**Lithium-Ion Batteries - What You Need to Know About Li-Ion Technology?**

Currently, **Lithium-Ion** batteries have the most promising chemistry and are the fastest growing technology. It has the best energy to weight ratio, i.e., they pack the most power with the smallest bulk. Lithium-Ion batteries have no memory effect or last effect and can accept a maximum charge continuously.

**Components of a Lithium-Ion battery**

The battery is made of a cathode, an anode, an electrolyte, a separator, and two current collectors.

**Working of a Lithium-Ion battery**

Lithium is stored in the anode and cathode. Positively charged lithium ions are carried from the anode to the cathode by the electrolyte and through the separator. This results in the creation of free electrons in the anode, which produces a charge at the positive current collector. The produced current then flows from the collector through the device being powered to the negative current collector. The separator stops the flow of electrons inside the battery.

**Difference between Lithium batteries and Li-Ion batteries**

They are primarily different in their chemistry. A Li-battery is a disposable source of power. It is composed of Li-metal compounds. Moreover, Li-batteries cannot be recharged.

On the other hand, a Li-Ion battery is rechargeable. They are intercalated, that is, the lithium in the battery moves between the two internal electrodes. It is because of this movement, also called as reversibility, that Li-Ion batteries are rechargeable.

**Benefits of Li-Ion batteries**

* Li-Ion technology assures absolute and great **battery performance.**
* Li-Ion batteries have more power for their size than both nickel cadmium and nickel metal hydride batteries.
* They combine single-cell technology with a larger energy reservoir.
* Li-Ion batteries hold their charge for longer and provide steady power.
* They are relatively more resistant to overcharge and have less chance of experiencing electrolyte leakage.
* They can be specially designed to run power tools

**Limitation of Li-Ion batteries**

* **Li-Ion batteries** easily degraderegard of the frequency of its use.
* They are extremely sensitive to hot and cold temperatures and degrade quicker in extreme temperatures.
* **Lithium-Ion for your devices** has a chip in them that makes a battery refuse charge once the power has fallen below a certain threshold. When this occurs, the battery is beyond repairs.
* Manufacturing Li-Ion batteries is expensive. They are 40% more expensive than nickel-cadmium batteries.

**General tips for Li-Ion batteries**

* Use them more often as they are easily degradable irrespective of the frequency of use.
* Store them in a cool and dry place
* Ensure that they have a full charge before storing them away.
* While using, be wary of its power levels to avoid it from falling beyond its charge threshold.
* Occasionally, Li-Ion batteries may require more than one charge. It is usually better to keep them charging overnight for best performance.
* Throughout their life, recharge Li-Ion batteries once a week overnight.
* When you buy a new Li-Ion battery, ensure that you buy a new one. They tend to degrade on the shelf of sellers. Most manufacturers provide an expiry date. Ensure to check this date before buying.