) is completely ...

So 100% on your dash is probably 80-90% on the actual battery. That"s how they can offer a long battery warranty. So 10% to you is probably higher at the battery. And 10% isn"t that low. I"d ...

Deep discharge refers to discharging a lithium-ion battery, such as an 18650 or 21700 battery pack, to a very low state of charge, typically below 20%. This practice can significantly shorten ...

A lithium battery will self-discharge at a rate of about 5% per month, so if you don"t use it for six months, the battery will be completely discharged. ... Once this happens, the ...

When a lithium battery gets wet, water can infiltrate the internal components, accelerating chemical reactions that degrade functionality. Initially, users may notice subtle ...

Uneven temperatures within a battery pack can negatively affect its performance, longevity, and efficiency. Having all the cells at almost the same operating temperature is necessary for properly charging and ...

In RC systems they usually have a battery cut-off (in the controller) that activates when battery voltage drops below certain level. It looks at total output voltage, not at ...

If the voltage is below 2V, the internal structure of lithium battery will be damaged, and the battery life will be affected. Root cause 1: High self-discharge, which ...

Leakage of electrolyte happens when a battery is overcharged and the pressure inside exceeds the limits of the casing. ... When a battery is overcharged, it may experience ...

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